



Technical Assistance Consultant's Report

Project Number: 37216
February 2005

Papua New Guinea: Establishment of Pilot HIV/AIDS Care Centers

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For National Department of Health

Asian Development Bank

Subject : A project on HIV/AIDS care
including ARV focusing on
The establishment of a day care
centre in PMGH

Place(s) visited : Papua New Guinea

Date of mission : 2 May, 2004 – 28 February, 2005

Authors and designation : Dr. Nopporn Pathanapornpandh

Name of focus

Participating agencies : Government of Papua New Guinea
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ASIAN DEVELOPMENT BANK
REGIONAL OFFICE FOR THE WESTERN PACIFIC
MISSION REPORT EXECUTIVE SUMMARY

Dr. Nopporn Pathanapornpandh Papua New Guinea

2 May, 2004 – 28 February, 2005

Author (s)

Place (s) visited

Date of mission

Objectives of mission

Under supervision of the WHO representative in PNG and in collaboration with the Ministry of Health, PNG

1. Review the current status of the care, treatment, counseling, and support program on HIV/AIDS, especially focusing on programs available in Port Moresby and linked to Port Moresby General Hospital (PMGH).
2. Support the development of national guidelines on anti-retroviral (ARV) therapy based on WHO generic guidelines for resource-limited settings.
3. Support the development of protocol for access of people who living with HIV/AIDS treatment.
4. Promote and strengthen coordination between the public health service and partners (NGO, churches, public and private sectors) to improve referrals and compliance following treatment.
5. Provide training to healthcare workers and community leaders in all aspects of care, treatment, counseling, and support for PHA.
6. Support the development of operational research related to the program.
7. Support the development of a monitoring and evaluation system for the program.

Summary of activities, findings, conclusions and recommendations:

The writers conducted several of site visits in Port Moresby, Lae, Mount Hagen and Rabaul including meeting, trainign and workshop. People and organization involved include National Department of Health(NDOH).PMGH, NGOs and PHA. The writer involved in developing guidelines for ART in

adult, children, pregnancy, post exposure prophylaxis and recording form for monitoring and evaluation of ARV program.

Conclusion

For a better caring, monitoring and evaluation of HIV/AIDS cases in the country, national guidelines for adult, children and pregnant women were developed together with the recording form and procurement system. The surveillance and post exposure prophylaxis reporting form and guidelines were revised and developed. The referral system was developed to strengthen HIV/AIDS care and increase drug adherence. The training for comprehensive HIV/AIDS care were set and given to the medical staffs in PMGH, 3 regional hospitals and NGOs.

Anemia was common among HIV/AIDS cases. Among 182 cases of HIV positive patients at PMGH, 38 cases (25 females and 13 males) who were in stage III and IV by WHO definition have been selected for ARV treatment since February 2004. However some cases enrolled in the project were not well fit into the national guidelines and some didn't have total lymphocyte count result. Most cases got Zidovudine (AZT)+ Lamivudine (3TC) + Nevirapine (NVP) with only 3 tuberculosis cases (2 months after treatment) got AZT+3TC+ Efavirenz (EFV). Some anemia cases after starting ARV therapy, got severe side effect from AZT which worsen their anemic condition. The data recording form was not well designed and brought to limitation of information, analysis and usage. One HIV cases at Angau Memorial Hospital (AGMH) was also got ARV treatment. The referral system was still not in a good function.

Recommendation

1. Before enrolment, every new cases should be completely evaluated underlying disease and well prepared to reduce reconstitution syndrome and side effect for the most effectiveness result.
2. Because anemia was very common, hemoglobin should be closely monitored for those who get AZT. Stavudine (D4T) should be used instead of AZT in anemic cases and whose hemoglobin drop to be lower than 8 gm%.

3. The physicians should use standard data recording forms that were developed to work with or without computer, for monitoring and evaluation at national level.
4. The doctors from department of medicine, pediatric and OB-GYN should work closely together for integration and better referral system in hospital.
5. There should be HIV/AIDS committee at PMGH and regional hospitals to create network between departments and outsides, make a plan, and solve the problem related with HIV/AIDS care. The committee should comprise of medical staff from various sectors, i.e., doctor, nurses, laboratory, social worker, pharmacy.
6. There should be training program for medical staff who involve with HIV/AIDS care, including registrar, intern, student nurse to increase knowledge and skill to care patients more properly.
7. Referral system should be more emphasized to strengthen high drug adherence and follow up rate.
8. HIV clinics should have fulltime doctors to cope with the increasing number of patients and for a better continuum of comprehensive care.
9. The role of PHAs should be strengthened to reduce discrimination, stigmatization and to empower them. Monthly meeting among them in HIV/AIDS clinic will be the beginning step of group setting.
10. There should be persons who care reporting and procurement system particularly for the provinces.
11. The surveillance system should be improved particularly sentinel surveillance and behavioral survey to detect problem earlier for better planning, monitoring and evaluation.

CONTENTS

Page

1. PURPOSE OF MISSION	
4	
2. BACKGROUND	
4	
3. ACTIVITIES AND FINDINGS	
3.1 Activities	
5	
Findings	
5	
4 CONCLUSIONS AND RECOMMENDATIONS	
4.1 Conclusions	
8	

4.2 Recommendations	8
5 ACKNOWLEDGEMENTS	10
Appendix	
Appendix A - LIST OF PERSONS MET	12
Appendix B - SUMMARY OF FINDINGS OF FIELD VISITS	13
Appendix C – Monthly Activities	15
Appendix D – Screening Form	17
Appendix E - Consent Form	18
Appendix F – Clinical Monitoring Form For Adult	21
Appendix G – Monthly Report	25
Appendix H – Heduru Management Committee	26
Appendix I - Prevention to Child Transmission (PMTCT)	27
Appendix J – Surveillance System and reporting form	
Appendix Post Exposure Prophylaxis guidelines and reporting form	
Appendix Recording form to follow-up children born from HIV infected mothers	
Appendix ART Recording Form for Adult cases	
Appendix ART Recording Form for Pediatric cases	
Appendix ART Recording Form for Pregnant Women and PMTCT	
Appendix K - Abbreviation	30

I. PURPOSE OF MISSION

Under Asian Development Bank support and supervision of WHO representative Papua New Guinea and in collaboration with national authorities:

1. Review the current status of the care, treatment, counseling, and support program on HIV/AIDS, especially focusing on programs available in Port Moresby and linked to PMGH.
2. Support the development of national guidelines on anti-retroviral (ARV) therapy based on WHO generic guidelines for resource-limited settings.
3. Support the development of protocol for access of PHA treatment.
4. Promote and strengthen coordination between the public health service and partners (non government organization, churches, public and private sectors) to improve referrals and compliance following treatment.
5. Provide training to healthcare workers and community leaders in all aspects of care, treatment, counseling, and support for PHA.
6. Support the development of operational research related to the program.

7. Support the development of a monitoring and evaluation system for the program.

2. BACK GROUND

Since 1987, 9851 cases have been reported as HIV positive out of a total population of 5.4 millions (June, 2004). From consensus workshop in November, 2004, an estimated number of HIV positive among 15-49 year age group was between 45,000-75,000 cases. Among reported case, 52.0 % were male and 48.0% were female. Heterosexual (79.9%) is the predominant mode of transmission, 93.6 % is adult. The majority of HIV/AIDS cases have been found in the National Capital District (60.8 %) and Western Highland (14,3 %) province. While number of cases from province of origin, was highest in Western Highland (cases) and Eastern Highland (cases). During January-September 2003, 1643 cases were reported (30.4 %) when compared to the total time since first case have been diagnosed or 1.4 times when compare to the same period of time last year, 313 deaths were reported during this period. From province of origin, rate of HIV/AIDS cases were highest in Gulf (/100,000 Population), Central (/100,000 population), Southern Highland (/100,000 population) and Easter Highland (/100,000 population), respectively. HIV prevalence among pregnant women was 2.5%, 1.4 % and 0.9 % in Lae province, Port Moresby General Hospital and Goroka, respectively. While the HIV prevalence was 19.0 % among Tuberculosis patients and 1.6-8.1 % among Sexual transmitted Infected patients from various STI clinics.

From the data in PNG, UNAIDS estimated that the prevalence of HIV infection among 15-49 year age group was 0.4 % and 0.6 % in the year 2001 and 2003, respectively. Number of new cases among 0-49 year age group was 2,009 and 3,600 cases, and number of dead cases were 240 and 540 cases in the year 2001 and 2003, respectively

From global fund proposal, the number of HIV/AIDS cases who will be on ART in PNG is set to be 300 cases at the end of 2004 and 1,500 cases

in the next following year. Currently among 182 HIV cases who attend at Heduru clinic, 38 cases has been selected and started ART since February.

The referral system and co-ordination among NGOs and hospitals was quite weak and role of People who living with HIV/AIDS (PLWHA) was quite weak too.

The writer was assigned to strengthen ARV program by setting appropriate referral system to support the patients to get the treatment. Surveillance system and PMTCT, pediatric guidelines will also be developed.

3. ACTIVITIES AND FINDINGS

3.1 Activities

The writer worked at HIV clinic (Heduru clinic), wards, ANC at PMGH, together with the technical advisor, STI/HIV/AIDS and National department of Health, chief physician, registra doctor, Deputy chief Pediatric Southern region, Specialist Medical Office of Obstetric and Gynecology PMGH, counseling coordinator of National Capital District Provincial AIDS Committee Secretariat (NCD PACS). The writer also performed training for 3 regional hospitals and NGOs in NCD to strengthen comprehensive care and referral system.

Meetings with technical advisor, chief physician, registrar doctor in charge of the clinic and the writer, was set to discuss about the information that will be used for monitoring and evaluation at national level for adult, children and pregnant women. The previous data recording form was revised and new ones were developed. The program used for recording and analysis was EPI INFO version 3.3.3, in favor of no copyright and easy for using. Instead of patient' s chart that is often lack important information and very difficult to extract the information, the questionnaire was developed to be used for both with and without computer.

The information from the patients under ARV treatment was analyzed and discussed to find the weak points and to improve the services. The

service for providing care was discussed and changed according to the information got.

The writer met with specialist medical office of obstetric and gynecology to set the protocol for prevention of transmission from mother to child (PMTCT), comprehensive sentinel surveillance among pregnant women who attend Antenatal care clinic(ANC). This protocol will be used at national level for finding risk factors among pregnant women, evaluating the trend of HIV infection and rate of vertical transmission among the children born from HIV infected mothers.

The meeting among Coordinating PMTCT committee was set. National guidelines for PMTCT were discussed and the appropriate regimen was developed.

The writer met with Deputy Chief Pediatric Southern Region to develop the ART protocol for children. The data recording form was discussed and developed.

The writer set the program management training course, for core doctors from 3 regional hospitals, to let them prepare and run ART program in the hospitals.

The writer set the comprehensive HIV/AIDS care training course, for core medical personnel in 3 regional hospitals to increase their knowledge, strengthen their capacity and to set the referral system.

The writer with technical advisor met NCD PACS and set the meeting among NGO and PHA support groups to develop the appropriate referral system to prepare and support patients to get the treatment.

The writer revised the surveillance form and changed according to the information needed for faster and better evaluation.

The writer helped in developing global fund proposal.

The writer worked together with another UN organization, i.e., UNAIDS, UNICEF in the field of HIV/AIDS.

3.2. Findings

Summary of findings of sites visited during the mission are indicated in Annex 2.

3.2.1. Situation on HIV/AIDS in Papua New Guinea

(1) Policy, strategies and guidelines

- (a) National HIV/AIDS Medium-Term Plan (2004-2008) was completed, including ARV, however PMTCT guideline and ART for the children was not included in the plan.
- (b) Global fund proposals round four was endorsed by country coordinating mechanism and submitted to Geneva. The goal of ART in PNG was set to be 300 and 1,500 cases at the end of year 2004 and 2005, respectively.
- (c) No high position policy maker, mentioned about ART program in the country.
- (d) There was quite weak in resource allocation both man power and budget, to support ART program.
- (e) A National guidelines for ART for adult was developed in February 2004 and ART has been started since that time.
- (f) A National guideline for ART for children and infant feeding has been developed since June 2004.
- (g) A National guideline for prevent of transmission from mother to child has been developed since August 2004.

(2) Health facility based care

- (a) PMGH has been operating HIV (Heduru) clinic every Friday since the middle of July 2003, and recently expanded more service on Tuesday and Wednesday for providing treatment and educating patients who will be on ART. However the doctors, who care the clinic, could not come to the clinic every clinic's day. The cases who need ART had to wait for a long time before starting the treatment.
- (b) Currently there were 272 HIV infected cases who came to get the service at Heduru clinic, 66 % of them are in WHO stage III and IV. 64 cases among them have been selected for ART since February 2004 by using clinical criteria. 35 cases were given the first line regimen as AZT+ 3TC + NVP while 3 cases who had tuberculosis were treated with AZT+3TC+EFV. However the mean of

haemoglobin at starting time was only 8.3 gm % and brought to the cause of death among some patients after anemic condition get worse by the side effect of AZT. Some cases also didn't fulfill with the criteria for ARV treatment.

- (c) These cases started ART after two weeks of follow up and 1-2 training sessions on Wednesday afternoon. At the beginning, the patients will be described how to take the drug properly. The picture of the drug will be given to remind the patients of taking time (Month calendar). The first appointment was 1 week after, however the drug was given at one month period. This was why some cases did not come as appointed but came at one month period when all drug were run out off. Some cases did not come as schedule but came back late with very serious condition and some died.
- (d) It was quite often that the patients did not take the drug as prescribed particularly those who did not bring anyone with them,
- (e) While most cases came to the clinic with anemia but very few cases were diagnosed and found their underlying disease to treat for those things. Oral rehydration salt (ORS) that is cheap and easy to use for improving dehydration condition particularly those who have chronic diarrhea, is not in practice. Chest film and some base line investigation were also not performed for some cases. The result of the laboratory investigation often did not come to the clinic at the starting time.
- (f) The detail information about HIV/AIDS cases and treatment were written by physicians. There is no systematic recording form, to be filled in. The physicians and nurses in the clinic will extract the information from the patient's charts and fill information into the computer. EPI INFO version 3.2.2 was used as the program for recording and analysis. However the computer data recording form was quite weak and did not contain some important information. There were many open questions that was very difficult to be analyzed.

- (g) The consent form is still not in practice.
 - (h) The nurses who work at Heduru clinic, ANC, and in-patient medicine and pediatric wards that take care HIV/AIDS cases still have very limited knowledge about HIV/AIDS care, and did not get any special training for HIV/AIDS care.
 - (i) ARV was given to four case of HIV/AIDS patients at AGMH, the rest of the cases were evaluated and prepared for ART. In Rabaul, there was also one case got ARV and had to postpone for the rest of the cases.
 - (j) There was coordinating PMTCT committee in PNG, and developed national PMTCT guidelines in July 2004. However PMTCT program is still limited in some hospitals.
 - (k) Information related with HIV infection among pregnant women was quite limited, only some HIV prevalence rate among pregnant women was available.
 - (l) A National guideline for ART for children was developed in June 22nd , 2004.
 - (m) During January-September 2004, 81 children were diagnosed as HIV infected person, however there is no ART given to the children in PNG. However the children born form HIV infected mother will get PCP prophylaxis for 6-12 months. If the children had the history of tuberculosis mothers, they will also get tuberculosis prophylaxis.
- (3) Home-community
- (a) Currently there are many groups of NGO working in Port Moresby and few in the provinces, mostly emphasis on information, education, voluntary counseling and testing, not much involve with treatment. There are some training courses, emphasized on comprehensive care but in a very small scale.
 - (b) In Port Moresby, 9 urban clinics, 2 care centres and 8 day care centres are providing basic care such as counseling, home visits and psychosocial support.

- (c) The nurses from 3 urban clinics, Simon of Cyrene, St. Mary Medical centre, Salvation Army and Anglicare got the training for comprehensive HIV/AIDS care including ART.

Peer support of people living with HIV/AIDS

- (a) There are very few active of PLWHA working as peer educators and not in nation wide level.
- (b) There was a meeting among HIV infected patients at PMGH on April 19th, 2004.

(4) Surveillance system.

- (a) The surveillance system was quite weak and slow in reporting. Information needed for evaluation and monitoring was inadequate.

- (b) Sentinel surveillance was performed in some high prevalence groups and pregnant women. However the sample size was low and was not well designed.

(5) Training program

- (a) There were many training courses related to HIV/AIDS care, however these courses were separated and did not cover the whole information about HIV. Some participants got the training in the same topic while some medical staff never has been trained at all. No core group who worked with HIV/AIDS cases, were identified.

