PUNTLAND

A Technical Report

The 2004 First Second Generation HIV/AIDS/STI Sentinel Surveillance Survey

Among Pregnant Women attending Ante-natal Clinics, Tuberculosis and STD patients

WORLD HEALTH ORGANIZATION (WHO)

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World Health Organization (WHO) in collaboration with Puntland Health Authorities, World Bank, United Nations Development Programme (UNDP), Joint United Nations Programme on HIV/AIDS (UNAIDS); United Nations Children Fund (UNICEF) and United Nations Fund for Population Activities (UNFPA).

FOREWORD

Reliable information on HIV/STIs prevalence in Puntland has been lacking due to the weak health information system and proper tracking of HIV/AIDS/STIs surveillance data. The monitoring of HIV/STIs in Puntland can not be effectively understood without reliable base-line data. Equally no meaningful control program on HIV/STIs can be established without adequate knowledge of the prevalence of these diseases. It is important to stress that the only way to establish reliable Sero-prevalence baseline data on HIV/STIs is to undertake a standardized comprehensive Sero-prevalence study in all regions of Puntland.

I am pleased to welcome the first Sero- prevalence surveillance report on HIV and STIs from all regions of Puntland conducted by WHO in collaboration with national health authorities, World Bank and the United Nations agencies. It is gratifying to note that the whole study was nationally driven process with Puntland health authorities assuming full ownership of the survey while WHO provided the technical, administrative and logistical support.

I hope that with this baseline data, Puntland authorities will be in a better position to monitor HIV/STIs disease trends and strengthen further the national capacity to control the HIV/AIDS/ STIs epidemic.

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Somalia

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ACKNOWLEDGEMENTS

Acknowledgement and gratitude are expressed to all those who have helped in the preparation and implementation of the first comprehensive country-wide HIV/STIs Sero prevalence surveillance survey in Puntland.

Special thanks are due to members of the following:

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- United Nations Country Team/Somalia (UNCT) and Somalia Aid Coordinating Body (SACB) for their unflinching support
- WHO/Somalia Country Office, WHO/Regional office and WHO Head Quarter for their technical guidance and logistic support; and WHO consultants for their technical guidance during the implementation of the Sero-prevalence surveillance survey.
- The World Bank for providing funds through the Low Income Countries Under Stress (LICUS) Project for establishing the Sero-prevalence surveillance in Puntland.
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- The Nairobi University Department of Microbiology (WHO Collaborative centre) for performing the external quality control

This report will not have come out without the immense support of the entire HIV/AIDS partnership in Somalia. WHO would like to reiterate its commitment to continue the collaboration with all partners in the field of HIV/AID surveillance in the future.

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EXECUTIVE SUMMARY

This survey is the first HIV/AIDS/STIs Sero-prevalence surveillance report coming out from three regions of Puntland. Also this is the first surveillance survey that implemented the second generation surveillance system in an effort to improve better understanding of the epidemic. The surveillance covered three sentinel groups (ANC, STIs and TB patients). Besides, STIs prevalence study was conducted among ANC attendants and STIs patients.
This Sero-prevalence surveillance study was conducted to (i) generate baseline data to determine the current HIV/STIs prevalence rates among ANC attendants, STIs and TB patients and (ii) provide information for advocacy, planning and monitoring of interventions.
The survey was technically managed by WHO, financed through World Bank through LICUS project in collaboration with national health authorities , UNDP, UNAIDS and other development partners. A draft protocol was developed for the survey by WHO/Somalia and sent to all developmental partners of SACB, HIV/AIDS technical working group and other technical experts for comments. The document was jointly reviewed and adopted for implementation. Manuals and guidelines on all aspects of the survey were developed by WHO/Somalia and adapted to Puntland context. The manuals covered training of field workers, supervision of staff and procedures, laboratory techniques, recruitment of clients, handling and transportation of samples, maintenance of cold chain, storage of samples, and quality control.

Using an unlinked anonymous method as specified in the protocol blood samples were collected from 897 ANC attendants in 3 sites from 3 regions. Collected samples were initially tested for syphilis and HIV at the site with RPR and Cappilus 1/2 respectively. Samples from TB patients were tested for HIV only. ANC attendants who tested positive for syphilis were treated with penicillin. Supplementary vitamins, folic acid and iron were provided to those who were found to be anaemic. The data entry forms were filled with the clients/patients details. The specimen containers were labeled using codes indicating patient/client no. town code, facility code and date. Samples after initial testing on site were transported to Bosasso reference laboratory. Laboratory technicians specially trained for the survey retested all samples using Capillus HIV1/HIV2 and determine kits and RPR and TPHA for HIV and syphilis respectively under the supervision of WHO laboratory consultant. All results were documented in a specially designed Data Collection Forms. All positive and 10% of the negative samples were stored at -70 ^{0}C for onward transportation to the University of Nairobi, Microbiology Department WHO collaborative Centre for external quality control.
Urine and vaginal swabs were collected from ANC attendants while cervical and urethral swabs were collected from STIs patients and stored at -70 ^{0}C for on-ward transportation to the University of Nairobi, Microbiology Department WHO collaborative Centre for Gonococcus and Chlamydia testing using Polymerase Chain Reaction (PCR).

SPSS software was used in the management of the survey data and it involved active data entry, data cleaning, and quality control. The result of the survey showed average HIV prevalence of 1.0% and a median prevalence rate of 0.9 %; and 0.22% for syphilis among ANC attendants. Syphilis among and STIs patients in Bosasso is 0.0%. The HIV prevalence among TB patients in Bosasso is 5.5%.
The STIs Prevalence study showed that Gonorrhea among ANC attendants is 0.% while Chlamydia is 2.2 % and when aggregated by age group 15-25 it is 5%.
Gonorrhea among STIs patients is 0.7 % while Chlamydia is 2.2%. Gonorrhea and Chlamydia prevalence is 2.2% among STIs patients when aggregated by age group 15-24 it is 4%.
Galkaio sentinel site has HIV prevalence above 1%. There are however regional variations and age specific prevalence rates were highest for the age group 15-24 years. The protective behavioural factors to curb the epidemic are still very low.
Puntland can be on a verge of generalized infection but still has a good opportunity to control the HIV/AIDS epidemic.
It is recommended that the results be appropriately adapted to inform advocacy, programme planning and interventions. It is also recommended that future surveys should move from "anonymous unlinked" to "linked" surveys within the provision of voluntary testing counseling (VCT), PMTCT as well as Care and Support programmes for women testing positive. In the present circumstances, the two approaches are not mutually exclusive.

It will be most useful for Puntland to have a population-based survey among high risk groups as well as sustain the surveillance on biennial basis.

CHAPTER ONE : INTRODUCTION

1.1 Background Information

Puntland is on the Horn of Africa and is bordered by Ethiopia and the Indian Ocean. Puntland is in a complex emergency situation. The infrastructure, including health services provision, was severely affected by the civil war. The livelihood of large number of the population was affected forcing them to move from rural to urban areas and to neighboring countries. This movement is associated with breakage of social bonds, the phenomenon that is well known for increasing the vulnerability of the population to Human Immunodeficiency Virus (HIV) infection. The extensive mobility, the low literacy rate and the widespread poverty constitutes serious vulnerability factors.

There is a national HIV/AIDS Strategic Framework for Somalia action plan Puntland. Recently an Integrated Prevention, Treatment Care and Support Plan was developed by WHO and supported by the UN system.

In Puntland Syndromic case management was established since 2002 using Kenya protocol

Data on Sexually Transmitted Infections (STIs), Human Immune Deficiency Virus (HIV) and the Acquired Immune Deficiency Syndrome (AIDS) are scarce in Puntland. Accumulative HIV prevalence data coming from () blood screening centers out of (), since 1996 up to the end of 2003 showed () %.

In order to put in place proper HIV/AIDS/STIs control and prevention program, baseline epidemiological Sero-prevalence information on HIV and STIs was conducted in 3 regions. This is the first time a systematic approach of global standards is used to generate information on HIV/STIs..

The survey was executed and technically overseen by World Health Organization and funded by the World Bank. Comprehensive Protocol, various necessary tools and formats and modes operandi were developed by WHO/Somalia. WHO/Geneva, EMRO and UNAIDS/Geneva have provided valuable technical guidance. Other developmental partners in the country have been continuously briefed during the process of implementation on the progress made through the SACB forum. UNAIDS/Somalia office was very helpful in organizing the data and giving valuable inputs.

The report highlights the objectives, methodology, limitations, findings and conclusions of the 2004 National HIV/STI Sero-prevalence among ANC attendants, TB patients attending TB centres and STIs patients attending STIs sentinel sites. In addition, STIs Prevalence was carried among the same clients attending Bosasso Central MCH and STIs patients attending STIs sites in the same town.

The results of the survey could not have come at a more appropriate time than now when the Puntland is increasing it's commitment to fight against HIV/AIDS. The authorities in Puntland, multilateral and bilateral donors, international non-governmental organizations, private sector, the media, the civil society and the general public will find the information from this survey useful for the prevention and control of the epidemic in the country. The information would also serve as a tool for intervention prioritization, resource mobilization, improved commitment, planning, monitoring and evaluation of the response.

1.2 Goal and Objectives of the Survey

The main purpose of the survey was to provide relevant, appropriate and timely data for planning effective prevention and control of HIV/AIDS and STIs in Puntland.

The specific objectives of the survey were:

1. To determine the HIV prevalence among ANC attendants, TB and STIs patients
2. To determine Syphilis prevalence ANC attendants and STIs patients
3. To conduct STIs prevalence study among asymptomatic women attending Bosasso Central MCH.
4. To conduct STIs prevalence study among symptomatic STIs patients attending Bosasso STIs sentinel sites.
5. To relate 2004 KABP survey to the Sero-prevalence surveillance data.
6. To use the information generated from the survey for advocacy and planning interventions.

CHAPTER TWO : METHODOLOGY

3.1 Sentinel Population

The main sentinel population groups covered during the survey were ANC attendants, sexually active 15-49 years. It is important to note that women of reproductive age are an important population to monitor since they are pivotal to both heterosexual and mother to child transmission of HIV and; are generally used as proxy for the general population.

Other sentinel groups studied included patients with tuberculosis and sexually transmitted diseases. STIs prevalence study was conducted among ANC attendants visiting one MCH clinic in Bosasso and STIs sentinel sites in the same town.

3.2 Sentinel Groups Inclusion and exclusion criteria

- **All Groups**

For all the sentinel groups included, the following criteria were used:

- One year continuous residence in Puntland.
- Age group 15-49 years except for TB patients (up to 59 years).

- **ANC attendants**

All antenatal care attendants, aged 15-49 years presenting for the first time during that pregnancy and within the survey period were included. All antenatal care attendants who were having repeat visits at antenatal clinics were excluded.

- **STIs Symtomatic patients:**

All patients attending STIs sites complaining of STIs syndromes such as lower abdominal pain, genital ulcers and characteristic discharge or abscesses were included.

- **STIs Asymptomatic patients:**

All asymptomatic women attending MCH clinics were included. ANC attendants and STIS patients recruited for STIs prevalence study coming for return visits during the study period were excluded.

- **TB Patients**

All newly confirmed cases with pulmonary and/or extra-pulmonary TB were included while all relapse cases were excluded

3.3 Sentinel sites

A two stage intentional sampling method was used in selecting the zones and sentinel sites:-
Selection of the zones and the sentinel sites. In Puntland, Bosasso in Bari region, Galkaaio in Mudug region and Gorawe in Nugal region were selected.
The criterion used for selecting the regions was the population density in urban areas and the accessibility.

The sites chosen were MCH clinics, hospitals out- patients clinics, which covers obstetrics and gynaecological clinic/STIs sentinel site and a private clinic, in addition to a TB centers. A total of 7 entinel sites were selected.

The criteria for the selection of sites were:
* This service was provided during the survey period in ANC settings.

- ***Availability of functional ANC services with qualified staff***
- ***Routine blood collection and testing from ANC attendants for syphilis as part of the care and services provided****
- ***Performance of routine laboratory tests***
- ***Easy accessibility to surveillance field supervisors***
- ***Provision of health care services to relatively large numbers of ANC attendants per week so that adequate sample size can be obtained***
- ***Catchments of population comprising varied demographic groups***
- ***Location in different geographical areas,***
- ***Willingness of staff to cooperate and their capability to conduct the survey***
- ***Previous participation experience in similar surveys.***

**This service was provided during the survey period in ANC settings*

3.4 Sample Size

The sample size was based on the recommendations of WHO. The recommendations take into consideration the estimates of HIV prevalence in the general population surveyed, the precision or relative error considered acceptable and the level of confidence desired. The formula used for calculating the sample size for HIV surveillance STIs prevalence was 95% Confidence Interval= $P \pm Z \times \sqrt{[P \times (1-P)/N]}$
P=Prevalence
Z= confidence level
N=Sample size

- ***ANC attendants in MCHs centres***

The sample size was calculated on the assumption of 95% confidence level (Z=1.96) taking into account the feasibility of obtaining the minimum sample number of 350 per MCH site especially in emergency situation as in Somalia.