3.2.2 Work plan development and WHO support

During discussion with WHO Representative PNG, the writer present the plan for the next steps:

- (1) Care: The regional hospitals should start ART as soon as possible to expand the number of patients under ART to be 300 cases before the end of 2004 and 1,500 cases next year. Some doctors from regional hospital will come to PMGH to get information and experience from the first group of patients under ART and learn about data recording form for future monitoring and evaluating process.

- (2) PMTCT is urgently required and should be developed very fast to catch up with the problem of high HIV prevalence among pregnant women and increasing trend of HIV infected children. ART for the children should start in collateral with ART in adult this year.
- (3) In collateral with VCT that will expand into the provinces, the training of comprehensive HIV/AIDS care should be set in most provinces to increase capacity for caring and not to let PLWHA in frustration. At least for opportunistic infection treatment and prophylaxis should be available in all hospitals before the end of year 2005.

(3) Issues discussed in the meeting with PMGH, National Department of Health, WHO Papua New Guinea

The issues discussed in the task force and wrap-up meeting are as follows

- (a) The criteria for giving ARV for HIV/AIDS patients should be strictly follow the national guideline and the patients should be well prepared before treatment, particularly anemic condition. Stavudine (d4T) should be first line drug instead of AZT, because anemia was quite common.
- (b) The coordination and net work among NGOs should be strengthen to support the referral system.
- (c) The referral system should be more emphasized to strengthening HIV/AIDS care. The meeting among NGO and PMGH staffs should be set to set the mechanism to transfer the patients to the hospital and transfer them back to the community. Social support for the patients who could not depend on themselves should be also provided.
- (d) There should have time for patients who come for ARV to be together and form PHA net work to share experience and support each other. The place should be inside the working place to make it cheap, easy and can be maintained.
- (e) To monitor and evaluate ARV program when expand to enroll more cases from various hospital sites all over the country, the standard data recording form should be developed and be used in every work place. The data recording form should be in both paper and computer

form. The information to be collected should be enough for analysis but not too much nor difficult to fill in.(Appendix F, G)

- (f) Sentinel surveillance among pregnant women should be improved to get more information and can be used to find risk factors and trend of disease. The sample size should be enough and more precision and can be used as representative of the country situation for monitoring and evaluation. The reporting form for HIV cases should be adjusted to include more important information. (Appendix J)
- (g) National guidelines for OI treatment and prophylaxis is urgently required to support ARV therapy .

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusion

Progress and constrain:

- Currently the total HIV cases under ART are 39 cases (February 28th, 2005). Most cases were treated with the regimen of AZT, 3Tc and Nevirapine, only 3 tuberculosis cases were treated with AZT+3TC and EFV. ART were given to one case in AGMH and one case in Rabaul. PMTCT program and pediatric HIV/AIDS care including ART are in the progress of development.
- The writer provided training course of HIV/AIDS comprehensive care in 3 regional hospitals, nurses from PMGH and NGOs. The referral system was also set and in well progress.
- There are some training courses about comprehensive care for HIV/AIDS and home base care by other sectors, however the role of PLWHA is still very limited.
- Confirmatory test was set at Mt Hagen General Hospital in October and at AGMH in November, 2004 to reduce the number of specimen to Central Public Health Laboratory (CPHL) and reduce waiting time for the result.
- To that end, the purpose of this consultancy was to strengthen NCD capacity by providing technical support and training for the implementation of a comprehensive continuum of HIV/AIDS care and therapy, including ARV throughout the Port Moresby. When compare to last year, it t can be

said that there are lot of progress in ART, counseling, social support and referral system while prevention, testing still do not have much in progress.

4.2 Recommendations

1. Development of partnerships: collaboration, coordination and referral:

- To promote PWLHA involvement, there should have a meeting among HIV infected cases who come to the hospitals to share experience and support each other. Monthly meeting at HIV clinic may increase the opening HIV status among the patients and bring to peer education and support. However the meeting should be in the workplace to reduce the cost, making better relationship between health care team and the patients and also can be maintained.

2. On-going HIV/AIDS training:

- More medical doctors who care HIV/AIDS cases from various departments and hospitals in Port Moresby and in the provinces should get some training for HIV/AIDS care and some at international course to be reference person to maintain HIV/AIDS care in long term. The training place for international course, should have comprehensive care and have enough cases for increasing experience particularly long term side effect and long term care. HIV/AIDS care should be put in the curriculum for medical students and nurse students.
- More nurses from medicine, pediatric and OB-GYN, emergency department in PMGH and regional hospitals should be trained for HIV/AIDS care. The training course should bring them together to make them know each others and know the job of each sector to set the intra-communication and bring to intra-hospital referral system. The training should be half a day per week to lessen the effect of manpower, and make the training time to be long enough for creating a good relationship. To support for the future referral system, the nurses

from urban clinics and NGOs where still didn' t get training in 2004, should be included.

- Nurses at various level all over the country are also required training, although in less detail. Nurses should be more involved in counseling and some common OI treatment and prophylaxis. Training should be given by the doctors and nurses who attend the complete training course.

3. Development of an effective infrastructure:

- Every hospital where ART program will start, should have HIV committee to support the program and create the coordination. CEO and DMS should be the members of the committee to raise priority and strengthen the program.
- The Heduru clinic should make greater efforts to involve PHA and family members in HIV/AIDS care and therapy. In addition, a peer education system should be developed. This will promote greater HIV/AIDS awareness and support while also supporting drug adherence.
- CD4 test is very important for monitoring ART program and to differentiate tuberculosis cases that they need ART or not, including the decision for ART in pediatric. CD4 test should be set at every regional level because the specimens need to be sent to the lab in 24 hours. The indication for CD4 test should be set to control unnecessary investigation. More ELISA machines should be provided into provincial hospitals to be used as confirmation and screening test to reduce the cost. It can also apply to be used for antigen test for blood transfusion in the future.
- During the meeting among pediatric in June 2004, the national guideline for HIV/AIDS care for children including ART and OI treatment and prophylaxis was developed.
- PMTCT was developed later however the number of obstetricians who work in the provinces are small when compare to the pediatric that cover most of the provinces, the pediatric may have to act as core person for PMTCT.

- Voluntary counseling and testing (VCT) is on expansion in numbers in NCD and provinces, however it should be in collateral with expansion of caring system to avoid frustration among new positive result when they can not find the treatment.
 - With the increasing trend of VCT, HIV test and confirmatory test, the capacity of laboratory in the provinces should be increase particularly man power to support work load.
 - With the expansion of ART program, there should be the person to look after the information and procurement system.
4. Development of standards, guidelines and protocols for the country
- Case preparation: For HIV patients should be well prepared before given ART to achieve high adherence and avoid some unwanted complication. Consent form should be one of the components in the process of enrolment for a better understanding of the patients, i.e., what drug they will get, how long, the mechanism of the drug, the important of drug adherence etc. In some cases that develop drug reaction which is very common in ART, will don' t have problem come after. While the fertility rate in PNG is quite high, urine pregnancy test should always be tested among women in the reproductive age including family planning advice. (Appendix D)
 - Because CD4 test is still not available, the cases who falls in WHO stage III or IV, is the criteria used to enroll the cases. However opportunistic infection among these groups, is very common. To avoid reconstitution syndrome, carefully systematic physical examination should always be done to exclude hidden disease particularly pulmonary and extra-pulmonary tuberculosis. Chest X-Ray is recommended to be routinely investigated among symptomatic case because of the high prevalence of tuberculosis in PNG.
 - More than a hundred HIV infected children reported every year, shown that PMTCT is in urgently. The program for PMTCT should be started as soon as possible. Because of more podiatrist are available and distribute well in the country, they should be the key person for PMTCT instead of obstetritian that is not high in number and work only in some

provinces. However the hospital where PMTCT program start, should have the facility to take care HIV positive mother both with symptom or without symptomatic to avoid frustration.

- Optional feeding information should be given to HIV positive mother to reduce vertical transmission by breast feeding. Exclusive breast feeding with the shorrtten period of brease feeding will be the choice for whom can not afford formula feeding. However for those who can afford and have good sanitation practice, formula feeding will be the best choic.
- Wet nurse practice should be one of the alternative choice for those who can find HIV negative mother and willing to feed the children.
- As family approach, pediatric ART should be in parallel with adult ART program, to
- Based on international standards, guidelines and standard operating procedures should be developed for OI diagnosis, treatment and prophylaxis for adult, children and pregnant woman. Guidelines and standard data collection form should be used to assess ART management at nation level.
- Guidelines and protocols for post-exposure prophylaxis and PEP kits, should be distributed to all provincial hospitals. Injury surveillance should be set to monitor and evaluate PEP program.
- Surveillance system should be improved to get more data needed and can be used for monitoring and evaluation. (Appendix J)

5. Processes for scale up:

- Monthly report of the outcome of ART at Heduru clinic and provincial hospitals, should be made to evaluate the progress and constrain. (Appendix G)
- Every regional hospitals should start ART before the end of this year and will be the training centres for the provinces nearby next year.
- Every provincial hospital should have HIV clinic at least to provide OI treatment and prophylaxis including prepare and refer the case for ART.
- Scale up will require continued technical support and education.

- To monitor and evaluate ARV program when expand to enroll more cases from various hospital sites all over the country, the standard data collection form, both paper and computer, should be used in every work place. The reporting system should be set and have full time person who take care the information.
- More urban clinics and NGOs including private hospital should be expanded to be referral sites in NCD, for the cases who can not access to the previous referral sites.

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APPENDIX A

PAPUA NEW GUINEA

March 7 – April 10 , 2004

LIST OF PERSONS MET

WHO

Dr. Ives Reneault	WHO Representative
Dr. Andre Reiffer	Programme Management Officer
Mr. Anthony Gomes	Health laboratory specialist
Mr. Geoff Clarke	Consultant-Nursing
Dr. Bernard Fabre Teste	STI and HIV/AIDS Regional Advisor,

WHO/WPRO

Dr. Masumi Fujita	Medical officer, WHO/WPRO
Dr. Nguyen Thi Thanh Thuy	Scientist WPRO
Dr. Micheline Diepart	WHO Headquarters, Geneva
Dr. Angela Smith	Global Fund Portfolio Manager
Dr. Kenji Tamura	Medical Officer, Headquarters Geneva

ADB

Mr Van De Tak	ADB. Country Manager, PNG
Dr. Tanikuchi	ADB,

Ministry of Health

Dr. Nicholas Mann	Permanent secretary
Dr. Pekalia	
Dr. Paul Aia	Director Disease Control
Dr. Diro Babona	Director Public Health Laboratory DOH
Dr. James Wangi	Director Disease Control Branch

Dr. Daoni Esorom Technical Advisor STI/HIV/AIDS DOH

National AIDS Council

Dr.Ninkama Moiya Director, National AIDS Council Secretariat

Dr. John Milan Clinical Advisor STI/HIV/AIDS

Dr.Joachim Pantumari Senior Medical Advisor

Mrs.Agnes Gege Statistical Officer

Port Moresby General Hospital

Dr. Gao Tau Chief Physician, PNG

Dr.David Mokera Chief Pediatrician, PNG

Pr. John Vince Professor/Head of Child Health, University of
PNG

Dr. Lucy John Medical Registrar HIV/STI

Sr. Opina Ragagalo Chief Nursing Sister Heduru Clinic

Dr. Mabumo Kiromat Deputy Pediatric Chief Southern Region

Dr. Grace Kariwiga Specialist Medical Office of Obstretic and
Gynecology, PMGH

NCD, Provincial AIDS Committee

Mrs. Rachel Pokesy Nurse in charge of Day Care and Care Centres
NCD

Mrs. Nayereh Kavani FHI manager, PNG
UN

Dr.Nii-K Plange UNAIDS Country Coordinator

Dr.Arjan De Wagt UNICEF

Mr.Joe Anang Consultant for HIV/AIDS, UNICEF

Ms.Miia Hanninen Programme Officer for HIV/AIDS, UNICEF

AUSAID

Dr. Greg Law National HIV/AIDS support Project

Dr. Elizabeth Reid

Ms. Tracey Newbury First Secretary, Health and HIV/AIDS, AusAID

Maxine

Ms. Sharon Walker National HIV/AIDS Support Project

NGOs. NCD

Fr. Jude Ronayne-Forde OFM Simon of Cyrene, Hohola clinic

Mrs. Kay Nicol Consultant/counseling Advisor, Anglicare

Dr. Mauel Monongan Medical staff, St. Mary Medical Centre

MT. Hagen General Hospital

Dr. Jame Kintua Chief Medical Officer

Dr. Pek Bamne Director of Medical Service

Dr. Magdalynn Kaupa Pediatrician

Dr. Leslie K Kawa Registra, Internal Medicine

Dr. Alex Pewei Medical service, Registra

Mr. Seva Rupea Technical Laboratory

Angau Memorial General Hospital/PAC

Ms. Magareth Samei Chief Medical Officer

Dr. S Soctine Director of medical service

Dr. Paison Drakulala Physician, Angau Memorial Hospital

Dr. P. Chalau Chief Surgeon, PNG, Surgical Department

Dr. Jerry Tanumei Pediatric Medicine

Dr. R Moke Internal Medicine

Ms. Meredith Tutumang PAC, Secretary, Lae

Mr. Takeso Totaya PAC,

Pr. John Kaldor Director: NSW Center for HIV/AIDS Clinical and
Epidemiological Research, Australia

Appendix B

Summary of finding of filed visits

From Heduru clinic, PMGH

Port Moresby General Hospital (PMGH) was national level hospital with 600 beds available. Heduru clinic is the special clinic for HIV /AIDS cases and also provide services to STI cases. PMGH has been operating HIV (Heduru) clinic every Friday since the middle of July 2003. Currently the clinic expand two more days on Tuesday and Wednesday according to the increasing number of HIV cases, for providing treatment and educating patients who will be on ART.

1. HIV infected cases at Heduru clinic were from self refer, referred cases and in-patients who were recovered from treatment. Currently there are 272 HIV infected cases who come to get the service at Heduru clinic, 60 % of them are in WHO stage III and IV. 39 cases among them have been selected for ART since February 2004 by using clinical criteria.
2. At beginning of the program some cases did not fulfill with criteria and condition of some cases were not good enough to start ARV particularly anemic condition. While these cases were in WHO stage III and IV who were most likely to have opportunistic infection but there was no system to screen underlying disease particularly extra pulmonary tuberculosis. The total lymphocyte count often didn't come to the clinic at the time of starting treatment and was not used in making decision. The consent form was not in practice and no definite referral system to support the drug adherence.
3. These cases will start ART after two weeks of follow up and 1-2 training sessions in the afternoon. At the beginning the cases will be given ART for one month period and often do not come as appointed.
4. The data form to collect information from the patients and the result of the treatment was designed by the previous doctor who took care the clinic. The data form was in EPI INFO version 3.2.2. However the data form was not discussed and prepared to use

at national level for monitoring and evaluation and did not contain some important information. Lots of data were open question that was difficult to be analyzed. The doctors who care the cases wrote the history and physical examination by hand and very often didn't complete the information needed.

5. Most cases got the treatment by the regimen of AZT+3TC and NVP. Three tuberculosis cases after 2 months of tuberculosis treatment got AZT+3TC and EFV.
6. ORS that is very useful for dehydrate correction and easy to use for out-patient cases, is not in practice.
7. Basic symptomatic care and OI services is said to exist but very limited, Fluconzole is not in used because the price is quite expensive. The guidelines for OI management are in the process of developing.
8. However sometimes there was no doctor on clinic's day. In that event, the nurse and community health worker will take care the patients. There is no permanent doctor who take care the clinic, some registras were assigned to take care the clinic and changed according to the training program.
9. Instead of one person who take care of HIV/AIDS, the committee from various sectors in the hospital should be developed to set the clinical pathway and information transfer for a better planning and coordination between department. The CEO or DMS should be one of the members to support the caring system including monitoring and evaluation.
10. There was an increasing trend of HIV/AIDS cases registered at Heduru clinic, however the process to enroll the cases for ART was quite slow because there was no full time doctor to enroll the new cases.

From Antenatal Care Clinic and pediatic ward, PMGH

1. There are about 10,000 births delivered at PMGH, 40 % of them came to ANC at PMGH before delivery. The rest of them attended ANC at other places, i.e. Urban clinics, private hospitals and other health sectors near by. The pregnant women who attended ANC at PMGH will get group counseling

and ask for HIV testing. Nearly 100 % of them wanted to have HIV test, however only 95 % wanted to know the result. The result of the test will be put into ANC form and code was used to identify positive one, and will be kept by pregnant women who will bring it to the delivery room. The prevalence of HIV infection among these women was 1.3 %.