- ***TB patients***

A minimum sample size of 250 was used on the assumption of 95% confidence level.

STIs Prevalence Study

- ***Symptomatic STIs Patients***

A sample of 250 was used based on the assumption of 95% confidence level

- ***STI asymptomatic Patients***

A sample size of 500 calculated on the assumption of 95% confidence level (Z=1.95) was used.

3.5 Sampling Procedure and Sampling Duration

The sampling procedure used was consecutive sampling. Clients who met the eligibility criteria were selected consecutively until the desired sample size was achieved for all sentinel groups. The sampling duration was 12 to 16 weeks.

3.6 Demographic Information

The following demographic data: zone, name of site, age, sex, living status, number of children, marital status, level of education and history of previous vaginal discharge were collected using structured data collection forms. However, number of children, marital status, history of previous vaginal discharge and level of education were collected only in MCHs and STI sentinel sites where STI prevalence study was conducted.

3.7 Training of Field Workers

A training workshop was organized for all the sites. The participants included doctors, nurses, laboratory technicians, zonal supervisors and program managers. The main objective of the training was to standardize the survey methodology in all chosen sites as described in the survey protocol. The training covered site selection, subject recruitment, administration of data collection forms, blood sample collection, coding, storage, transportation, laboratory testing, confidentiality, ethical issues, quality assurance, supervision and survey management strategies.
A comprehensive laboratory demonstration refresher workshop on HIV and Syphilis testing was carried out for all laboratory technicians that implemented the survey.

3.8 Survey Supervision

Several supervisory visits were carried out at different levels of the operation during the period of the survey. The main objectives of the field supervisions were (i) to ensure that all sites commenced the survey in due time (ii) to assess existing logistics and technical problems that might affect the operation and (iii) to offer solutions to existing problems during the survey.

During each of the supervisory visits, the forms and terms of reference of the different staff were provided to all supervisors to guide the survey procedure, the supervision process and the performance of the field workers.

3.9 Technical Leadership and Coordination of the Survey.

The survey was technically managed by WHO/Somalia. National staff from different regions implemented the survey under close supervision of WHO/Somalia staff.

HIV & Syphilis Surveillance

3.10 Sample Collection

Certified nurses at sentinel sites carried out sample collection, after being adequately trained by WHO laboratory consultants. Ten (10) ml blood samples were collected in vacutainer tubes for HIV and syphilis testing. The study subject code, the facility code, name of the facility, date of sample collected, age, living in urban or rural areas and study group were indicated in the respective study forms. They were transported to the nearest laboratories by assigned town supervisors/laboratory technicians on daily basis and kept at 2-8 ^{0}C.

The sera separated from the blood samples collected from ANC attendants and STIs patients using electric centrifuge. The sera were screened for syphilis (ANC & STI patients), using RPR method and TPHA for confirmation; while the blood samples collected from TB patients in Bosasso TB center were tested for hemoglobin estimation using Sahli method at site and the remaining blood was separated for HIV testing only.
All serum samples from ANC attendants, STIs and TB patients were screened for HIV using rapid tests (Capillus HIV 1/2). All reactive sera were tested using Determine kit for confirmation at the zonal reference laboratories.

3.11 Methods of Sample Collection and Assurance of Confidentiality

An unlinked anonymous method of blood sample collection was used for the HIV prevalence among ANC attendants, STIs and TB patients. Syphilis and Hb screening was used as the entry point for clients' recruitment. Blood samples were collected from each eligible client, after the administration of the data collection form. Blood samples were coded and sent for syphilis and Hb testing. Syphilis and Hb results were provided as feedback to patients. Those who were positive for syphilis and anaemic were treated. The remaining blood samples were then tested for HIV. The persons who collected samples were different from those who did the testing. Persons who tested samples for syphilis were different from those that tested for HIV, in order to ensure confidentiality.
The clients/patients, the towns, the sentinel sites were given codes without any other identification.
Syphilis screening was done on all sera except for TB patients using RPR screening tests and TPHA confirmatory test. Results were entered in the laboratory forms and sent to the principal investigator, WHO/HIV/AIDS medical officer. The remaining sera were stored frozen at -70^{0}C for onward transmission to Nairobi for external quality control.

3.12 Handling of Samples and laboratory Testing

- **HIV and Syphilis Surveillance**

Blood samples were collected from ANC attendants, STIs and TB patients. They were coded and transported to nearest hospital laboratories after each clinic day. Local laboratory staff immediately separated and performed HIV and RPR testing, using Standard Operating Procedures (SOPs) based on the manufacturer's instruction. Sera from TB patients were tested only for HIV after Hb screening at the site.
Capillus HIV 1/2 latex agglutination test was used for the detection of human antibodies to HIV1/HIV2 in the human serum as initial rapid qualitative assay screening test. It is important to note that all samples were retested by different laboratory personnel in Bosasso reference laboratory. The RPR (Biotec Laboratories, United Kingdom) agglutination test kit was used to screen all the samples for syphilis. All non-reactive sera were reported as negative while all reactive sera were reported as positive. All samples were retested for HIV and RPR. All HIV and RPR reactive samples were then subjected to confirmatory tests using Determine and TPHA kits respectively. The laboratory staff that performed syphilis testing were different from those who performed HIV testing.

- **STIs prevalence study among asymptomatic ANC attendants**

20 ml urine was collected in a sterile screw capped container from each study subject in Bosasso Central MCH from whom blood samples were collected for HIV and Syphilis surveillance. The codes related to STIs prevalence study were indicated in the study form and the specimen containers were coded by town, sentinel group and facility codes and date of sample collection.
The samples were then tested **on site** for leucocyte, protein and sugar using urine dipsticks by certified nurses. The rest of the urine samples was transported to Bosasso reference laboratory by the town supervisor/laboratory technicians on daily basis and kept immediately at -70 degrees Celcius while awaiting transportation to Nairobi University/Department of Microbiology for Gonococcus and Chlamydia PCR testing.

- **STIs Prevalence Study among symptomatic STIs patients visiting STIs clinics, Obstetrics and Gynecology in OPDs and private clinics**

Cervical and urethral swabs were collected from genital ulcers and discharges suggestive of STIs from females and males respectively using dry cotton-tip swabs by physicians from STIs sites in Bosasso. Swabs were collected from patients from whom blood samples were collected for HIV and Syphilis surveillance. Cervical swabs were collected with aid of sterile disposable vaginal speculum. The sterile swab was inserted 2-3 centimeters into the urethra and rotated gently before withdrawing and sending for Gonococcus and Chlamydia PCR testing.