2. These HIV infected mothers will get the information about risk of HIV transmission through breast feeding, Optional feeding will be provided, exclusive breast feeding will be the first choice while exclusive formula feeding will be advised only among who can afford and have good sanitation practice. They will also get information to shorten the length of breast feeding to only 4 months to reduce the probability of disease transmission. Wet nurse practice that is common and cultural accept, is still not emphasized.

3. The guidelines for PMTCT in the country has been developed since September, 2004, 7 provinces got the training for PMTCT. However the problem of shortage of HIV test and drug, the inadequate number of obstetricians and counselors, PMTCT has a very slow progress in the provinces, Some HIV infected mothers who went to deliver at some faith base hospital got Nevirapine at birth. (12 cases all over country, till March 2004)

4. The information of HIV infected mother only available in number and age group, the detail information is not collected and analyzed. Rate of vertical transmission is unknown and the research on this issue is on the way.

5. The children born from HIV infected mothers will be given Cotrimoxazole for Pneumocystis carinii pneumonia primary prevention at one month age till one year. There is no data for ART given to the children in the country.

7. Pregnant women often arrive at PMGH for delivery while their antenatal charts remain at the urban clinic. Concern was raised that midwives are often unaware of the women' s HIV status.

8. There are very few obstetricians working at the provincial level, while there are pediatricians working **at most of the provinces.**

9. Most of HIV infected children were in the age group lower than 1 year that may need ARV syrup if ART program start in the children.

From Angau Memorial Hospital, Morobe province

From Mt Hagen general hospital

From Nonga hospital , Rabaul

Appendix C
Monthly ACTIVITIES
PAPUA NEW GUINEA
MAY 2, 2004 – February 2005

Period	Main activities
May 2004 2-4	Briefing in Manila and visa application Review HIV cases under ART Develop case recording form for both computer and paper Assist to develop guideline for PMTCT and infant feeding and also recording form for PMTCT program and sentinel surveillance among pregnant women who attend ANC
June 7-9 2-6	Assist to develop National ARV guideline for HIV infected children and data recording form for monitoring and evaluation pediatric cases Attend the meeting among pediatrician to develop national guidelines for ARV management among children Assist the STI/HIV from Manila to evaluate the progress of ARV program
July 5-7	The meeting among NGO in NCD to create the

7-16	referral system and identify places for referral site Attend World AIDS Forum in Bangkok
August 15-23 26	Attend the meeting in Fiji for South Pacific country program manager as temporary advisor Develop training course and preparation Start the training course for the nurses from the hospital and 6 referral sites Making a plan for ADB budget and Technical assistance for the year 2005 Helping in making a plan for Global fund budget in
September 13-17 9,15,23,30 16-22	Training course for the regional doctors who will take care HIV/AIDS at regional hospitals Continue training course for the nurses Regional Training Package Workshop, Manila
October	Setting surveillance system Meet with UNICEF advisor Develop PEP guideline and reporting system Develop procurement system Training for simon of cyrene Training for community leader (UNDP) CBOs Preparing for PMTCT evaluation and caring for children with unicef
November	Training course in Mt Hagen Consensus workshop Working at Angau Memorial General Hospital

	Attend meeting in Bangkok
December	3 X 5 Mission to Papua New Guinea Joint planning meeting for prevention to child transmission for 2005 Setting reporting system and training course at Angau Memorial Hospital, Morobe province
January	Training course in Rabaul Working at Mt Hagen Ser HIV clinic at Simon of cyrene Set reporting system at St. Mary Medical Cenrre

DATE	MORNING	AFTERNOON
May 2	Leaving Chiang Mai	Arrived in Manila
May 3-4	Briefing at WHO Manila and passport application	Continued briefing and discussion
May 5	Continued briefing	Leaving Manila
May 6	Arrived in Port Moresby Visited WHO office	Briefing with WR PNG and short briefing with Dr. Marie Dugue from ADB
May 7	Visited Heduru clinic to find the progress of ARV program in PMGH	Making a plan and discussing with technical advising STI, HIV PNG
May 8-9	Revise data recording form and develop new one	Continue
May 10	Meeting at Heduru clinic to discuss on data recording form and revision	Continue the meeting

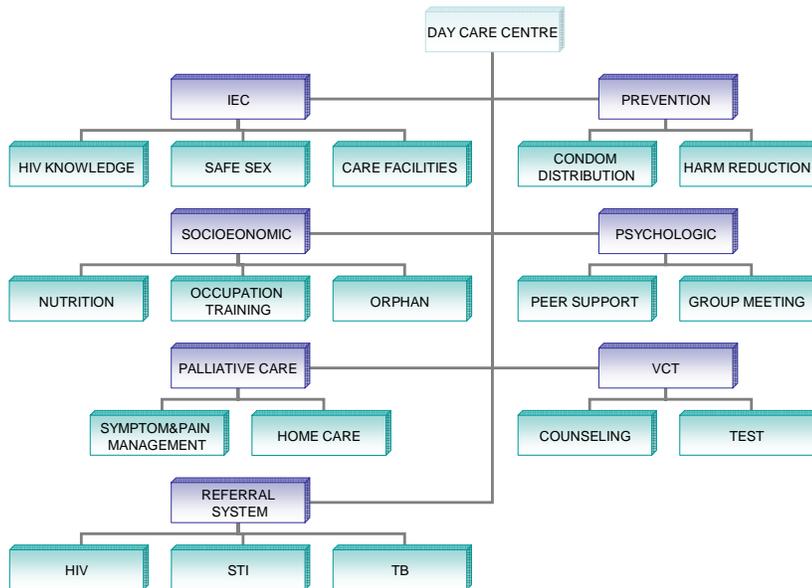
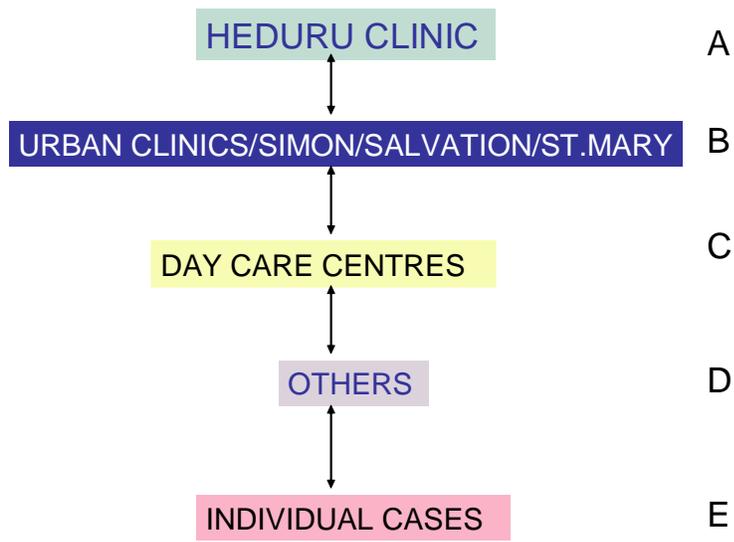
May 11	Contact with the company for drug procurement	Analyze data among HIV cases under ARV treatment at PMGH
May 12-14	Work at Heduru clinic to see patients	Continue analysis the data
May 15-16	Prepare protocol for PMTCT and comprehensive sentinel surveillance among pregnant women	Continue the job
May 17	Attend meeting to develop new data recording form and PMTCT protocol	Continue the meeting
May 18	Case review and develop PMTCT protocol	Same
May 19	Work at Heduru clinic to see patients	Continue
May 20	Attend meeting with World Vison (NGO who work with HIV/AIDS care)	Continue dev data recording form
May 21	Work at Heduru clinic to see patients and discuss with data recording form	Continue
May 22-23	Writing report and review literature and analyse data	Continue
DATE	MORNING	AFTERNOON
May 24	Ward round at Department of Medicine, PMGH	Meeting with specialist medical office, OB-GYN and Chief Pediatric Souther

		region
May 25	Prepare PMTCT protocol and pediatric recording form	with technical assistance met with NCD PACS
May 26	Work at Heduru clinic	Meeting with Coordinating PMTCT committees
May 27	Discuss with technical advisor for work plan and training course	Writing report
May 28	Meeting at WHO office with UNAIDS and UNICEF for HIV /AIDS care project	Prepare data recording form for pediatric cases
May 29-30	Writing mission report	Continue
May 31	Discuss with WR PNG	Writing mission report

Referral system

To increase drug adherence among HIV/AIDS cases who come to get ARV at PMGH, the referral system was revised and set. The referral system was started by discussion among representative from NGO groups, and then followed by workshop and training to identify activities and area coverage. The training course included ART in adults, children and PMTCT. From mapping and capacity information, 3 urban clinics (Gerehu, 6 Miles and 9 Miles), Simon of Cyrene, Salvation Army and St. Mary hospital, were selected to be referral sites. At least two nurses from each of these places and nurses from in-patient and out-patient departments (Medicine, Pediatric, OB-GYN, Surgery, ITU) of PMGH were selected to attend the continuous training course for implementing comprehensive HIV/AIDS care. The training was set as weekly schedule for 3 months period, to create personal relationship among them for better co-ordination and good referral system in the future, and not to burden with their normal activities in the work place. The information background of participants and personal information was collected and analysed. Pretest for each section of the training was performed as evaluation. The certification will be given after the training for participants who attend more than 90 % of the training course to increase the interest among participants and let these nurses to be the core health care team as trainer for trainer. After the training, these nurses visited Heduru clinic, pediatric and OB-GYN wards to learn about the real situation and practical point.

The activities of these places were revised and their capacities were enhance to take care HIV/AIDS cases more properly and be able to take care cases under ART in the future. The criteria to refer case to Heduru clinic and refer case back to referral sites was developed. According to the plan, these places will get the ARV, OI prophylaxis and treatment drug and these places will report cases under treatment.



Appendix D

Screening form for ARV treatment among HIV infected persons

Name.....Family Name.....

Age..... Sex.....

Address.....

History taking and physical examination for the patients for enrolment

1. To screen active disease

No Yes

1.1 Prolong cough more than 2 weeks

1.2 Prolong fever more than 2 weeks

1.3 Lymph node enlargement than 1.5 cm in diameter except at Inguinal area

1.4 On the first two months treatment for Tbc

2. To determine clinical status

2.1 Losing weight more than 10 % in 3 months period

2.2 Having chronic diarrhea during the past 3 months

2.3 Diagnosed as AIDS related disease

2.4 Others (please specify).....

3. To exclude person who have high risk for poor adherence and severe side effect

3.1 Age less than 15 years

3.2 Homeless person or no permanent resident

3.3 Drug addiction

3.4 Not allow to be follow up or don' t want to be visited

3.5 Pregnancy

3.6 Have a history to loss from previous Opportunistic treatment

3.7 Hemoglobin level less than 8.0 gm %

If no any answer as “ Yes” then send the patient to have CXR

Result of CXR Date.../.../... Result Normal

Abnormal

For female Pre pregnancy test Pregnant

Not

Conclusion of the physician Pass the screening and appropriate for ARV treatment

Not pass

Name of physician

Signature.....

Some special exam by Ophthalmologist if available to rule out Cytomegalo virus retinitis

Eye ground suggestive

Negative

Appendix E

Prevention of Mother to Child Transmission (PMTCT)

The information related with PMTCT in PNG is still unknown, i.e. , rate of vertical transmission, percentage of women who attend ANC, the gestational age at first ANC, the risk factors among HIV positive mother etc. For better understanding of PMTCT situation in PNG and to have base line data for planning and evaluation, the research for PMTCT program should be set.

These are some important information needed for PMTCT program in PNG

1. The demographic information of pregnant women both infected and uninfected, i.e., age, parity, gestational age at first ANC, how many ANC

before delivery, what kind of feeding, how long for breast feeding ,family planning, etc..

2. The information about vertical transmission, how high the rate is, the factors relate to the infection.

3. The information about the children born from HIV infected mothers , infant mortality rate, age of developing symptom, immunization, PCP prophylaxis practice.

4. Other important information: Traditional Birth attendants back ground, practice of child rearing, immunization.

To answer these question, descriptive study (case review), retrospective study (analytic study) and prospective study should be set. To shorten the time , the number of control (HIV negative pregnant women) may be higher or can use multi-center data collection. And in the future when ART is available, how high the rate of vertical transmission from each strategy (AZT at 28 week of gestational age plus Nevirapine at birth, with or without breast feeding, only Nevirapine at birth with of without breast feeding etc.). And some research question such as wet nurse practice, how about wet nurse practice in PNG, to bring the person to be wet nurse, how long breast feeding should be.

Prevention Mother to Child Transmission Recording Form

Date...../...../.....

Hospital Identification No..... Hospital
No.....

Personal data

First name..... Last
name.....Age..... Year

Education None Primary school
Secondary school
 Vocation school College
University

Occupation None House wife
Agriculture
 Un-skill Skill

Professional
 Other specify.....

Address

Province of origin.....

Residence.....

Commercial sex worker

involvement

Others (specify)

Where did you performed the test.....When
(year).....

Partner status (All partners)

Negative

Positive

HIV Test at Present

Get counseling

Yes

No

Decision

Don' t want to have test

Want to have test

If don' t want, reason

Don' t want to know

Negative for last test

Family support

Community support

Afraid

If want to have test, reason

For PMTCT

Positive partner

Get sick

ARV Desire and Practice

If the test become positive, do you want to participate in PMTCT

Yes

No

If no, reason why
effect

Stigma

Worry of side

know

Don' t want the husband/family to

Don' t want the community to know

Can you afford formula feeding Can Can not

If you can' t afford, can you find another person to give breast
feeding for your child

Can Can not

If your relative want you to give breast feeding to her child, do you
willing to give

Willing Not willing

Risk factors

Have you ever been involve with commercial sex worker practice

No

Yes Often

Sometime

Appendix F
Surveillance system

For a better understanding of HIV situation in PNG, some groups of the people who are in high risk of getting HIV infection should be tested. Sentinel surveillance that has been already existed in PNG should be revised to make it more reliable with some statistical method. The sample size and sampling method should be enough and can be the representative of the situation in the

country. However it should be comprehensive sentinel surveillance instead of sero-prevalence alone, some questionnaire should be added to get more information about the positive and negative test result. The method to get the specimens and information should be based on the existed facilities, not to burden the work load or cost of the system. The people who will use the data should know how to interpret the result properly, how high the confidential level will be and the most important point is that the data got from surveillance is prevalence not incidence.

The sentinel surveillance can be performed in the following groups

1, Pregnancy group. The HIV prevalence rate among pregnant women can be a very good representative of women among 15-44 year age group. With the existing HIV screening at ANC and well plan, these data can bring to be used for surveillance. These data from all over the country if selected proportional to size can be a representative rate of the country. However some data should be added, to evaluate not only the rate of infection but also the services providing and risk factors among HIV positive ones. Depend on the prevalence rate among pregnant women who attend ANC at PMGH that is 1.5 % , the sample size required for each confidence interval level will be as followings:

Percentage of difference from the prevalence	95 %Confidence interval	Sample size required
10	0.0135-0.0165	25,227
20	0.012-0.018	6,307
30	0.0105-0.0195	2,803
40	0.009-0.021	1,578
50	0.0075-0.0225	1,009

If cases are selected from the women who were married less than one year the data can be used as incidence rate.

2. Military group. The HIV prevalence among military group particularly new recruit can be a good representative of men at 20-25 year age group. Depend on the prevalence among this group last year 4.0 % , the sample size required for each confidence interval will be as followings:

Percentage of difference from the prevalence	95 %Confidence interval	Sample size required
10	0.036-0.044	9,120
20	0.032-0.048	2,305
25	0.03-0.05	1,475
40	0.024-0.056	576
50	0.02-0.06	369

3. Sexual Transmitted Infection (STI) group. The HIV prevalence among STI group can be a good representative of men and women who are at very high risk of getting HIV infection. Depend on the prevalence among this group last year 19.0 % , the sample size required for each confidence interval will be as followings:

Percentage of difference from the prevalence	95 %Confidence interval	Sample size required
10	0.171-0.209	1,638
15	0.16-0.22	657
20	0.152-0.228	409

4. Commercial sex worker (CSW) group. The HIV prevalence among CSW group can be a good representative of women who are at very high risk of getting HIV infection. Depend on the prevalence among this group last year 17.0 % , the sample size required for each confidence interval will be as followings:

Percentage of difference from the prevalence	95 %Confidence interval	Sample size required
--	-------------------------	----------------------

10	0.0153-0.187	1.876
15	0.1445-0.1955	834
20	0.136-0.204	469

5. Tuberculosis case. The HIV prevalence among tuberculosis patients can be reflected how high the tuberculosis patient will have co-infection with HIV. Depend on the prevalence among this group last year 20.0 % , the sample size required for each confidence interval will be as followings:

Percentage of difference from the prevalence	95 %Confidence interval	Sample size required
10	0,18-0.22	1,537
15	0.17-0.23	683
20	0.16-0.24	304

Workshop for NGO Coordination and referral system setting

One of the most important components in HIV/AIDS care, is the role of NGO. In PNG, there are many NGOs who are working in the area of HIV/AIDS care, however there is very little information about what these NGOs are working and the collaboration among them is still weak. ART have been started at PMGH since February 2004, currently there were 44 cases under the treatment. From these cases, some of them didn't come to get the treatment as appointed because there was no supporting system to bring

them in. Some of them had problem with living condition and could not find food and came after with treatment failure. To strengthen the role of NGOs to solve these problems, the meeting among NGOs was set at NCD PAC on June 5th, 2004 and made some conclusion about the experience in the past.

Problems from the past

1. Weak coordination between NGOs and NGOs, and NGOs with hospitals
2. There is limited information about activities among NGOs and the area they take responsibility
3. Weak referral system to support HIV/AIDS care
4. PWHA role is not so strong when compare to the other sectors

To alleviate these problem and strengthen the role of NGOs in HIV/AIDS care, the plan was set as followings,

1. Set the schedule for monthly meeting among NGO to create more coordination system, the place of meeting will rotate from place to place to let them know each other (The next meeting will be at Syrine clinic) the time will be set at the training next month.
2. On July 5-7, there will be a training course for NGOs staffs about HIV/AIDS care, the role of NGOs and referral system.
3. There will be a system to report from NGOs to hospital and vice versa about cases that will be referred to and back, particularly the ones who need support
4. There will be a training course during June-August for medical staffs from many sectors, to increase their capacity for caring the patients and how to work with the referral system. June-August.
5. The system in Heduru clinic should be revised to work closely with NGO and patients.
6. There will be PWHA meeting monthly at Heduru clinic and outside (NGO)

For the training course for NGOs, the objectives was set as followings

1. To set the referral system to support the HIV/AIDS care, particularly ART program at PMGH.
2. To map the area of working and set the collaboration system among NGOs to strengthen their role in HIV/AIDS care.
3. To increase the capacity of NGOs in HIV/AIDS care

Methodology

1. Set the workshop for NGOs who work in NCD for discussion and setting the collaboration among them.
2. Collecting the information from these NGOs activities and mapping the area of work and the area of coverage
3. Sharing information about community setting and need for making collaboration
4. Provide information about HIV/AIDS care in a different level to let them know at which level they want to work with

Participants 40 participants from NGOs and public sectors who work in HIV/AIDS care in NCD.

Time 5-7 July, 2004

Place Grandville

Schedule for the training for comprehensive care for HIV/AIDS care

Date	Topics	Speakers
July 5 th		
9.00-9.30	Registration and introduction	Dr.Daoni
9.300-10.30	Comprehensive HIV/AIDS care	Dr.Nopporn
10.45-12.00	Anti-retro viral therapy and PNG	Dr.Tau
13.00-14.15	experience	Dr.Grace
14.30-15.45	Mother to child transmission	Dr.Kiromat
15.45-16.00	HIV/AIDS care in the children	

	Question of the day	
July 6 th 9.30-12.00 13.00-14.15 14.30-15.45	Role of NGO/Coordination Referral system Question and conclusion	Dr.Nopporn Ms.Miia Haninen (UNICEF) Dr.Nopporn/Dr.Daoni Dr.Tau
July 7 th 9.30-10.30 10.45-12.00 13.00-14.15 14.30-15.45 15.45-16.00	Drug adherence Counseling Opportunistic infection Rx/Prophylaxis Post exposure prophylaxis Question and closing ceremony	Dr.Nopporn Betsy Dr.Lucy John Dr.Nopporn

Result

1. There were 40 participants from 17 NGOs involved in the workshop during 5-7 July, 2004 not including 3 participants from PMGH.
2. All the working activities among 17 NGOs were listed according to their geographical area of working and their target groups, including their staffs. These information will be analyzed and will help in making plan to cover all the area needed to be solved.
3. There was a discussion among NGOs and set the schedule for making the collaboration among themselves at PMGH on July 29th, 2004.
4. The form that will be used to strengthen the referral system was developed.
5. The mechanism for referring the cases from communities to Heduru clinic was discussed and set. The referral form and all indication to be used in the mechanism will be developed.

Conclusion and recommendation

1. The level of knowledge and understanding of HIV/AIDS care among NGOs are varied from knowing very little to some extension. It will be good to have the centre for giving information about HIV/AIDS care to

these NGOs and also the general population who want to get any information. National AIDS Council may take responsibility of that. At the provincial level Provincial AIDS council may take that action or in case they don't have enough potential then the provincial hospital may take that job.

2. Some of NGOs got so many training at the same topics. To avoid the duplication, NAC or PAC should collect all the information about the training in the area and setting some of these
 - 2.1 Setting the training program from various aspects for the whole year and let NGOs or any organization who interest in any fields, voluntary to select the topic they want to know.
 - 2.2 Classified NGOs to various levels of HIV/AIDS care and set the training according to their activities.
 - 2.3 Let the fund donors to get the information about the training to verify the needs of each organization.
3. For a better coordination and not to duplicate or lose any area or fields, NAC or PAC should collect all the information about NGOs activities. After analysis, then give the information to these organizations and fund donors to know which area are still lack of or which area already have any organizations work in.
4. Except for ART, the local people have enough potential to train the others, for sustainable they should pay more role in the training program.
5. While there are lots of NGOs involved with VCT, the monitoring to standardize the quality of counseling and HIV test should be performed to avoid un-wanted effect.
6. According to the information, 3 urban clinics (6 miles, 9 miles and Gerehu), Simon of Cyrene (Hohola clinic), Salvation Army and St. Mary Medical Centre were identified as the care centres. These places had the capacity enough to be the referral sites for ART program. However they need to get systematic training for comprehensive HIV/AIDS care, both in theoretical and practical point.

7. In the future, these places will be the main clinics for initial HIV/AIDS care from the area nearby their places and prepared these cases to be ready for ART. They will also be the place to follow-up HIV/AIDS cases after they got ART from Heduru clinic, and recover from the disease.

Summary of NGOs Activities

	Organization	Organization	Organization	Organization
	Hope world wide (PNG)	Correction services Prison department	Save the children Poro Sapot project	NYWCA of PNG
No. of staffs	46	60	17	20
Target groups	School youth General public in common unity & settlement	Staffs Dependents Prisoners, Youth Surrounding communities	Female sex worker MSM, Male clients Gate keeper Policemen and women	Sex workers in NCD Women in rural area of PNG
Area of responsibility	45 schools 100 settlements & communities 9 miles clinic		NCD	

No of people under program	> 500 children/school >100/settlement >300/day at clinic	1000		1500
Source of budget		No		World vision(UNFPA)
Information	Yes	Yes /Drugs	Yes	Yes
Education	Yes	Yes	Yes	Yes
Counseling	Yes	No	Yes	No
VCT	Yes for pregnant women, sex workers and individuals	No	Yes	No
Support of :Socioeconomic :Transportation :Orphan	Yes Yes	No	Yes	
Home visit	Yes	No	No	No
Home Care	No	No	No	No
Common disease care	Yes	HIV/AIDS/TB	No	No
OI treatment	Yes	No	Yes	No
OI prophylaxis	Yes	No	No	No
ARV	Can do if trained	No	No	No
Future plan	Extend to community & school nearbyNCD	Training TOT awareness workshop		Include counseling
Training needed	TOT of HIV /AIDS educators,counseling Care of PLWHA	General stationeries	Skill building	Counseling and health care for PLWHA

Summary of NGOs Activities (Continued)

	Organization	Organization	Organization	Organization
	Motukaoita HIV/AIDS Found	PNG AIDS Federation	Salvation Army ELA beach	NDC welfare
No. of staffs	12	8	3	4
Target groups	CSW & clients	HIV/AIDS infected persons	HIV/AIDS positive clients with orphans	Families including children
Area of responsibility	NCD central	9 mile, Gerehu, Erima, 8 mile	All NCD area	All NCD area
No of people under program	7 villages 3 companies	22	12	We do referral
Source of budget	NCD PAC or NHASP	Nil	Nil	Nil
Information	No	Yes	Yes	Yes
Education	No	Yes	Yes	Yes
Counseling	Yes	Yes	Yes	Yes
VCT	No	No	No	No
Support of :Socioeconomic :Food :Transportation :Orphan :other specify	In the planning		Yes Yes yes	Yes
Home visit	Yes	Yes	No	Yes
Home Care	Yes	Yes	No	No
Common disease care	Yes	Yes	Yes	No
OI treatment	No	Yes	Yes	No
OI prophylaxis	No	No	No	N0

ARV	No	No	No	No
Future plan	HIV/AIDS awareness workshop	To extend further	Look at the orphans	Work with other organization
Training needed	Yes	Skill on ARV therapy		Skills of care and counseling
Other comment	Funding	Need support for funds		Need funds and logistic support

Summary of NGOs Activities (Continued)

	Organization	Organization	Organization	Organization
	United church	Settlement mothers	Youth group	Friends Foundation Inc
No. of staffs	2	1	1	3
Target groups	Young men and women	Educate mothers in awareness and provision caring	Children, youth , adolescence mothers	PLWHA Youth Women
Area of responsibility	School Village Market and town	Settlements	Hiri-west district villages school	Home care Counseling Peer education
No of people under program				35

Source of budget			Nil	Own funding, Sale of ribbons
Information	Yes	Yes	Yes	Yes
Education	Yes	Yes	Yes	Yes
Counseling	Yes	Yes	Yes	Yes
VCT	Yes	Yes	Yes	Yes
Support of :Socioeconomic :Food :Transportation :Orphan :other specify	If we have these things	In the plan	planning	Yes Yes Yes Yes Office space
Home visit	Yes	Same	Yes	Yes
Home Care	Yes	Same	Yes	Yes
Common disease care	Yes	Same	Yes	Third, fourth stage
OI treatment	Yes	Same	No	Refer to Heduru
OI prophylaxis	Yes	Same	No	Refer to Heduru
ARV	Yes	Same	No	Refer to Heduru
Future plan	To extend	Want to work along AIDS council	HIV/AIDS awareness workshop	Build PWHLA capacity
Training needed	If possible	Yes	Yes	Peer education Home care Counseling PLWHA
Other comment	Helping hands	Want new mothers to	funding	Ph 6845022

		attend workshop		
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Summary of NGOs and GOs Activities (Continued)

	Organization	Organization	Organization	Organization
	South Fly W/O Evegima	NCD PAC	STI- HIV/AIDS PMGH	PMGH dietician
No. of staffs		5	8	1
Target groups	PLWHA Children Widows women Youths	Multisectorial 40 stakeholders 60 NGOs, 200 FBO, CBO in NCD	STI- HIV/AIDS related	In-patients and a wandful from out side
Area of responsibility	Peer counseling	Conducting and meeting	NCD The central province	Diet consumption for in- patients
No of people under program	31		Upon referral cases	8
Source of budget	Own fund	AusAID NCDC	Public sector	Main kitchen, food support for PWA
Information	Yes	Yes	Yes	Yes
Education	Yes	Yes	Yes	Yes
Counseling	Yes	Yes	Yes	No
VCT	Yes	Yes	Yes	Yes
Support of :Socioeconomic :Food	Yes Yes	Yes Yes	Refer the case to	No Yes

:Transportation :Orphan :other specify	Yes Yes	Yes Yes	social workers	
Home visit	Yes	Yes	No	Yes
Home Care	Yes	Yes	No	Yes
Common disease care	12 stragic	Refer	Yes	Yes
OI treatment	Heduru	Refer	Yes	Yes
OI prophylaxis	Yes	Refer	Yes	No
ARV	No	Refer	Yes	No
Future plan	To hall a central for PLWHA	NGO association For better NGO capacity building	To extend the pilot project to become clinical excellence	To have fund for better meals to keep their immunity
Training needed	Peer education, Home care Counseling skill	Leadership development program		How the patients take care their diet
Other comment	Need to improve the community		More in house train workshop like the present workshop	Need support for a varieties diet. Need funds.

Referral form

From.....

No.....

To.....

Date...../...../.....

(date/...../.....)

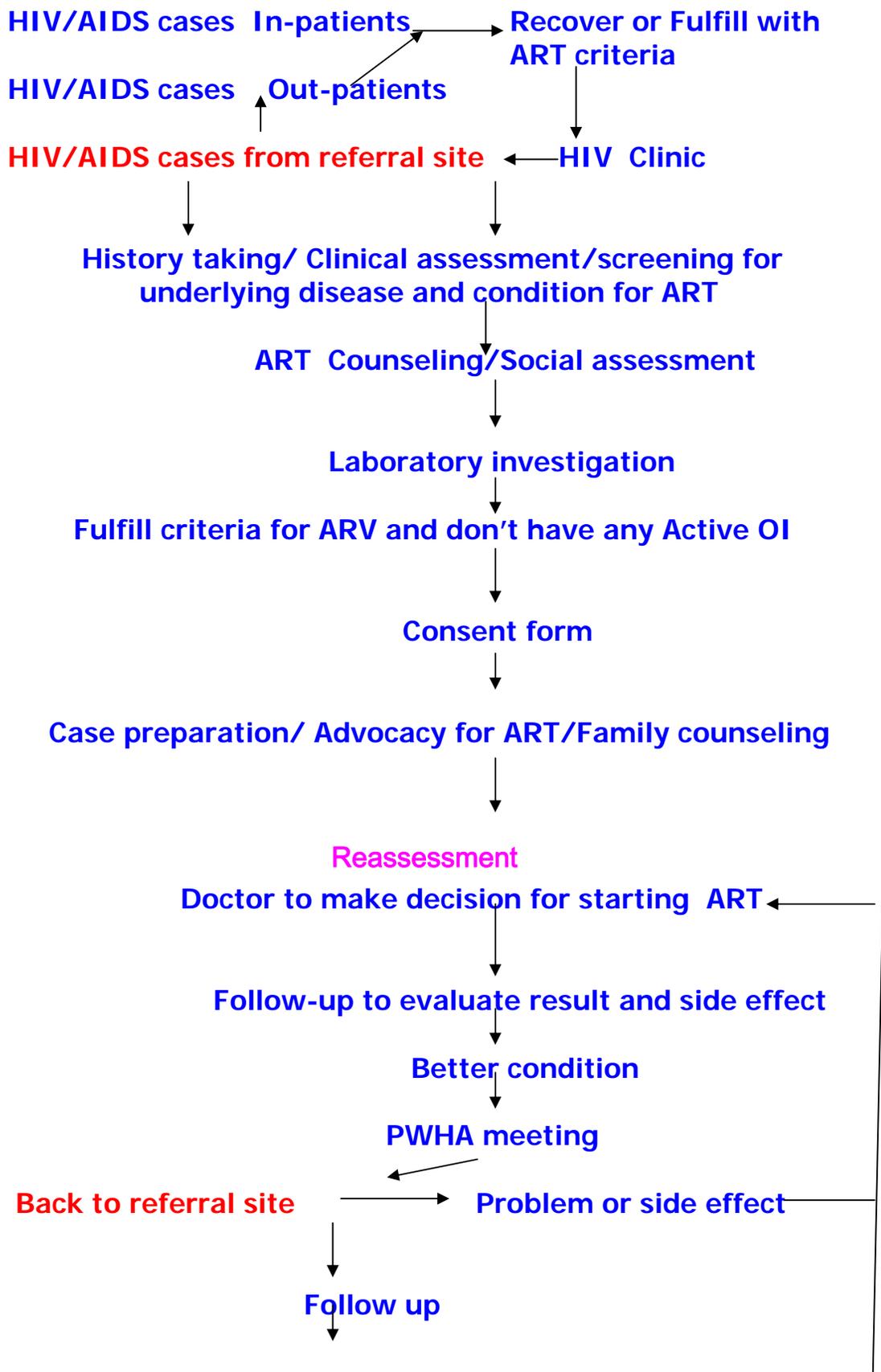
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(Signature).

Date...../...../.....

Flow chart of HIV/AIDS cases at HIV clinic



6 months check u

Indicator for referring the cases to heduru clinic

New case : All new HIV infected cases should come to Heduru clinic for registration and assessment at the first stage. (After day care centres are already prepared, these centres will be the place for registration and assessment)

For new cases who fall in WHO stage III or IV should be referred to Heduru clinic to reassess and start ART.

After 3-4 months or until the clinical of the patients are stable and good enough, these cases will be referred back to care centres.

At least once (twice) a year, the cases should come back to Heduru clinic for re-evaluation.