3.12 Laboratory Quality Assurance

The town supervisors/senior laboratory technicians, other than Bosasso transported all serum samples from sites to Bosasso reference laboratory. The town supervisors/senior laboratory technicians were responsible for packing and transporting the samples from the nearest hospital laboratory to Bosasso for internal quality control. Three supervisory visits were organized by the survey team to review and ensure compliance with the survey protocol by field supervisors and laboratory technicians.
Discordant results between Capillus and Determine were reported as indeterminate. The Laboratory staff tested the samples using only codes (anonymous unlinked).

Other quality assurance modalities included the following:

1) All the consumables used for sample collection, separation, storage, dispensing etc were sterile and disposable (i.e. not re-used).
2) Properly stored (4–8 ^{0}C) in-date test kits were used for the Sero-prevalence survey.
3) Each test kit was revalidated at the time of use with the kit negative and positive control samples.
4) All sera were tested again for HIV and syphilis by laboratory staff working in Bosasso reference laboratory as an internal quality control under direct supervision of WHO laboratory services consultant.
5) All samples were kept in -70^{0}C before transfer to Nairobi University Microbiology Department (WHO Collaborative Centre) for external quality control.
6) All positive sera for HIV and syphilis and 10% of the negatives were sent to Nairobi University Microbiology Department for external quality control.
7) In the Microbiology Department in Nairobi, HIV was tested by the ELISA and all Elisa indeterminate samples were retested by Western Blot.
8) The results in the Microbiology Department were registered in the results forms and sent confidentially to the principal investigator, WHO/Somalia HIV/AIDS Medical Officer.
9) Concordance between internal and external quality control was found to be ().

Table 1: GENERAL CRITERIA FOR INDIVIDUAL SAMPLE CATEGORISATION

S/N	Site CAP	Zonal Internal QC cap	Zonal Internal QC Determine	External QC Elisa /Western Blot	SERO-STATUS
1.	+VE	+VE	+VE	+VE	POSITIVE
2.	-VE	-VE	-VE	-VE	NEGATIVE
3.	+VE	-VE	-VE	-VE	NEGATIVE
4.	+VE	+VE	-VE	-VE	NEGATIVE
5.	+VE	+VE	-VE	+VE	POSITIVE
6.	+VE	+VE	+VE	-VE	NEGATIVE

3.13 Data Management

The data collection forms were first checked for completeness, obvious errors and inconsistencies. The data was managed with SPSS software. Double entry was carried as a quality assurance. Discrepant records were subsequently reviewed and corrected. All entries on the computer were further checked against that on paper, item by item. Finally, frequency tables were generated for all variables in order to examine whether there were unusual entries.

The analysis focused on determining the prevalence rates of HIV infection and of syphilis by the relevant independent variables such as site, age, and region. The median prevalence rates for each site and Somaliland was determined. Exact 95% confidence intervals (95% C.I.) were also determined for all rates. Differences between regions were evaluated. The 2004 rates were compared with those of the 1999, in order to examine trends and the statistical significance of changes observed. Estimates of the current adult HIV infections and other important HIV/AIDS data was calculated using the 1999 and 2004 Sero-prevalence data in Puntland.

3.13 Limitations of the Survey

A common difficulty in interpreting data from sentinel surveys is determining the extent to which ANC attendants, STD patients and TB patients are representative of the survey population. The selected survey sites were public ones which may mainly be visited by the poor. However, it is evident that the majority of Puntland population consists of poor people. Some sentinel groups such as STIs patients may not use the public clinics for cultural and other reasons.

Overall, antenatal data and population-based data are generally similar provided that a good proportion of women up-take ANC Services. Despite these limitations, studies comparing HIV prevalence rates at antenatal sentinel surveillance sites with rates recorded in population based studies have shown that ANC data are remarkably reliable and acceptable for HIV/AIDS programming.

CHAPTER THREE: RESULTS

CHAPTER THREE: RESULTS

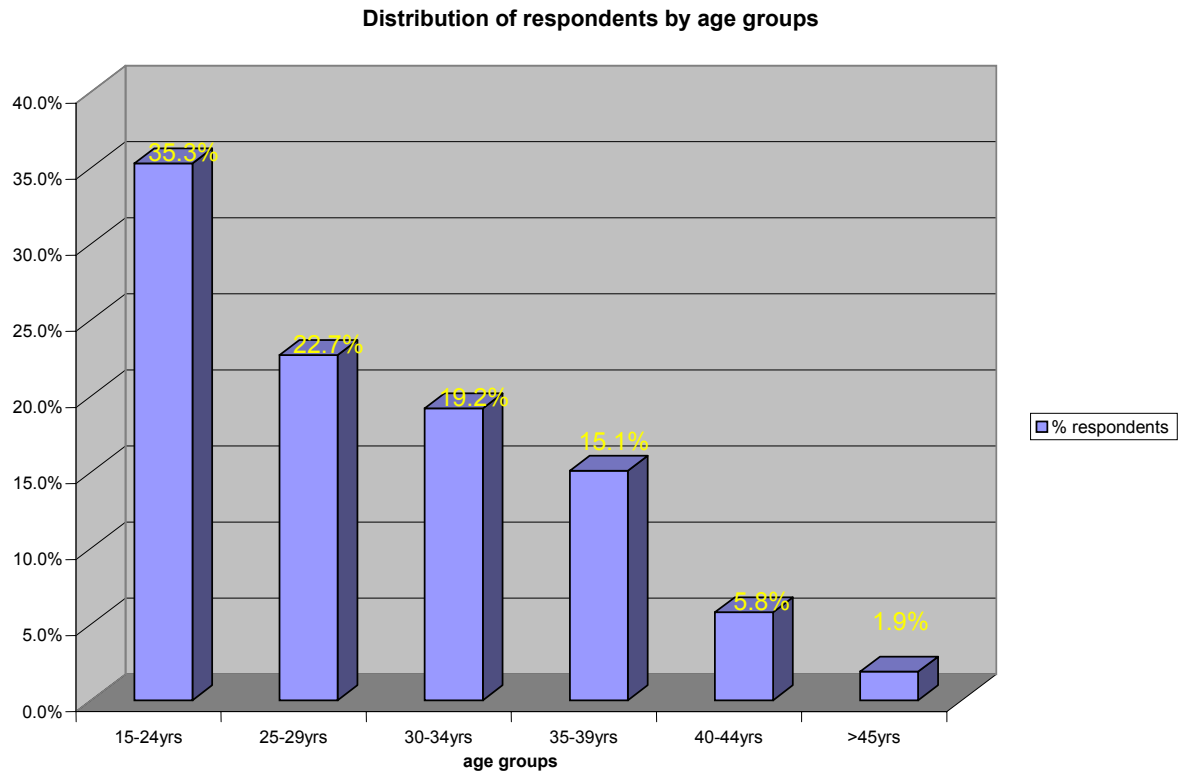
3.1 HIV Sentinel Surveillance among ANC attendants at MCH clinics

A total of 897 blood samples were collected from ANC attendants from central MCHs in Bosasso, Galkaio and Garowe towns of Puntland.