Old cases who have any problems (recurrent Opportunistic infection, severe side effect from ARV, weight loss or showing any clinical failure) should be referred back to Heduru clinic for re-assessment or further investigation.

In the future when day care centres can manage the patients better, then the registration and clinical assessment can be performed at day care centres and the cases will be referred to Heduru clinic only for first ARV or when the patients had problems and day care centres can not manage the cases or to refer the cases for CD4 test or evaluate.

Appendix G

Comprehensive HIV/AIDS Care including ART Training course for Nurses of PMGH and Care Centres

To increase the capacity of some urban clinics and care centres, to be the places for initial and referral sites for HIV/AIDS care, the training course for comprehensive care was set. To avoid burden to the work load and to create the relationship between these places and the nurses at PMGH, the training was set at weekly schedule.

Objectives

1. To increase the capacity of 3 urban clinics, Simon of Cyrene, Salvation Army and St.Mary medical centre for HIV/AIDS care.
2. To increase the quality for HIV/AIDS care in various departments of PMGH.
3. To set the referral system and create relationship between the referral sites and PMGH.

Training Lecture, discussion, pre or post test, information exchange

Participants Nurses from Heduru clinic, department of Medicine, Pediatric and OB-GYN, ITU, Surgery,
 3 urban Clinics, Simon of Cyrene, Salvation Army and St.Mary Medical Centre
 Time 3 Hours/week (13.00-16.00) during August-NOvember
 Place Port Moresby General Hospital

Date	Topics	Lectures
26 August	Registration and introduction Basic HIV/AIDS care	Dr.Daoni Dr.Nopporn Dr.Goa Tau
1 September	Antiretro Viral Therapy in adult Antiretro Viral Therapy in children	Dr.Nopporn
8 September	Prevention transmission from mother to child	Dr. Grace
15 September	Opportunistic infection treatment and prophylaxis	Dr. Goa Tau
22 September	VCT, Laboratory and HIV diagnosis	Dr. Nopporn
29 September	Promoting PHA motivation and commitment PHA Involvement and referral system	Dr.Nopporn
6 Oct	Adherence and side effect	Dr.Nopporn
13 Oct	Case enrollment Infant feeding	Dr.Nopporn Dr.Kiromat
20 Oct	Universal precaution Post Exposure Prophylaxis	Geoff Clark Dr.Nopporn
27 Oct	Counseling	David Passirem
3 Nov	Prevention and surveillance	Dr.Nopporn
11 Nov	Counseling	Sharon and Bessie
18 Nov	Conclusion and closing ceremony	Dr.Nopporn Dr Daoni

Result

1. There were 35 nurses from various sectors participate in the training.
2. 10 % of the participants got training for HIV/AIDS care more than 10 hours before, while most participants had been trained for less than 5 hours. However all participant had never been trained systematically and cover all of the aspect of HIV/AIDS care. The knowledge of HIV/AIDS care among participants was low.
3. The referral system was weak and no definite form to refer in and refer back.

Appendix H

Training Schedule for Doctors Who Take Care HIV/AIDS at Regional Hospitals

Currently HIV spread to all over PNG, in some provinces HIV prevalence among pregnant women was as high as 2.6 % that was double of the prevalence in Port Moresby. More often of HIV/AIDS cases were seen in regional and provincial hospitals. There were some doctors who participated in prescriber course at Madang in February, however these doctors seemed not to have the experience in setting HIV clinic and didn't know how to collect data and monitor and evaluation of the program. To expand ART program in the regional hospitals to cover with the increasing trend of HIV/AIDS epidemic in PNG and let the cases out of Port Moresby get the opportunity to access to ART. The training course for the doctors who care the patients at regional hospitals was set

Objectives

1. To create core health care team in 3 regional hospitals
2. To set comprehensive HIV/AIDS clinic in 3 regional hospitals to expand the services for HIV/AIDS cases, to access to the care at provincial level
3. To set the system for data collection that will be used for monitoring and evaluation

Participants 8 Doctors from department of medicine, pediatric and OB-GYN from Port Moresby, Morobe, Mount Hagen and Rabaul provinces

Time 16-22 September , 2004

Place Port Moresby General Hospital

Day	Morning	Afternoon
1	Introduction Experience of HIV/AIDS care in PMGH	Case preparation and enrollment Data recording form (Paper and computer form)
2	Drug adherence and referral system Comprehensive HIV/AIDS care	Monitoring and evaluation
3	Prevention and surveillance	Opportunistic infection treatment and prophylaxis
4	Prevent mother to child transmission	Global fund and implementation
5	Pediatric HIV/AIDS care and ARV Infant feeding	Conclusion and discussion

Finding

1. There was only HIV clinic in Morobe while the 2 regional hospitals still didn't have.
2. Although some doctors participated in prescriber course in Madang, they still lack the knowledge in practical point particularly how to start ART program in the hospital.

3. More often of HIV/AIDS cases were observed in all regional hospitals and most of the cases died in 1-2 weeks of treatment. Opportunistic infection treatment was available in 3 regional hospitals; however there were some limitations for drug supply, particularly fluconazole to be used in Cryptococcal meningitis cases.
4. The data recording and collection was still weak, mostly depend on hand writing of doctors who take care the cases, no systematic collection existed.

Conclusion and recommendation

1. HIV clinic should be set in 3 regional hospitals to provide services for HIV/AIDS cases, ART should be started before the end of the year 2004.
2. The data recording form used at Heduru clinic, should be used at 3 regional hospitals to be one monitoring and evaluation in the country.
3. The training course for the doctors and the nurses at regional hospitals should be set to strengthen the capacity for comprehensive HIV/AIDS care and increase drug adherence.
4. Oral and esophageal candidiasis was quite common in HIV/AIDS cases, while the patients didn't respond to nystatin or ketonazole. Fluconazole should be included and supplied for these cases.

Work shop in Western Highland Province

10-13 November 2004

Finding

The total populations in Western Highland province are about 440,000. Mount Hagen General Hospital is regional hospital in Western Highland Province with 309 beds available. There are 12 doctors, 18 technical staff and 92 support staff. There were 154,885 out-patients and 11,572 in-patients last

year. The hospital also take care the patients from the province nearby, Enga, Chimbu and Southern Highland. There are 2 more district hospitals in the province, Kudjip Nazaren district hospital and Tinsley hospital. The medical unit has about 50 beds for general cases, Tuberculosis and HIV cases. The admission rate is 6-7 new cases a day and among these cases are 3-5 of HIV infected cases every weak. There has been the increasing trend of HIV cases in medical admission. Chronic diarrhea, respiratory infection and skin infection are the most common cause of HIV admission. Routine HIV test are performed on patients with high index of clinical suspicion. The positive HIV test increase from 22 cases in the year 2000 to be 53 cases and 107 cases in the year 2003 and 2004, respectively. The rate of HIV positive is about 40-50 % of the total patients screened. The ratio of male to female is 2:3. The highest is in 30-34 year age group among female cases and 35-39 year age group among male cases. 65 % and 18% came from Western Highland and Southern highland, respectively.

The hospital used serodia as screening test and has been started confirmatory test (Determine and Capilus) since September, 2004. The test will be performed among clinical cases, blood donors, STI cases but still not for all pregnant women. The test was also performed at Kudjip and Tinsley hospitals; however there was no system to collect all the data together. The number of HIV positive was highest among STI and clinical cases. There were 21-43 positive cases reported every month last year. The number of positive HIV test increased from 402 in the year 2002 to be 562 in the year 2003. Currently, there were 495 positive cases in the year 2004. The rate of HIV positive test was 25.1 % (305/1213), 7.7 % (178/2309) and 1.04 % (12/1156) among clinical, STI and blood donor cases, respectively. About 75-90 % of positive test result, came to be positive with confirmatory test. There was no centralized record and statistic and no proper control and monitoring of the notification forms for confirmed HIV cases.

The HIV prevalence among pregnant women at Mt. Hagen hospital was 0.6 % and 0.3 % at Kudjip hospital, respectively.

Kudjip Nazaren District hospital

This hospital is church base private hospital. There are 100 beds available with 3 doctors that cover area of medicine, surgery, obstetric-gynecology and pediatric. There were about 3-5 HIV/AIDS cases admitted each week. Up from the beginning of this year, there were about 3,500 HIV test performed. Among 990 blood donors, no case was positive.

There were 2 HIV positive cases among 625 pregnant women who attend antenatal clinic. There were 147 positive cases and sent for confirmation at CPHL and Mount Hagen Hospital.

Shalom Care clinic

This clinic has been started HIV/AIDS care since 1995, by the supportive from church base organization. There are 2 bedrooms and can expand to give care to the patients up to 6 people. The activities include HIV advocacy, clinical care, home visit, voluntary counseling testing, psycho-social and nutritional support. From the beginning of this year, there were 186 persons came for the test and 22 cases came to be positive. There was some successful in behavioral change among these cases. Sometime there was a meeting among PWHLA to have the activities together to cope with fear and brought the patients back to normal activities and life. There was some people from the communities nearby came to work as volunteer in caring HIV/AIDS cases. There was no case get ART, however the clinic is willing to participate in ART program.

Conclusion

1. There are lot of NGO work strongly to support HIV/AIDS care in Western Highland, however there is little cooperation between themselves and with Government sectors.
2. The role of Provincial AIDS Committee in the province is quite good in supporting all the program, about 100 counselors has been trained already. However most of them can work with some limitation on pre and post test counseling, but don't have enough knowledge for chronic caring for HIV/AIDS cases.

3. There is the increasing trend of HIV/AIDS case at all hospitals in the province. ART is in a rapid progress for starting with the good support from Director of Medical Service (DMS).
4. Prevent Mother to Child Transmission (PMTCT) training was finished in October 2004; however the program is still in the process of preparation.
5. The supply of drug and laboratory often don't come on time.

Recommendation

1. There should be the meeting among stake holders in HIV/AIDS care to set the network and good collaboration to strengthen the referral system and increase drug adherence among HIV/AIDS cases.
2. These NGOs should be classified according to their roles and capacities and follow by training according to their needs.
3. The counselors should get some more training about Chronic HIV/AIDS care to strengthen the adherence among patients, some nurses in the hospital should be also included.
4. When HIV test expand to pregnant women for prevent mother to child transmission (PMTCT), a lot of reagent should be supplied to make the sustainability of the laboratory system.
5. Man power, lab technician and counselors, should be included in the plan for much more work of HIV test in the near future in all hospitals.
6. There should be system to collect the information from laboratories and medical services from 3 hospitals for a better understanding, planning, monitoring and evaluation at provincial level.
7. There should be the standard form for monitoring and evaluation for laboratories at national level.
8. The procurement system should be set to support ART, drug used for OI treatment and prophylaxis should be included in the ART program.

Objectives

Participants

30 participants, doctors and nurses from various departments including participants from blood bank, laboratory, urban clinic, PLWHA and Provincial AIDS Council (PAC)

Date	Time	Topic	Lecturer
10 November	8.00-	Introduction	Dr.Kaupa,
	8.30	Welcome speech	Dr.Daoni
	8.30-	Mount Hagen General Hospital	Dr.
	9.00	HIV status in Western Highlands	Dr. Alex Peawi
	9.00-	Province	Mr.Seva Rupae
	10.30	Local statistic	Group
		Experience form PLWHA	presentation
		Introduction to HIV	Mr.Thomas
		Antiretro viral therapy	
	10.45-	Opportunistic infection	Dr.Nopporn
	12.00		Dr.Nopporn
13.00-		Dr.Leslie	
14.30			
14.30-			
16.00			
11 November	8.00-	National guideline for ART	Dr.Nopporn
	10.15	Drug adherence	DR.Nopporn
	10.30-	Field visit to Shalom Care Clinic	Sister Rose
	12.00	Kudjip Hospital	Bernard
	12.30-		
16.30			
12 November	8.00-	Prevent Mother to Child	Dr.Nopporn
	10.15	Transmission	Dr.Nopporn
	10.30-	Role of Community and NGOs	Dr.Nopporn
	12.00	Prevention	
	13.00-	Universal precaution and post	Sewa

	14.15 14.30- 15.30 15.30- 16.00	exposure prophylaxis Laboratory diagnosis	
13 November	8.00- 10.00 10.00- 11.30 11.30- 12.30 13.30- 15.00	Opportunistic infection treatment and prophylaxis Antiretroviral therapy in children Global fund Side effect and complication Role of PLWHA Discussion for Monitoring and Evaluation	Dr.Nopporn Dr.Daoni Dr.Nopporn Small group discusstion

**HIV/AIDS CLINICAL MANAGEMENT WORKSHOP at ANGAU MEMORIAL
GENERAL HOSPITAL**

VISION

The vision for the people living in Morobe to be healthy individuals free from HIV/AIDS through education, self-respect and care for others

MISSION STATEMENT

Through the development of partnerships and community participation improve health and living standards

and access to sustainable and efficient HIV/AIDS treatment by providing health information and coordinated service delivery

AIM:

To promote and advocate and enable ANGAU Memorial Hospital become the Regional Center of Excellence in HIV/AIDS Care and Management and build its capacity and role in the MHAMI(Morobe HIV/AIDS Management Institute) for Training ,Research, Treatment and DATA Management

OBJECTIVES:

- 1) Train the senior Executives and Clinicians of ANGAU Memorial Hospital on HIV/AIDS Clinical Management
- 2) To decensitize the HIV/AIDS issue within the Hospital and enable access and a more user-friendly service to PLWHA
- 3) To Train the workforce in HIV/AIDS so that they in turn become Trainers and advocates in and outside the Hospital
- 4) To give participants information and knowledge on holistic, continuum of care through networking and partnerships with various sectors and stakeholders in Care.
- 5) To empower the participants to stretch their creative capabilities beyond their own limitations for innovativeness and best practice.
- 6) Enable access to funding in the light of the now available Global Funding for HIV/AIDS in PNG

**HIV/AIDS Clinical Management Training Workshop for Angau
Hospital Top Level Management**

PNG FHA & M PAC in collaboration with Angau RVITF & NDOH /
WHO support

Melanesian Hotel, LAE, Morobe Province 29th – 3rd December
2004

Date	Time	Topics	Lecturers
13 December	8.30-	Registration, Opening ceremony	Dr.Paison
	10.00	Introduction and pretest	Dakulala
		Global and local situation of	
	10.30-	HIV/AIDS	Dr. Nopporn
	11.00	What is HIV/AIDS	Dr.P Dakulala
	11.00-	Natural history of HIV	Dr.Nopporn
	11.15	Structure and cycle of HIV	Dr.Moke
	11.15-	Laboratory testing and diagnosis of	Dr.Nopporn
	11.45	HIV	Dr.Dakulala
	11.45-	Hepatitis B virus infection	Dr.Nopporn
	12.00	Transmission and prevention of	Dr.Dakulala
13.00-	HIV/AIDS		

	1330 13.30- 14.00 14.00- 14.30 14.30- 15.00 15.15- 16.00	An overview of advance HIV/AIDS Discussion	
14 December	8.30- 9.00 9.00- 10.00 10.00- 10.30 10.30- 11.30 11.30- 12.00 13.00- 13.30 13.30- 14.00 14.00- 15.00 15.15- 16.00	Overview of STD and HIV Opportunistic infection management HIV and TB Pharmacology of HIV drug and when to start and when to change National guideline for ART in PNG Prevention in the health care setting /Universal precaution Post Exposure Prophylaxis (PEP) General and specific care management Neuro, Oral, GI, Skin and Eye Discussion	Dr.Daoni Dr.Nopporn Dr.Dakulala Dr.Nopporn Dr.Dakulala Sr. Julie Vit Dr.Nopporn Dr.Dakulala
15 December	8.30- 9.30	Mother to Child Transmission Management in O&G setting Management of HIV in pediatric	Dr.Grace Pediatric team

	9.30- 10.00 10.15- 11.00 11.00- 12.00 13.00- 13.30 13.30- 15.15 15.15- 16.00	setting ARV in pediatric PNG guideline for Pediatric ART HIV/AIDS specific treatment in Surgery General and specific care management (continued) Drug adherence and side effect Discussion	Surgical team Dr.Dakulala Dr.Nopporn
16 December	8.30- 9.00 9.00- 9.30 9.30- 10.00 10.30- 10.45 10.45- 11.00 11.00- 12.00 13.00- 16.00	Behavioral change communication The role of VCT in management of HIV (PLWHA) Overview of Angau Hospital Clinical Pathway/Day care center UNDP-Break-through Initiative- MHAMI High risk intervention in brief Global Fund Field Visit (Colgate Palmolive Head Quarter)	Rita Maruha Takeso Toyata Dr.Dakulala Ms.Meredith Tutumang Joan Kanoka Dr.Daoni Takeso Toyata
Date	Time	Topics	Lecturers
17 December	8.30- 9.00 9.00- 9.30	Discussion on field trip Thailand experience	Ms.Meridth Dr.DAkulala and Sr.Julie Vit Ms.Meridth

	9.30-10.00	Morobe PAC HIV/AIDS response	Dr.Nopporn ADRA representative
	10.00-11.00	Role of NGOs and PWHLA FBO role Post test examination Discussion	Group
	11.00-11.30	Plan for the future work and recommendation	Dr.Saau
	11.30-12.00	Certificate and closing ceremony	
	13.00-15.00		
	16.00-16.15		

Finding

1. Angau Memorial General Hospital (AGMH) is the regional hospital in Morobe Province. There are 400 beds for in-patient department.
2. The prevalence of HIV infection among pregnant women in Lae was 2.6 % and currently from the survey in the community, HIV prevalence rate was 3.2 %. Most cases get infection through sexual transmission. There were about 2,000 commercial sex workers in Lae with an increasing trend. About 700,000 pieces of condoms were distributed last year; however the mechanism of distribution was still not in a systematic way and could not evaluate the impact of the program.
3. There is a very strong support from the high level administrators at AGMH for HIV/AIDS program.
4. Equipments and supplies for universal precaution, were not enough. Most staff have a very high concern and worried about their job. Post exposure prophylaxis kits and protocol is not in place.

5. There is no specialist for OB-GYN and there is no ANC clinic at AGMH, most pregnant women attend ANC clinic at urban clinics so PMTCT program is still not in practice.
6. Currently, there were 4 cases of HIV/AIDS got ART, 2 of them died early after treatment, 2 of them were still on the treatment. There were 20 HIV/AIDS cases on the preparation to start with ART. There was very limited information about HIV cases because there was no computer and no supervision from central level. The reporting system is still not in place.
7. Although there is a pediatrician in the hospital but there is no HIV clinic for children and no HIV infected child get ART. The information about HIV infected children is also limited.
8. Most participants in the training, have never gotten training about HIV/AIDS before, the average of pre-test examination was 40 %.
9. AGMH started confirmatory test in November by using Determine and capillus test, however there was some limitation and quality was in doubt.
10. Lae had the best DOT (direct observe treatment) for TB program in the country. The default rate among tuberculosis cases came down from 16 % last year to be 4 % this year. However the cure rate was 76 % that may be cause by high proportion of HIV infection among Tuberculosis cases (15 %). With the same mechanism for DOT it can be applied for ART program also.
11. There were some Faith base NGOs in Lae, i.e., ADRA, Hederu Anglicare, Lutheran, however the coordination between NGOs were still weak. Even though most of their activities are still limited to counseling and psychological support but they have a very high capacity and interest to open HIV clinic and VCT if they get support.
12. PAC in Lae worked closely with NGOs and government sectors and was quite active.

Recommendation

1. With a high trend of HIV/AIDS cases at AGMH, ART program should be strengthened and move faster to cover with the increasing number of cases.
2. Location of AGMH and their capacities is very good to be the centre for ART program to provinces in the region and some of highland region.
3. The data collection and reporting system should be set and supervised to monitor their activities in the future.
4. After the training for top level management, there should be another training program for people at working level. The training should be in house service training to reduce the cost and make it as long term training.
5. More counselors should be recruited and trained particularly ART program to cover with VCT sites and strengthen drug adherence among HIV/AIDS cases.
6. Man power and capacity for laboratory should be included in the work plan to support ART program and 3 more VCT sites that will be expanded next year.
7. From the top level training, they set target to give ART to at least 300 HIV/AIDS cases at the end of year 2005. To achieve the target, there should be the core team to prepare the plan and increase the capacities.
8. The coordination and net work among NGOs should be strengthened to support the referral system and global fund activities.
9. The role of PWHA should be emphasized to reduce discrimination and stigmatization problem, the meeting among PLWHA in the clinic should be the entry point for net work setting.

Reporting form for post exposure prophylaxis

Name..... Working place.....
Hospital/clinic..... Province.....
Time of exposure..... Date.....
Name of counselor..... Name of doctor who
evaluate.....

Type of contacted fluid
 Blood/serum Cerebrospinal fluid Urine
 Saliva Pus
 fluid (amniotic fluid, pleural fluid, abdominal fluid etc.)
 others specify.....

Type of exposure

Percutaneous injury deep wound shallow
wound Superficial
 Mucous membrane or non intact skin exposure
 Others specify.....
 Blood seen No blood seen

Activity during injury
 Recapping the needle Blood withdraw

Surgery IV infusion
 Drug injection Others specify.....

During exposure Wearing glo No glove
 Duration of exposure Short (< 5 minutes) Long (> 5 minutes)

Exposure source

HIV test Positive Negative Unknown status

Clinical of exposure source

Asymptomatic Symptomatic AIDS related disease
 TB in young age group STI cases
 Hepatitis B Surface Antigen Positive Negative
 Not known

Exposed person status

HIV test Base line 6 weeks 3 months.....
 6 months.....
 HBsAg Base line..... 2 months after last dose of vaccine.....
 PEP regimen AZT 3TC 5FV
 Duration of PEP regimen 1 weeks 2 weeks
 3 weeks 4 weeks

MANAGEMENT OF HIV IN PREGNANCY

GUIDELINES FOR OPTIMAL OBSTETRIC CARE

INTRODUCTION

HIV infection is associated with high morbidity and mortality. Data from Sero-Prevalence surveys in several antenatal clinics in PNG show prevalence rates between 0.7% (Daru - 2002) to 2.5% (Lae - 2002). The prevalence of HIV infection in women who delivered at the Port Moresby General Hospital (PMGH) in 2003 was 0.8%. This has increased from less than 0.2% a decade ago. Currently some 2-4 children die per month from HIV/AIDS in the Paediatrics wards at the PMGH.

The risk of MTCT of HIV varies between 15-20% in non-breast feeding populations and between 25-40% in breast feeding populations in Sub- Saharan African populations. The virus can be transmitted while the baby is in the womb, during labour and delivery or in the post- natal period through breast milk. The principle risks are related to maternal viral load, obstetric factors and infant feeding. MTCT of HIV is largely preventable where universal antenatal screening is undertaken, artificial formulae feeding is feasible, ARV is accessible and delivery undertaken by elective Caesarean. All these interventions when performed can reduce the risk of MTCT of HIV to less than 2% compared to the 15-40%. In a third world country such as PNG, the socio-economic circumstances are such that it is neither feasible nor

appropriate to directly adopt this critical clinical intervention package without adaptation.

This document is a guide to Optimising Obstetric Care (during the antenatal, labour and delivery and in the post partum period). It is adapted to the local setting taking into account resource constraints and overall capacity of the health care system. Not all interventions are feasible in all levels of health care set up, however, as much as possible health care workers should try to abide by the Optimal Obstetric Care Guidelines for best practice; the ultimate aim is to save children from certain fatality as a result of HIV transmission from their mothers.

This document should be read in conjunction with one other related

document: Labour Ward Care Protocol for the HIV positive mother.

1. ANTENATAL CARE

Pregnant women should be offered antenatal screening for HIV in early pregnancy because appropriate antenatal interventions can reduce MTCT of HIV infection. The following care should be accorded to minimise transmission of the virus during the antenatal period.

1a. Screen for STIs and treat appropriately.

Viral load in cervico-vaginal secretions has been shown to correlate with MTCT. STIs increase inflammatory cells in the genital tract thereby increasing the viral load which in turn

will increase the risk of transmission of the virus to the baby delivered through the vaginal route.

1a-1 Any genital tract infection detected on clinical examination should be treated according to the STI/Genital Tract Infection Syndromic management protocol.

1a-2 Do VDRL and treat as appropriate. Where possible do Hepatitis B screen.

1b. Screen for opportunistic infections such as TB, Pneumocystis carinii Pneumonia (PCP) infections and treat appropriately or refer for appropriate treatment.

1c. Screen for anaemia (Hb), Give micro-nutrients; Iron and Folic acid according to standard protocol

1d. Anti-Malarials; Give anti-malarial prophylaxis according to malaria management guidelines.

1e. Use of Anti-retroviral drugs in Pregnancy (For details, see Guidelines for ARV use in Pregnancy).

In summary; Use the most appropriate regime for your setting based on the availability of the drug(s), the clinical condition of the patient and your background knowledge and experience in the use of these drugs. If unsure, use the simplest and cheapest regime - Option 1, which is the current regime advisable nationwide for prevention of mother to child transmission of HIV.

Option 1. Nevirapine one (200mg) tablet 'o' stat to the mother as soon as possible when mother is in active labour. Nevirapine syrup 2mg/kg oral stat to the baby after delivery within 72 hrs.

2. LABOUR & DELIVERY

Management of labour and delivery should be aimed at minimising the transmission of the virus from the mother to the baby by minimising both the amount and time of contact of the mother's bodily secretions/blood with the baby.

2a. Shorten time of membrane rupture to delivery interval.

Rupture of membranes of more than 4 hours increases the risk of virus transmission, thus prolonged rupture of membranes should be avoided. In practice artificial rupture of membranes (ARM) should only be done when delivery is imminent. Where there is spontaneous rupture of membranes, labour should be expedited with the use of oxytocin.

2b. Avoid instrumental delivery

The use of instruments such as vacuum extractor and forceps in the delivery of the baby will potentially traumatise the skin or scalp of the baby, this may increase contact between these raw surfaces and the blood or genital secretions of the mother, increasing the chances of virus transmission to the baby. Instrumental delivery should be avoided as much as possible.

2c. Vaginal cleansing

Vaginal canal washout with 0.25% chlorhexidine or 1% benzalkonium has been used with mixed results. Studies of Genital tract Infections in the antenatal population in PMGH showed high prevalence of potentially pathogenic organisms (Chlamydia, Bacterial vaginosis, Trichomonas vaginalis). Considering the above findings it is advisable to do vaginal cleansing on admission to labour ward. This should be done regardless of whether the membranes have ruptured or not.

2d. Avoid invasive obstetric procedures

Any procedure that increases the contact between maternal blood and genital secretions

with the baby's abraded skin or mucous membranes such as eyes or mouth should be avoided.

2d-1. Avoid unnecessary episiotomy as much as possible.

2d-2. Avoid potentially preventable 'messy' vaginal tears by better controlled delivery and or doing a timely and necessary clean episiotomy.

2d-3. Avoid clipping or abrading the baby's scalp when using the forceps during ARM

2d-4. Avoid the use of scalp clips when using internal cardiotocograph (CTG) for fetal monitoring

2d-5. Avoid unnecessary trauma to the baby e.g vigorous suctioning of the baby

2e. Use Universal Precautions & Care during labour and delivery

The health care worker attending to the labour and delivery should use universal precautions for their own protection.

Basic precautions;

2e-1. Waterproof plastic apron, glasses or other eyes protection,

protective boots.

2e-2. Wash hands without brushing or scrubbing.

2e-3. Glove use: test glove for leakage before use, double gloves, use

long gloves for manual removal of retained placenta.

2e-4. Avoid deliveries when there is wound on hand. If necessary use

double gloves.

2e-5. Avoid blood splitting from the umbilical cord.

Squeeze blood in

the umbilical cord before clamping and cutting.

Clamp and cut

umbilical cord immediately after delivery.

2e-6. Take extra care when suturing tears, use good lighting.

2e-7. Avoid capping needles.

2f. The role of Elective Caesarean Section

Delivery by elective caesarean has been clearly shown to be of benefit in reducing the risk of mother- to -child HIV transmission. However, whether elective Caesarean section is of benefit in women taking HAART (i.e. triple regimen combination) who have an undetectable plasma viral load at the time of delivery is uncertain. Because of the high morbidity and mortality associated with puerperal sepsis (the second most common cause of maternal mortality in PNG), the consensus decision is; *routine* elective caesarean section should not be done in pregnant HIV+ women. The decision to do otherwise should be taken on an individual patient basis.

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3. POST NATAL CARE

Care for both mother and baby after delivery are important for their continued health and wellbeing.

3a. Early detection of signs of infection and appropriate and timely

management can avoid potentially serious complications such as

puerperal sepsis.

3b. Breast and nipple care is necessary to avoid transmission through

breastfeeding due to mastitis and inflamed nipples.

3c. Proper Breast feeding technique improves mouth to nipple

attachment, reduces nipple-areolar trauma, and improves mother-

baby bonding

3d. Exclusive breastfeeding for 4-6 months should be advised where

formula feeding is not acceptable, affordable, feasible, safe and

sustainable. (For details, see Guidelines for Infant Feeding Options)

4. FAMILY PLANNING

Family Planning and Contraceptives should be advised; preferably

using permanent or semi permanent methods such as T/L or Depo

Provera. The simultaneous use of Condoms is strongly advised. This

prevents transmission to a non- infected partner as well as decreases

acquisition of additional viral load or transmitting additional viral

load to an infected partner. For patients on anti-retrovirals drugs there is a

chance of transmitting ARV resistant strains of the virus.

The advice

should always be “ Dual Protection” .

Guidelines for Optimal Obstetric care: Date 01/6/2004

LABOUR WARD CARE PROTOCOL FOR HIV POSITIVE MOTHER

1. HISTORY AND IDENTIFICATION

Identify HIV +ve mother quickly and efficiently on admission to labour ward (check for tag, code number, special sticker etc depending on your hospital identification method)

Treat her with dignity, reassure her and do not stigmatise.

Ask reason for admission to labour ward (labour pains, bleeding, PROM or other).

Explain to her briefly about her care and what she is likely to expect.

Check her antenatal care history using her ANCard or Helt book.

Take note of; 1. Parity, GA, VDRL result, Hb level,

2. Any medical infections such as Candida of the mouth, TB, PCP etc.

3. Any medications used during pregnancy including ARV drugs

4. Antenatal evidence of counselling and plan for;

⇒ Nevirapine (ARV) use for mother and baby during and after delivery

⇒ Infant feeding options (Exclusive Breast Feeding or Formula feeding)

⇒ Contraceptive method chosen post partum

⇒ Social support and partner involvement

Check drug cupboard for ARV medication: nevirapine tablets and syrup.

If the mother is obviously in labour, explain and give her the Nevirapine tablet to take.

If she is not in obvious labour, then examine her first to make sure that she is in proper labour before you give her the tablet.

2. EXAMINATION

A. General exam

- Check the vital signs
- Look for pallor
- Look in her mouth for evidence of thrush
- Check the condition of her breasts and nipples
- Check her neck and chest for evidence of tuberculosis
- Look at her skin & groin for evidence of bad scabies or fungal infection

B. Abdominal exam

- Check the contractions, the fundus and the baby for clinical evidence of IUGR
- Check the foetal heart rate

C. Vaginal exam

- Inspect the vulva for evidence of ulcers
- Do vulval wash down
- Do a speculum (if able to), to check for vaginal discharge, exclude cervical ulcers or cancer, and check for evidence of liquor if history suggestive.
- Do digital examination to check on vaginal dilatation

3. INTRAPARTUM ARV MANAGEMENT

1. Give Nevirapine one tablet (200mg/tablet) to take orally.

In case of mother vomiting; If she vomits the tablet out, or vomits within one hour of taking the Nevirapine tablet, give her 10mg of Maxalon or 12.5 mg of Stemetil IMI and repeat the Nevirapine dose half an hour later. If vomiting persists, do not give her another dose of Nevirapine. (Refer to Guidelines for ARV use in Pregnancy for management of baby' s ARV treatment)

2. If the mother is already on single (AZT) drug therapy, continue the medications

in labour and in addition give a stat dose of one Nevirapine tablet to the mother.

3. If the mother is already on triple (AZT (or d4T) + 3TC + NVP), continue the

medications in labour. There is no need to give an additional Nevirapine tablet to the mother in labour in this case.

4. MEDICAL OBSTETRIC MANAGEMENT

II. FIRST STAGE OF LABOUR

1. Do vaginal canal washout using 0.25 % chlorhexidine or 1% benzalkonium
during the initial vaginal examination using a speculum or where unable to pass a speculum, use a sponge holder and cotton wool gauze or swab immersed in the above solution and gently clean out the vagina. This should be done regardless of whether the membranes are ruptured or not
2. If membranes are intact do NOT rupture the membranes until the cervical dilatation is 7 cm or more or the patient is imminently deliverable
3. If SROM and the contractions are not excellent, set up syntocin to expedite labour and delivery (if there are no contraindications to the use of syntocin). Aim to deliver baby in less than 4 hours of SROM
4. During the process of ARM, rupture the membranes with care, do not clip or abrade the baby's scalp with the ARM forceps

SECOND STAGE OF LABOUR

1. Avoid prolonged second stage i.e. if the contractions are not good and
she does not have clinical evidence of CPD, set up syntocin.
Be cautious with

the use of oxytocin in the 2nd stage in a multiparous a woman

2. Avoid episiotomy as much as possible. Where it is imminent that the vagina will tear ruggedly if you do not do one, it is preferable to do a clean episiotomy. It will be easier and safer for you to suture.
3. Avoid vacuum extraction or forceps delivery as much as possible. If however, the baby has obvious fetal distress i.e. abnormal fetal heart rate and or thick (+++) meconium staining you can in this instance, do instrumental delivery to expedite the delivery and save the baby' s life.