3.1.1 Socio-demographic characteristics of respondents

3.1.1.1 Age groups

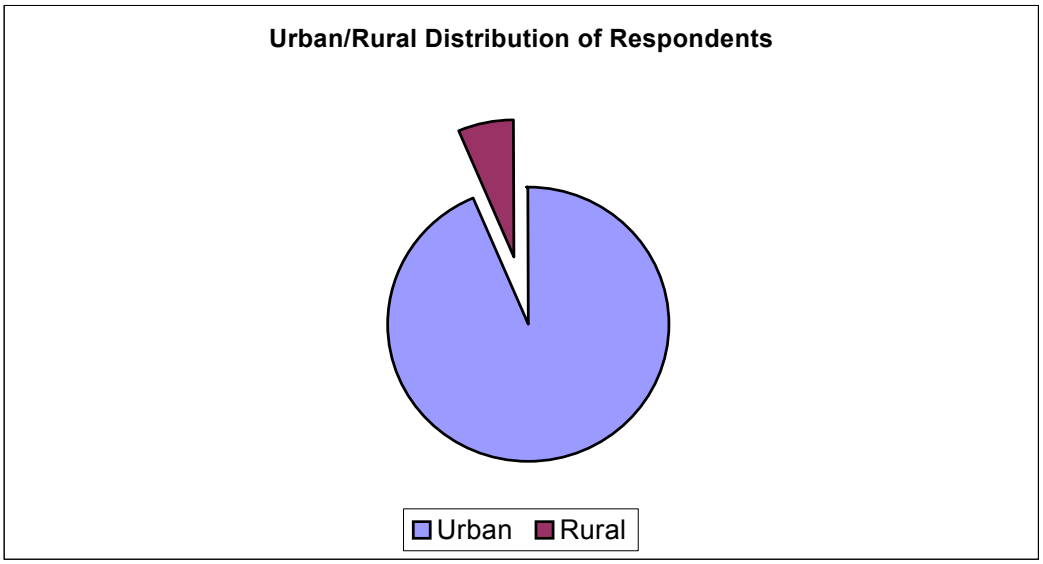
Figure 1: Distribution of respondents by age groups



Relatively more clients aged between 15-24 years (35.3%) participated in the survey than any other group. Twenty three (22.7%) were from 25-29 years, 19.2% from 30-34 years, 15.1% from 35-39 years, 5.8% from 40-44 years and 1.9% from above 44 years.

3.1.1.2 Respondents by living status

Figure 2: Urban and rural distribution of respondents



Ninety four percent (95.7%) of the respondents are from the urban towns while 4.3% are from rural areas surrounding towns.

3.1.2 HIV Prevalence among ANC attendants

Table 1: Overall HIV Prevalence

Name of town	No tested	No Positive	Percentage Positive	Confidence Interval
Bossaso	324	3	0.9%	1.93% - -0.13%
Garowe	284	2	0.7	1.67% - -0.27%
Galkaio	289	4	1.4	2.75% - 0.05%
Total	897	9	1.0%	1.65% - 0.35%
Median Prevalence			**1.0%**	

Minimum 0.7%
Maximum 1.4%
Mean 1.0%
Median 1.0%

The overall median HIV prevalence among ANC attendants clinics is 1.0% (C.I: 1.65% - 0.35%) . However the HIV prevalence ranged from 0.7% (C.I. 1.67% - -0.27%) in Garowe to 1.4% (CI.2.75% - 0.05%) in Galkaio, while the overall mean prevalence is 1.0%.

3.1.3 HIV Prevalence among different age-groups

Table 2: Distribution of HIV prevalence by age group

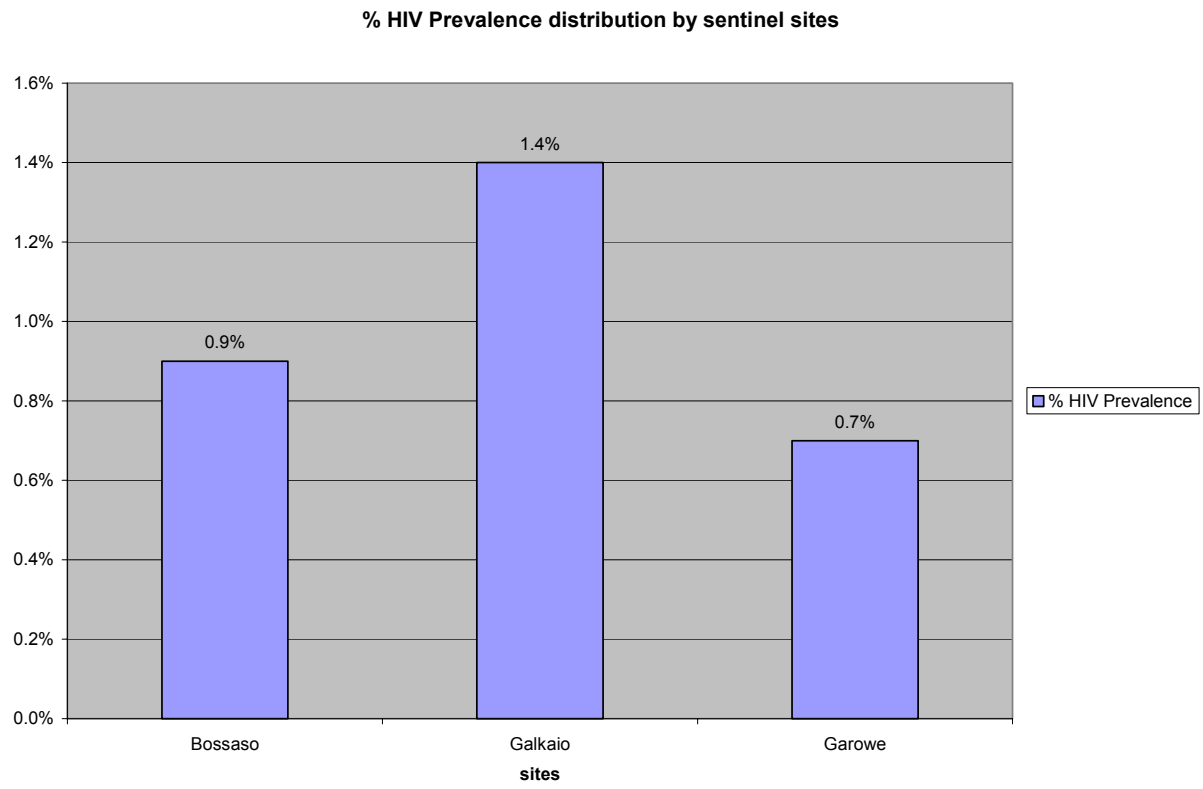
Age Group	No tested	No Positive	Percentage Positive
15-19yrs	97	1	1.0%
20 - 24 years	221	5	2.3%
25 - 29 years	204	0	0.0%
30 - 34 years	172	2	1.2%
35 - 39 years	134	1	0.7%
40 - 44 years	52	0	0.0%
> 44 years	17	0	0.0%
Total	897	9	1.0%

The HIV prevalence in the age group 15-24 years is 1.9%.
The HIV prevalence in this group is recognized as global indicator (UNGASS)

The HIV prevalence is highest among age group 20-24yrs, (2.3%) followed by 30-34years, (1.2%) and then followed by 15-19 years (1.0%).

3.1.4 HIV Prevalence by Sentinel sites

Figure 3: Distribution of HIV prevalence by sites



HIV prevalence was found to be highest in Galkaio, (1.4%) followed by Bossaso (0.9%), then followed by Garowe, 0.7%.

3.2 Syphilis Prevalence among antenatal care attendants

3.2.1 Syphilis Prevalence

Table 5: Overall syphilis prevalence

Testing	Number of respondents	No Positive	Percentage Positive
TPHA	**897**	**2**	**0.2%**
RPR	**897**	**2**	**0.2%**

The overall syphilis prevalence in Puntland is 0.2%.

STIs Prevalence among ANC attendants in Bosasso Central MCH

3.3 Gonococcal and Chlamydia Prevalence among asymptomatic ANC attendants in Bosasso Central MCH clinic

Table 7: Prevalence of asymptomatic STI

Asymptomatic STIs	Number tested	No positive	*% positive per swab*
Gonococcus **Urine** **Vaginal Swab**	 305 307	 0 0	 0% 0%
Chlamydia trachomatis **Urine** **Vaginal Swab**	 **305** **307**	 **0** **7**	 0% 2.3%

The gonococcus prevalence among asymptomatic women attending MCH clinic showed 0% while Chlamydia showed 2.3%. Chlamydia prevalence among the age group 15-24 is 5%; 15-19 years is 0.0%.

3. 4 HIV Symptomatic STD patients attending STIs clinics in Bossaso

A total of 513 blood samples were collected, including 447 samples from Bosasso Hospital out-patient unit and 66 samples from private clinic in Bosasso. The samples were tested for HIV and syphilis.
A total of 134 cervical swabs were collected and tested for Neisseria Gonorrhea and Chlamydia by Polymerase Chain Reaction (PCR) method.

3.4.1 HIV Prevalence among STIs attendants

Table 8: HIV prevalence among STD patients in Bossaso

Name of town	No tested	No Positive	Percentage Positive	Confidence Interval
Bossaso	513	4	0.8	1.57% - 0.03%

The HIV prevalence among STD patients attending the STI clinics was found to be 0.8% (C.I..1.57% - 0.03%)

3.4.2 HIV Prevalence among STD patients by Gender

Table 9. HIV prevalence among STD patients by gender

Sex	No tested	No Positive	Percentage Positive
Males	78	1	1.3%
Female	435	3	0.7%
Total	513	4	0.8%

The HIV prevalence was found to be highest among male STD patients (1.3%) than females, (0.7%). The variation of the data is influenced by the fact one site had exclusively women respondents.

HIV prevalence among STD Patients by sites

Name of site	No tested	No Positive	Percentage Positive
Bosasso Hospital	447	4	0.9%
Bosasso Private (Gyn. Clinic)	066	0	00
Total	513	4	0.8%

HIV by sex in Bosasso Hospital

Sex Distribution	No tested	No Positive	Percentage Positive
Male	78	1	1.7%
Female	435	3	0.7%
Total	513	4	0.9%

Prevalence of symptomatic STD

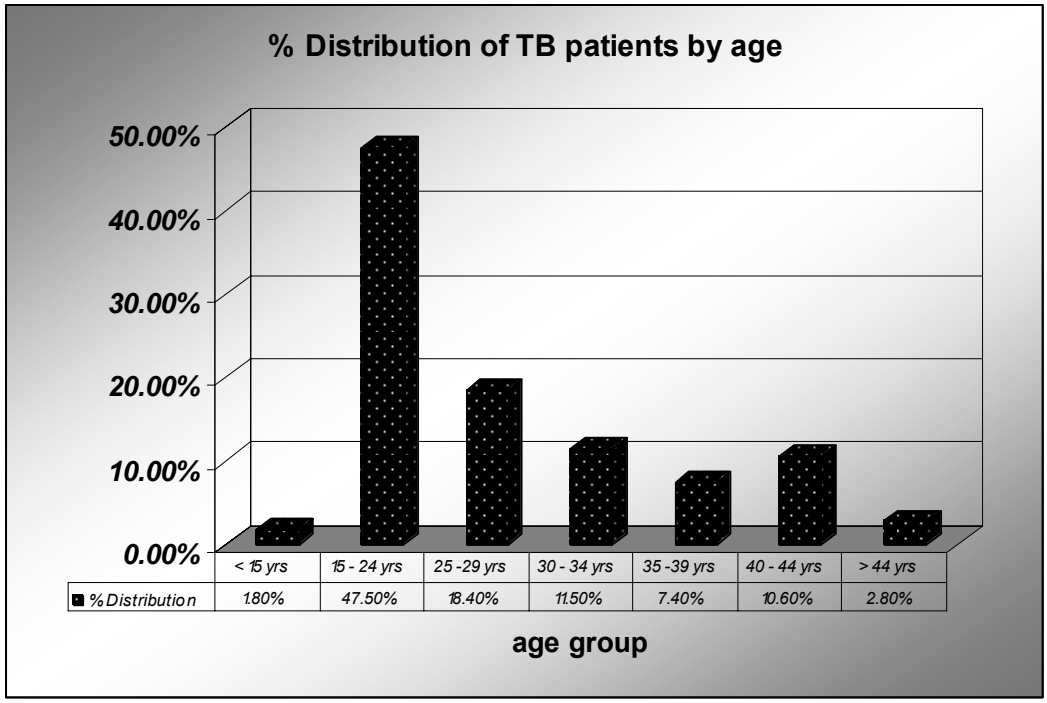
Symptomatic STI	Number tested	No positive	*% positive per swab*
Gonococcus **Cervical Swabs**	134	1 0	0.7% 0%
Chlamydia Trichomatis **Cervical Swabs**	**134**	**3**	2.2%
Gonococcus and Chlamydia	134	**4**	2.2%

3.5 HIV Sentinel Surveillance among patients attending TB Center in Bosasso

A total of 217 blood samples was collected from Bosasso TB centre and tested for HIV only.