THIRD STAGE OF LABOUR

Avoid blood splitting during controlled cord traction.

Clamp and cut umbilical cord immediately after delivery.

When cutting the cord, avoid blood splitting. Squeeze blood in the umbilical cord before clamping and cutting.

Avoid unnecessary trauma to the baby.

Do not suction the baby unless it is necessary.

If it is necessary i.e. thick meconium (++ or +++ stained) or baby not

breathing then suction with care, avoid vigorous suctioning. Use soft

suction catheter

Gently wipe excessive secretions from around the baby' s mouth,

eyes and rest of the body.

Put baby on the mothers chest for bonding

Take extra care when suturing tears and episiotomies

Use good lighting

If mother opted for Exclusive Breast Feeding, help mother put the

baby on the breast within one hour of delivery.

8. Give Nevirapine (2mg/kg) oral stat dose to the baby.

Notify the baby doctor (paediatric team, where applicable)

for follow

up

5. USE UNIVERSAL PRECAUTIONS IN LABOUR WARD

Basic precautions;

1. Avoid delivery when there is wound on hand, if necessary use double gloves
2. Wear gloves when collecting blood or when dealing with the patient's blood or bodily secretions
3. Wash hands without brushing or scrubbing
4. Wear waterproof plastic apron, glasses or other eye protection, where possible use protective boots.
5. Put long and large plastic sheet under the patient
6. Test glove for leakage before use, wear double gloves where possible,
7. Use long gloves for manual removal of retained placenta
8. Don't put on needle cover with fingers
Use new syringe and needle when refilling local anaesthetic drug
Dispose of all tissue, wash and re-sterilise used re-sterilisable equipment and linen appropriately

Labour Ward Care Protocol : Date 01/06/2004

**MANAGEMENT OF HIV IN PREGNANCY
GUIDELINES FOR ANTI-RETROVIRAL DRUG USE IN
PREGNANCY**

INTRODUCTION

The best way to avoid mother to child transmission of HIV is to prevent women of reproductive age from becoming HIV-infected. For those who are already infected, the most effective way is to counsel and support them to avoid getting pregnant. However, for those women who are pregnant and are already infected, there is adequate evidence that use of short term ARV prophylaxis can significantly reduce transmission of HIV from the mother to her child.

The selection and use of ARVs in PNG will depend on the availability of the drugs, the knowledge and experience of the trained health care worker at the health facility. Most health care facilities do not have doctors, HEOs or PMTCT trained nurses and where they are available, their background knowledge about PMTCT (specifically the use of ARVs) will have an impact on the drug regime used.

Mothers usually book late for antenatal care for many reasons. In 1996, 77% of pregnant women had one or more antenatal care visits during the pregnancy but less than 50% were delivered by trained personnel.

Taking into consideration all of the above, single dose Nevirapine regime will be most commonly used.

GUIDELINES FOR USE OF ARV DRUGS FOR PMTCT IN PNG

The following are general guidelines in the use of ARV for PMTCT depending on the availability of ARV drugs and the clinical presentation of the patient. The regime may be tailored according to the capacity of the health care facility and the experience of the health care provider. Health care facilities are considered under three categories.

1. Antenatal clinic (ANC) facilities offering comprehensive reproductive

health services (VCT with readily available test results, antenatal, labour and delivery and postnatal care services, Infant feeding counselling, Family planning services). These facilities will include hospitals, both private and public and some clinics and health care centres with adequately trained doctors and health care personnel.

Comprehensive ARV drug regimes ranging from single, double to triple therapy can

be used depending on the individual patient's socio-clinical circumstances.

ii. ANC facilities offering partial reproductive health services.

These may include some hospitals, clinics and health care centres.

Single therapy course regimes or single dose Nevirapine to mother & baby is optimal.

iii. ANC settings offering minimal care (few will be able to do testing)

These will include most rural based health care centres.

Single dose Nevirapine to mother and baby is optimal where testing is available

Where no testing is available in a minimal care setting, the emphasis shall be on

Primary prevention.

The following are the recommended guidelines,

(A) Newly diagnosed HIV pregnant woman and no indication for her to

receive ARV for her own disease treatment. Treatment is aimed at PMTCT.

Note: The regimens below are not in any order of preference

Option 1. Nevirapine single dose to the mother and single dose to the baby within

72hrs of delivery.

If delivery occurs less than 2 hours after maternal labour dose, the baby should

receive the standard NVP dose within 24 hours and continue with AZT for 7

days. If AZT is not available, give a second dose of Nevirapine 3days or 72 hrs after the first dose.

Option 2. Single drug regime AZT from 32 weeks to one week (7days) after delivery

plus a single dose of Nevirapine to the mother at the onset of labour followed

by a single dose of Nevirapine to the baby within 72 hours of delivery

Option 3. Triple combination Zidovudine + Lamivudine and Nevirapine (AZT +

3TC + NVP) from 32 weeks to one week (7 days) after delivery. The infant should receive one dose of NVP within 72 hours of delivery. The mother does not get an extra dose of Nevirapine at onset of labour.

Where the mother is anaemic i.e Hb < 8g/dl, use Stavudine (d4T) instead of AZT.

Alternatively, *actively* improve her Hb to over 8 g/dl before commencing AZT containing ARV regime.

If NVP is contraindicated and it is necessary to initiate a Protease inhibitor (PI)

then Sequinavir with Rotinavir (SQV/r) is the preferred PI.

(B) Newly diagnosed HIV infected pregnant woman with indications for ARV

treatment for her own disease. Treatment is aimed at both the woman and her baby

First line: Option B1. ZDV + 3TC + NVP

Option B2. d4T + 3TC + NVP

If there is severe maternal illness, start ARV as early as possible after diagnosis. If maternal illness is not severe or she has

hyperemesis gravidarum, consider delaying treatment until the end of the first trimester or later when vomiting stops.

If the diagnosis is made late in pregnancy, consider first line treatment as soon as possible after proper counselling. On the other hand, the visit may be so late that it may not be possible to initiate triple therapy immediately, thus it may be feasible to give only Nevirapine single dose regime to both the mother and baby. After delivery, after adequate counselling triple ARVs can be commenced for treatment of the mother's disease.

(C) HIV infected pregnant woman newly diagnosed at the time of delivery

It may not always be appropriate to test for HIV in labour. Where possible, do rapid test as soon as feasible after informed consent, before delivery or after delivery.

Where possible, give mother NVP during labour and to the baby a single dose of NVP after delivery within 72 hrs.

If delivery occurs within 2hrs of NVP dose to the mother, give first dose of NVP to baby within 24hrs and follow that with AZT twice daily for one week. If AZT is not available repeat NVP dose to the baby 3 days or 72 hours after the first dose.

If unable to give NVP to mother prior to delivery, give baby first dose NVP within 24hrs and AZT twice daily for one week starting

no later than 72hrs. If AZT is not available repeat NVP dose 3 days or 72hours after the first dose.

If on further review and examination the woman requires ARV for her own disease, refer to case above in (B).

(D) HIV infected non-pregnant woman on ARV treatment for her own disease

.

Ensure drug combinations are proper, and properly administered. Exclude pregnancy. Discuss contraception, preferably Depo-provera^R or Tubal Ligation (TL). Draw attention to importance of condom use in addition to the above contraceptive methods (Dual protection).

Be aware of the effects of certain ARV drugs that reduce the effectiveness of OCP as a result of induction of liver enzymes.

First line: AZT + 3TC + NVP or d4T (Stavudine) + 3TC + NVP

Avoid Efaviranz (EFV), a potential teratogen, unless previous T/L done. EFV may be the drug of choice in patient with TB. It does not interact with Rifampicin as opposed to Nevirapine.

If the patient falls pregnant while on ARV, do not cease treatment during pregnancy, continue the treatment. If however, hyperemesis

gravidarum ensues, cease all medications *simultaneously* until vomiting subsides, usually at around 16 weeks, then recommence all drugs again, *simultaneously*.

If a woman falls pregnant while on EFV, switch to NVP if in the first trimester (first 12 weeks of pregnancy) otherwise continue with EFV if pregnancy is diagnosed in the second or third trimester. Advise her about Family Planning and contraceptive use; either Depo provera or T/L. Counsel her about the potential teratogenic effect of EFV in this pregnancy and possible future pregnancies. Unintentional EFV use in the first trimester is not an indication for termination of pregnancy.

(E) HIV pregnant woman with indications for starting ARV treatment for her own disease but treatment is not yet freely available; Ideally, the treatment should be aimed at both the mother and the baby, however due to the non availability of ARVs for lifelong adult treatment the following regimen should be used for the purposes of PMTCT.

This situation is high risk for MTCT in spite of short course regime. Consider most efficacious regimen and ensure compliance to maximise PMTCT.

First Line: Option E1: AZT + 3TC + NVP

Option E2: d4T + 3TC + NVP from 32 weeks to one week after delivery.

Baby gets single NVP within 72 hours of delivery.

(F) HIV infected pregnant woman with Tuberculosis (TB)

The priority is to treat TB first.

If the woman is very ill and needs ARV treatment concomitantly while receiving Rifampicin based anti-TB drugs use;

First line: AZT + 3TC + SQV/r or d4T instead of AZT

In the 2nd or 3rd trimester you may also use AZT + 3TC + EFV.

Remember to advice FP and contraceptive use; Depo Provera or T/L

plus condom use.

COMPREHENSIVE SUMMARY OF ARV DRUG USE FOR PMTCT
IN PAPUA NEW GUINEA

The ARV drug regimes below are not in any order of preference

Drug regime chosen depends on 1. availability and affordability of drugs

- adherence characteristics
2. patients socio-clinical-
3. health care provider
- knowledge and experience
4. gestational age at testing

Option 1. Single dose Nevirapine to the mother during labour, plus
Single dose of Nevirapine to the baby after delivery

Option 2. Single drug regime of AZT from 32 weeks to one week
after delivery plus

a single dose of Nevirapine to the mother at onset of
labour followed by a
single dose of Nevirapine to the baby after delivery

Option 3. Triple drug regime of AZT (or d4T) + 3TC + NVP
from 32 weeks to
one week after delivery followed by a single dose
of Nevirapine to the baby
after delivery. The mother does not get an
additional dose of Nevirapine at
onset of labour. The decision to commence option
3 is done together
with the physician.

The regimen below is indicated for a pregnant mother who has clinical indications for treatment for her own disease. It is *not* stopped after delivery of the baby but is continued lifelong. The decision to commence this regime is done primarily by the physician in conjunction with the obstetrician.

Option 4. Where the mother needs ARV treatment for her own health, use Triple

Drug regime of AZT (or d4T) + 3TC + NVP starting as soon as possible

after diagnosis and proper counselling. Baby will get a single dose of

Nevirapine after delivery.

In Addition: Where the mother gets less than 4 completed weeks of ARV treatment in the antenatal period prior to her delivery the following ARV treatment regimes apply;

- III. **Alternative 1: Apart from the single mother-baby nevirapine regime, any baby born to a mother completing less than 4 completed weeks (28 days) of ARV treatment during pregnancy prior to delivery, will need to, in addition to a stat dose of nevirapine at birth, complete a 7 day course of AZT syrup, where AZT syrup is available.**

**Alternative 2: Following administration of Nevirapine to the baby,
where AZT syrup is
not available and post- partum maternal drug
compliance is assured, the
following can be the alternative course of action
*instead of the 7 day
course of AZT to the baby.***

**A. Where 4 or more completed weeks (28 days or more) of
ARV is completed prior to delivery;**

Mother discontinues treatment one week after delivery

**B. Where 3+ weeks (more than 21 to less than 28 days) of
ARV is completed prior to delivery;**

**Mother continues ARV treatment for one (1) week (7
days) only after delivery**

**C. Where 2+ weeks (more than 14 to less than 21 days) of
ARV is completed prior to delivery;**

**Mother continues ARV for extra two (2) weeks (14 days)
after delivery**

**D. Where 1+ weeks (more than 7 to less than 14 days) of
ARV is completed prior to delivery;**

**Mother continues ARV for extra three (3) weeks (21 days)
after delivery**

E. Where less than 1 week (< 7 days) of ARV is completed prior to delivery

Mother continues ARV for extra four (4) weeks (28 days) after delivery

In addition to the dose of Nevirapine given to the baby at birth,

Where it is available, AZT syrup is given for one week.

Alternative 3: Where AZT syrup is not available and post partum maternal drug

compliance is not assured, inspite of the mother

completing less than 4

completed weeks of ARV treatment prior to delivery, no

additional

post partum ARV treatment will be given to the mother.

The baby will

get a one stat dose of Nevirapine at birth within 72

hours of delivery.

SUMMARY OF BASIC ARV REGIME FOR PMTCT

IN PAPUA NEW GUINEA

OPTION 1. Nevirapine 1 tablet (200mg) to mother at onset of labour.

Nevirapine syrup 2mg/kg (syrup 50mg/5mls) to the baby within 72hrs, (Most babies should be given the syrup soon after delivery, if given after 72 hours, it may not be very effective).

If the delivery occurs less than 2 hours after the Nevirapine is given, the baby will be given, apart from the initial Nevirapine syrup, AZT syrup 4mg/kg twice a day for 7 days, starting within 24 hours of delivery. If AZT syrup is not available, then a repeat dose of Nevirapine should be given 3 days after the initial dose.

OPTION 2. AZT tablets 300mg 'O' twice a day from 32 weeks till

one week or 7 days after delivery. In addition,
Nevirapine 1 tablet (200mg) to the mother at onset
of labour
plus Nevirapine syrup 2mg/kg to the baby after
delivery.

If the mother completes less than 4 completed weeks of AZT prior
to
delivery and/ or the delivery occurs less than 2 hours after the
Nevirapine
dose, the baby can in addition to the stat dose of Nevirapine syrup
get AZT syrup 4 mg/kg (syrup 10mg/ml) twice a day for 7 days.

GUIDELINES ON HIV AND INFANT FEEDING

(Discussed and accepted at the Paediatric Midyear meeting 22/6/04 in
Goroka)

INTRODUCTION

Studies have shown that HIV can be transmitted from a mother to her baby through breastfeeding. By 1998, it was known that the use of antiretroviral drugs could substantially reduce the risk of mother-to-child transmission before and during delivery. It then became more urgent to find ways to reduce the risk of postnatal transmission through breastfeeding.

In recent years great efforts have been made to promote breastfeeding by all mothers. There are considerable risks associated with not breastfeeding, particularly in resource poor settings. This has resulted in both policy makers

and health workers being reluctant to suggest that a woman feed her infant in any other way. Accordingly, it has been difficult for health workers to advise a HIV-positive woman how best to feed their infant. It is perhaps even more difficult for a mother and her family to decide what is best.

In 1997, WHO, UNICEF and UNAIDS issued a joint policy statement, indicating that HIV-positive women should be enabled to make a fully informed decision about feeding their infants, and supported in whatever method of feeding they choose. The following guidelines have been developed for the ' Prevention of Mother-to-Child Transmission' program in PNG. It sets out several feeding options available to Papua New Guinean mothers and hopes to protect, promote and support breastfeeding for those who are HIV-negative.

GUIDELINES

1. All women attending antenatal clinic in a facility that is practicing prevention of mother-to-child transmission of HIV, should receive general antenatal education including information on HIV and breastfeeding.
2. For the woman who chooses to know her HIV status a pretest counseling must be offered. This should be followed by the HIV test. The result would then be disclosed to her during a post-test counseling session.
3. Post-test counseling sessions must be done individually for women whose HIV status is positive.
4. Infant feeding counseling must not be offered during a post-test counseling session. A woman who is HIV positive may be overwhelmed at that time. First she has to think about herself and how she can cope with all the other aspects of her life.
5. Infant feeding counseling should be given and followed up in the subsequent antenatal visits. Information given in these sessions must

be adequate enough to allow the woman to make a fully informed decision on which feeding option she chooses for her baby. She should be encouraged to make this decision well before delivery.

6. All women should be supported in whatever feeding option they choose.
7. All HIV positive women should also receive additional information on nutrition, health and hygiene to support themselves, whilst living with HIV infection.
8. All HIV positive women must be offered family planning soon after birth especially if replacement feeding is chosen as the feeding option.

FEEDING OPTIONS

Option 1: Exclusive and Continued Breastfeeding

1.1 Exclusive Breastfeeding means that nothing other than breast milk is given to the baby. Exclusive breastfeeding minimizes the risk of HIV transmission associated with breastfeeding.

1.2 Continued Breastfeeding means continuing to breastfeed after the introduction of other fluids and solid food.

1.3 This option maximizes the advantages of breastfeeding. However continued breastfeeding is associated with HIV transmission.

1.4 Women who choose this option must be taught proper breast attachment to reduce the risk of subsequent breast problems.

1.5 Breast conditions including mastitis, breast abscess, engorgement etc must be treated accordingly.

Option 2: Exclusive Breastfeeding then Stop Breastfeeding Early

- 2.1 This option attempts to keep the advantages of breastfeeding as well as minimizing the risk of transmission which is associated with continued breastfeeding.
- 2.2 The most appropriate time to stop breastfeeding depends on the mother's particular situation and may be any time between 3 and 6 months. However about 4 months is recommended, when it is easier for a child to digest other foods and the risks of using them is less.
- 2.3 The introduction of other fluids and solids increases the risk of HIV transmission for the child and hence it is best if breastfeeding can be stopped abruptly or if this is impossible, in as short a time as possible.
- 2.4 If a woman chooses this option she will need counseling on replacement feeding. She needs to find a regular supply of another kind of milk and learn how to prepare it safely. Available replacement milk includes heat-treated breast milk, home made formula or commercial infant formula. Cereals, juices, sugar drinks and coconut milk are some feeds that are not adequate substitutes for breast milk. She needs to give the milk substitute in addition to soft, mashed food.
- 2.5 All replacement milk must be fed by a non-spouted cup and spoon unless in special circumstances where other methods of feeding may be employed.
- 2.6 Women who choose this option must be taught proper breast attachment to reduce the risk of subsequent breast problems.
- 2.7 Breast conditions including mastitis, breast abscess, engorgement etc must be treated accordingly.

Option 3: Express and Heat-Treat Breast milk

- 3.1 This option offers an ideal nutrition for the baby, has some protection against infections and has a low risk of HIV transmission.
- 3.2 As with all replacement feeding time is needed to express and heat-treat.

Option 4: Breastfeeding by Another Woman

- 4.1 This method is also called 'Wet Nursing'. The chosen woman who has agreed to wet nurse should be counseled, tested and shown to be HIV-negative.

4.2 If the wet nurse is sexually active she will also require counseling on safe sex practices so that she does not acquire the virus during the breastfeeding period.

4.3 The mother and the wet nurse must be informed about the small possible risk of transmission of the virus from the baby to the wet nurse if the baby is already infected with HIV.

4.4 A wet nurse should have access to breastfeeding support and assistance to establish effective breastfeeding. This is to prevent and treat conditions such as nipple fissure and mastitis which may hinder breastfeeding.

Option 5: Replacement feeding from Birth

5.1 Replacement feeding is the process of feeding a child who is not receiving any breast-milk with a diet that provides all the nutrients the child needs until the child is fully fed on family foods.

5.2 A woman who chooses not to breastfeed must offer adequate replacement feeding throughout the time the child is at greatest risk of malnutrition; that is until the child is at least 2 years old.

5.3 If an infant is not getting breast-milk, milk in some other form is needed for at least six (6) months. The supply of this milk must be reliable and uninterrupted. It is therefore important that the socio-economic status of the parents be discussed thoroughly before this option is finalized.

5.4 All women who choose this option must receive information on what is constantly available on the market including their price, nutritional adequacy and the approximate cost of the milk for 6 months. They must be encouraged to be prepared prior to delivery including having a preparation lesson(s) on their chosen form of milk in the antenatal period.

5.5 The preparation lessons must be repeated in the postnatal ward whilst the woman and her baby are still in hospital. This is to ensure correct preparation of the chosen form of milk.

5.6 In order to avoid the 'spillover' effect of feeding milk other than breast-milk, preparation lessons must be conducted in a room well away from other mothers.

5.7 All replacement milk must be fed by a non-spouted cup and spoon unless in special circumstances where other methods of feeding may be employed.

MANAGEMENT OF HIV/AIDS IN PAEDIATRICS

GUIDELINES FOR THE USE OF ANTIRETROVIRAL DRUGS IN PAEDIATRIC HIV/AIDS.

(Discussed and accepted at the Paediatric Midyear meeting 22/6/04 in
Goroka)

1. INTRODUCTION

The underlying principles of ART in children are similar to those of adults. However there are specific physiological, clinical, practical and social issues to consider when treating HIV-infected children with ART.

The following are some of these specific issues.

- a) Data on efficacy of ARV agents in adults can be extrapolated to children but issues on pharmacokinetics, formulation and ease of administration require special consideration. Young children metabolize drugs differently from adults and there is a particular need for data on pharmacokinetics in children under 2-3 years.
- b) There are laboratory limitations diagnosing HIV infection in children under 18 months old in resource poor settings. Detection of HIV DNA by PCR is the gold standard diagnostic test however it lacks sensitivity in the first week of life (as does plasma RNA) and is not usually

available in resource poor settings. Test sensitivity is close to 100 % at 2-3 months of age.

- c) The natural history of the infection is different from adults.
- d) Predictive values of surrogate markers to start and switch therapy is different from adults.

Plasma HIV-1 RNA (VL) levels are very high in infected infants (several million copies/ml) and persist at high levels for much longer (years rather than months) than in infected adults following primary infection. In developed countries there is currently no agreed cut-off for starting ART in children.

CD4 cell counts are higher and more variable in young children than in adults. They decline with age and reach adult values at 6-8 years. CD4 cell percentage is less variable although it also decreases with age. It is therefore preferable to use the CD4 cell percentage instead of the absolute cell count for decision-making on ART for infected children under 8 years.

- F. Drug formulations for adults come in combinations that may not be suitable for use in smaller children (below 25kgs) and may require specific combinations if possible.

The absolute lymphocyte count is also higher and more variable in children than in adults. Age related but arbitrary levels can be used where CD4 counts are not available. Recommended levels are:

Birth – 18 months	<2500/mm ³
18 months – 5 years	<1500/mm ³
>5 years	<1200/mm ³

As a general principle, the ARV regime that the parents or guardians are or will be taking should also be taken into consideration when deciding on the most appropriate regime for the child. In determining the initial choice of ART the availability of a suitable formulation and the simplicity of the dosage schedule are also important and should be taken into consideration.

2. PURPOSE

The following guidelines have been prepared as part of the ‘ GUIDELINES FOR THE USE OF ANTIRETROVIRAL THERAPY IN P.N.G’ and hence serve the same purpose.

3. WHO SHOULD START

Prescribing antiretroviral therapy in itself is a complex undertaking. To prescribe ART to the children of Papua New Guinea whose compliance with routine drug regimes is in general, already a problem will be a major task. Therefore in order to gain the benefits of being on ART and to minimize the risk of poor adherence and subsequent viral resistance, the use of both clinical and “ social” selection criteria are recommended.

Clinical Criteria

The following are WHO recommendations to start treatment in HIV-infected children.

Children <18 months: HIV antibody-seropositive AND
a) WHO Paediatric stage III without CD4 test or TLC.

OR

b) WHO Paediatric stage II with TLC <2500/mm³
ART is not recommended in asymptomatic HIV-infected infants in the absence of CD4 cell assays.

Children >= 18 months: HIV antibody-seropositive AND
a) WHO Paediatric stage III disease without CD4 test or TLC.

OR

b) WHO Paediatric stage II with TLC <1500/mm³
(18 months to 5 years)

OR

WHO Paediatric stage II with TLC $<1200/\text{mm}^3$ (>5 years old)

(This guideline will change when Virological tests and CD4 cell count becomes available). Where possible associated clinical conditions need to be treated before ART.

IV. Social Criteria

- i. Children considered for treatment should live within a reasonable distance of the distributing health facility.
- ii. In the situation in which the child's parents were detected in the antenatal period, they should have had adequate (ideally >3 visits) counseling in the antenatal period followed by more than three sessions of follow-up counseling after birth. Information given should include details of ART.
- iii. Children born to parents detected in the antenatal period must have had regular monthly follow-up after birth.
- iv. Parents of children whose diagnosis is made during an illness should also have a minimum of three counseling sessions before a decision of ART is made.
- v. Parents are required to nominate a support person who should also attend their counseling sessions. This is to ensure continuation of treatment in the event that the parents become ill.
- vi. The family should be referred to a community-based organization for
Continued support outside of the hospital.

4. BASELINE TESTS

Full blood count (including TLC)

Electrolytes, Hepatic transaminases

Gastric aspirates/Sputum for AFB and/or CXR

Hepatitis B surface antigen

5. WHAT DRUGS TO USE

Recommended first-line antiretroviral regimes for children.

Regime	Comments
AZT/3TC plus NNRTI	NNRTI choice: If <3 years or <10kg, NVP If >= 3 years or >= 10kg, NVP or EFV
AZT/3TC plus ABC	Preferred if concomitant antituberculosis therapy is being received.

In general children metabolize NNRTI and PI drugs faster than adults and require doses higher than that of adults to achieve appropriate drug levels. Abacavir cause a potentially fatal hypersensitivity reaction in 5% of patients. This usually occurs in the first six weeks of treatment. Treatment should not be restarted if hypersensitivity has occurred.

Nevirapine can be used for children of all ages while Efavirenz should only be used in children over 3 years because of the lack of pharmacokinetic data for younger children. Nevirapine should be given as single dose for the first 14 days to reduce toxicity.

AZT is associated with anaemia due to bone marrow toxicity in 5-10% of patients. If haemoglobin prior to initiation is less than 8g% (without a correctable cause) combination with d4T should be used.

Recommended second-line antiretroviral regimes for children

Substitution of single agents can be made if drug toxicity occurs and can be ascribed to a component of the triple therapy given as first line.

AZT/3TC/NVP	<i>For AZT toxicity:</i> If <3 years or <10kg : d4T/3TC/NVP or If >= or >= 10kg : d4T/3TC/EFV <i>For NVP toxicity</i> If <3 years or <10kg : AZT/3TC/ABC or
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If \geq or \geq 10kg : AZT/3TC/EFV

6. FOR DRUG FAILURE

Definitive diagnosis of failure of a drug regime is the same as in adults. It is made on the basis of viral resistance and can only be confirmed by documentation of a rising viral load.

In the absence of this measurement the important clinical signs of antiretroviral drug failure in an adherent patient include; a lack of growth response to treatment or a decline in growth among those who show initial response to therapy, a loss of neurodevelopmental milestone or the development of encephalopathy and the recurrence of infections, such as oral candidiasis that is refractory to treatment.

If treatment failure is due to non-adherence, considerations should be given to discontinuation of therapy.

For viral resistance it is recommended that all 3 drugs be changed.

First-line regime	Second-line regime	Alternative second-line	Regime
ZDV/3TC/NNRTI	d4T/ddI/LPV/r or d4T/ddI/NFV		
ZDV/3TC/ABC	d4t/ddI/LPV/r or d4t/ddI/NFV or	d4T/ddI/NNRTI plus either LPV/r or	
NFV		d4T/ddI/NNRTI	

7. MONITORING AND WHEN TO CHANGE

The important clinical signs of response to therapy include improvement in growth for those failing to thrive, improvement in neurological symptoms, development in those with delayed developmental milestones and decrease in the frequency of infections.

Clinical monitoring should include weight and height growth, developmental milestones and neurological symptoms. In the absence of CD4 cell assays charted height and weight growth may be the most important indicator of response to therapy.

8. PREVENTION OF OPPORTUNISTIC INFECTIONS

Cotrimoxazole (0.6mls/kg daily) PCP prophylaxis should be given to all babies whose mothers are HIV positive. This should commence around four weeks of age and continue for at least the first 6 months and preferably the first 12 months of life and do antibody test. INAH prophylaxis should be given to children whose mothers have TB.

It is important that all immunisations must be given according to the normal schedule.

9. TREATMENT OF OPPORTUNISTIC INFECTIONS

Refer to the main guidelines

10. CHILDREN WITH TUBERCULOSIS AND HIV COINFECTION

It is recommended that children with TB/HIV co-infection complete TB treatment before ART as in adults.

If a child needs treatment of both infections concurrently then use the regime for children with co-infection AZT/3TC/ABC. If the child is more than 3 years and heavier than 10 kg then AZT/3TC/EFV may be used as an alternative regime.

Refer to main guidelines for recommendations of treatment.

11. ADHERENCE

Refer to main guidelines

12. DRUG INTERACTION

Refer to main guidelines

13. POSTEXPOSURE PROPHYLAXIS

Refer to main guidelines

14. DATA COLLECTION

See data collection form attached.

15. DRUG DOSES

<u>Drug</u>	<u>Dose and method of Administration</u>	<u>Absorption and meal</u>
AZT with (Syrup 10mg/ml) (Capsule :100mg & 300mg)	Oral: 160mg/m ² 8 hourly	Can be administered food
d4T with (Solution 1mg/ml) Capsules: 15, 20, 30 and 40mg	1mg/kg 12 hourly (up to 30kgs) >30kgs see adult dose	Can be administered food
ddl (powder) (solution 10mg/ml) Chewable tablets With buffers 25, 50, 100 & 150mg	90 – 100mg/m ² 12 hourly	Administer on an empty stomach
3TC with (Solution 10mg/ml) Capsule 100mg	4mg/kg twice a day	Can be administered food
EFV Capsule 50, 100,	10-14kg 200mg 15-19kg 250mg	Not with high fat meal

And 200mg	20-24kg 300mg 25-32.5kg 350mg 32.5-40kg 400mg >40kg 600mg Not before 3 years of age	
NVP once (50mg/ml) Tab 200mg	200mg/m ² twice a day	During first two week a day
ABC 20mg/ml Tab. 300mg	8mg/kg/dose twice a day	Use in children >3/12

ANNEX 1. WHO STAGING SYSTEM FOR HIV INFECTION AND DISEASE IN CHILDREN

Clinical stage I

1. Asymptomatic
2. Generalized Lymphadenopathy

Clinical Stage II

3. Unexplained chronic diarrhea
4. Severe persistent or recurrent candidiasis outside the neonatal period
5. Weight loss or failure to thrive
6. Persistent fever

7. Recurrent severe bacterial infections

Clinical stage III

8. AIDS-defining opportunistic infections
9. Severe failure to thrive
10. Progressive encephalopathy
11. Malignancy
12. Recurrent septicaemia or meningitis

Reporting form for ARV

Clinic..... Province..... Year.....

Name	January						February						March						Note for cases who stop or change regimen
	AZT	AZT	D4T30	D4T30	D4T40	D4T40	AZT	AZT	D4T30	D4T30	D4T40	D4T40	AZT	AZT	D4T30	D4T30	D4T40	D4T40	
	3TC	3TC	3TC	3TC	3TC	3TC	3TC	3TC	3TC	3TC	3TC	3TC	3TC	3TC	3TC	3TC	3TC	3TC	
	NVP	EFV	NVP	EFV	NVP	EFV	NVP	EFV	NVP	EFV	NVP	EFV	NVP	EFV	NVP	EFV	NVP	EFV	

PMTCT ARV USE IN PNG

DATE: 01/6/2004

APPENDIX K

Abbreviation

ARV	Anti Retroviral
ART	Anti Retroviral Therapy
AGMH	Angau Memorial Hospital
AZT	Zidovudine
CC	Care Centre
DCC	Day Care Centre
D4T	Stavudine
DOTS	Directly Observe Treatments
DOH	Department of Health
EFV	Efavirenz
GO	Government Organization
HIV	Human Immunodeficiency Virus
PMTCT	Prevent Mother to Child Transmission
MOH	Ministry of Health
NCD	National Capital District
NAC	National AIDS Council
NGO	Non Government Organization
NVP	Navirapine
OI	Opportunistic Infection
ORS	Oral Rehydration Salt
PMGH	Port Moresby General Hospital
PEP	Post Exposure Prophylaxis
PNG	Papua New Guinea
PACS	Provincial AIDS Committees
RTI	Retroviral infection
STI	Sexual Transmitted Infection
STC	Short Term Consultant
Tbc	Tuberculosis
3TC	Lamivudine
WR	WHO representative

Guideline for adult
Children/feeding option
PMTCT

Data recording form for adult , children and pmtct

Evaluation form for PMTCT

Surveillance form

PEP guideline

Drug procurement

Training course for the nurse

Training course for the doctors

Case enrolment/screening form/prophylaxis

Referral system