3.5.1 Socio-demographic Characteristics of TB patients in Bosasso

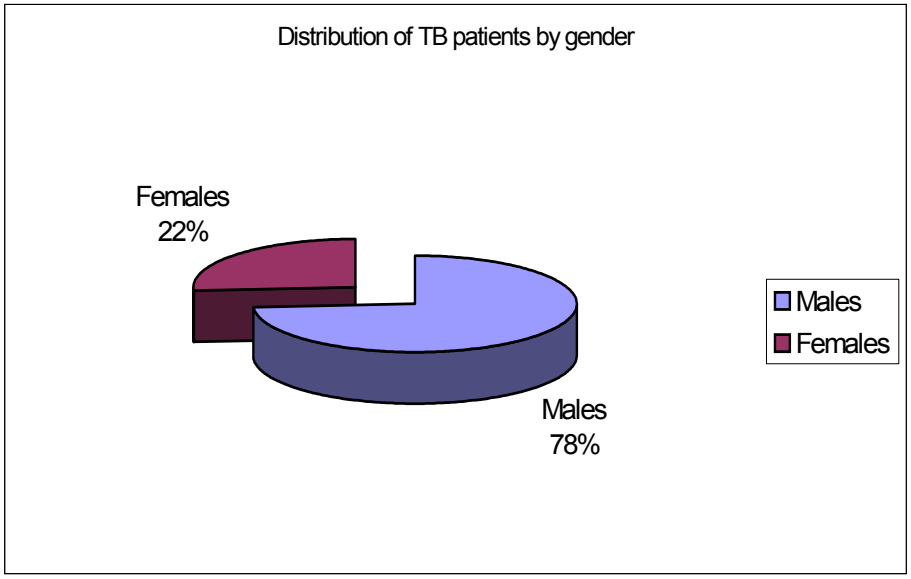
Distribution of TB patients by age group



Relatively more clients aged between 15-24 years (48%) participated in the survey than any other group. Less than 15 years is 1.8%, (18.4%) were from 25-29 years, 11.5% from 30-34 years, 7.4% from 35-39 years, 10.6% from 40-44 years and 2.8% from above 44 years.

3.5.1.1 Distribution of TB patients by gender

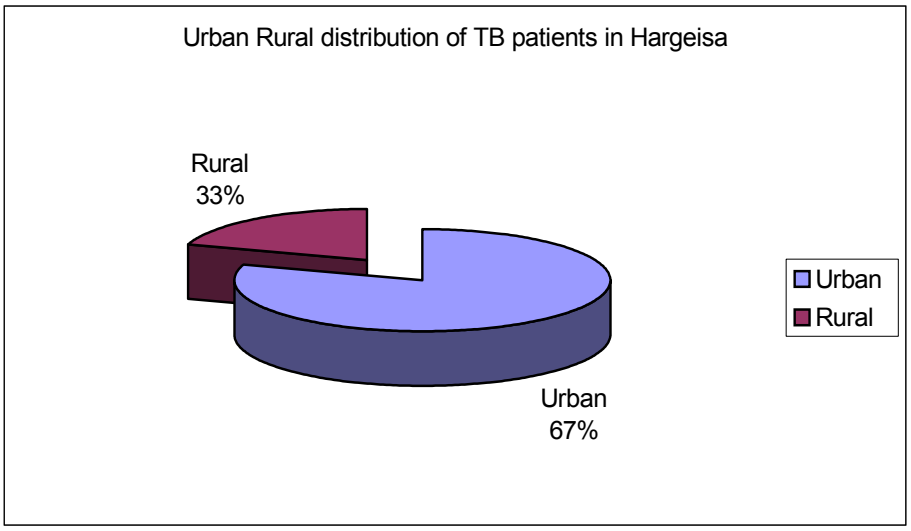
Figure 7 : Gender of TB patients in Bosasso



More males TB patients (78%) than females (26%) participated in the survey.

3.5.1.2 Distribution of respondents by living status

Figure 9: Living Status of TB patients in Bosasso



Sixty seven (67%) of the TB patients are from Bosasso while 33% are from rural area.

3.5.2 HIV Prevalence among TB patients

Table 10: Overall HIV prevalence among TB patients

No tested	No positive	% positive
217	12	5.5%

The overall prevalence showed 5.5%

3.5.3 HIV Prevalence by Gender among TB patients

Table 11: Distribution of HIV prevalence by Gender

Gender	No tested	No positive	% positive
Male	**169**	6	3.5%
Females	**48**	6	12.5%

The HIV prevalence was found to be highest among females.

Distribution of HIV prevalence among TB patients by age

Age Group	No tested	No Positive	Percentage Positive
< 15 years	**4**	**0**	**0.0%**
15 - 24 years	**103**	**5**	**4.9%**
25 - 29 years	**40**	**3**	**7.5%**
30 - 34 years	**25**	**2**	**8.0%**
35 - 39 years	**16**	**1**	**6.3%**
40 - 44 years	**23**	**1**	**4.3%**
> 44 years	**6**	**0**	**0.0%**
Total	**217**	**12**	**5.5%**

3.6 Behavioural Determinants of the HIV/AIDS Epidemic in Somalia

Based on UNICEF KABP studies in 2004 specific behavioural information have been generated to interpret the determinants of the epidemic locally. Even though this data is limited to specific zones but can give a bird's eye view of the causes of the transmission of HIV infection. Some of the indicators selected for the purposes of this report are as follows:

Table 12: Behavioural and treatment indicators

1. HIV Prevention Indicators and baseline information		
Indicators	**1999**	**2004**
1. % (most-at-risk populations) who received HIV testing in the last 12 months and who know the results		
1. males	1%[1]	
2. women		Nil
2. % of people Have ever taken HIV test	Nil	
1. Males		4.8%
2. Females		2.5%
3. Willingness to take a test	Nil	
1. males		28.9%
2. Females		16.0%
4. % of sexually active male ever used condom 15-24yrs	Nil	12.7
5. % of sexually active female ever used condom 15-24yrs		5%
6. of (most-at-risk population(s)) who both correctly identify two ways of preventing the sexual transmission of HIV		
1. Male	Nil	Nil
2. Female	1.5	Nil
7. % of (most-at-risk population(s)) who both correctly reject major misconceptions about HIV transmission		
1. Male		

[1] UNICEF End of Decade Multiple Indicator Cluster Survey, 1999

2. Female		
	Nil	
	3.0%	
8. % of people willing to care for family with AIDS		68.9%
9. Median age at first sex	Nil	
1. Females		15yrs
2. Males		17yrs
2. AIDS Treatment, Care and Support		
10. Number of People on ART	Nil	11[2]

From anecdotal evidence as shown by the above tables, there is limited data in the country on HIV/AIDS response indicators. From the data above, there is low knowledge, low protective behaviours and high prevailing stigma. WHO in collaboration with UNAIDS, DFID and UNDP are developing the strategic plan of action on the Integration of prevention, treatment, care and support for those living with HIV/AIDS.

[2] From anecdotal evidence (program monitoring data)

CHAPTER FOUR: DISCUSSIONS

Due to the huge logistic, security, high capacity needs, and existing complex emergency situation for conducting sero-prevalence survey in Puntland, a lot of efforts was put in place in terms of monitoring, supervising the operation and for quality assurance.
The survey used rapid tests for HIV testing, two tests of different principals one with high sensitivity and the other with high specificity were used. All positive sera and 10% of negatives were tested by Eliza method in Nairobi. The indeterminate cases were further tested by Western Blot. For syphilis testing RPR screening kit and TPHA for confirmation were used. PCR method were used for detecting Gonorrhea and Chlamydia in urine, vaginal and cervical swabs.
The median HIV prevalence in Puntland showed (0.9%), while the mean prevalence is 1.0%. Galkaio showed the highest HIV prevalence of 1.4%. STIs prevalence among ANC attendants is 2.3% when aggregated by age it is 5% among the age group 15-24. This data suggests that Puntland can be on verge of generalized infection. It is important to perceive HIV/AIDS as a multiple epidemic as sexual behavioral practices may not be the same in all sites. Sentinel results can be applied confidently to target interventions to the selected population and site surveyed.

Sentinel results showed sentinel variations, highest in Galkaio (1.4%) and lowest in Garowe (0.7%). No simple explanations can be offered for the variations observed. Possible factors that may have accounted for these differences include the following:

- Galkaio is a town on the crossroads between Somaliland Central South/Somalia.
- Low access to information and other interventions
- Low educational level

Further high risk group behavioural sentinel surveys and other operational research is needed to explain the extent of the variations in the HIV transmission within the sentinel sites.

The HIV Prevalence by age groups among ANC attendants ranged from 0% in the age >39 years and 25-29 years, 1.0% among age group 15-19yrs. HIV prevalence in young age group 15-19 years, is a cause of great worries and the need for immediate and vigorous response targeting young people. This age group is very critical as it is used as a proxy for incidence globally. HIV among the age 15-24 years is 1.9% which is the global indicator for monitoring HIV infection. The HIV prevalence among women in reproductive age groups 15-49 years show the potential and possibility of mother to child transmission going on in Puntland. There is need to engage the communities to advocate for Prevention of Mother to Child Transmission program implementation as quickly as quickly as possible.
It is possible to keep this epidemic in its present status and even lower through proven practical strategies and innovative approaches that suit Puntland context.

The HIV prevalence among blood donors ranged from (%) since 1995 to () in 2004.
Syphilis prevalence among ANC attendants was found to be 0.2%. This is low prevalence.

The HIV prevalence among TB patients of 5.5% confirms the emerging opportunistic infections. This creates a new challenge in TB management. The TB prevalence is an indication that an integrated prevention, treatment, care and support intervention is over due in Puntland.

Other evidence of STIs as a driving factor of this epidemic was shown by the prevalence of asymptomatic Chlamydia infection among ANC attendants is 2.3%. If we aggregate that by age groups it is 5% among 15-24 years. This demonstrates the need to review the Syndromic management algorithms.

Existing challenges are to ensure that the epidemic remains this at this level or further reduced. From anecdotal evidence, there are currently high vulnerability factors in the Puntland extensive mobility, poverty, literacy, poor infection control and malnutrition. To successfully curb this epidemic the interventions must be actively and aggressively instituted utilizing the Sero-prevalence surveillance data.

CHAPTER SIX: CONCLUSION AND RECOMMENDATION

This report presents detailed information about the prevalence of HIV/Syphilis in Puntland in 2004. The results of this survey are presented by sentinel sites. There have been variations in the of HIV prevalence between the different ANC attendants sentinel sites.

The median prevalence of HIV among ANC attending MCH clinics in 2004 was (0.9%). One site in Puntland showed HIV prevalence rate of more than 1%. Syphilis prevalence was found to be 0.2% among ANC attendants. In addition to HIV/Syphilis surveillance STIs prevalence study was conducted among ANC attendants and STIs patients.

RECOMMENDATIONS

The following recommendations are hereby made:

1. **Map out risk factors among vulnerable groups**: This necessitates planning for KABP surveys targeting the respective groups.
2. **Conduct HIV/Syphilis Sero-prevalence surveillance among vulnerable groups and conduct STIs prevalence studies**: Beside the KAPB surveys, there will be need to conduct HIV surveillance to form baseline information for vulnerable groups.
3. **Biennial HIV Surveillance among ANC and TB patients**: Since surveillance is the continuous monitoring of a disease situation over a period of time, there will be need to repeat this exercise on two yearly basis.
4. **HIV Projections and Estimation**: The HIV prevalence results among ANC attendants should be utilized to make estimates of the national prevalence of HIV/AIDS and future projections. This must be done through consensus building process and through consultation with global and national partners.
5. **Scale-up Prevention and Treatment Intervention:** We must increase our commitment to scale-up preventive interventions especially in places where the HIV prevalence is less than 1%. The urgent implementation of the proposed Integrated Prevention, Treatment, Care and Support Action Plan, will go along way to reduce the incidence of infection alongside other prevention measures. Of high importance is the urgent need for the adaptation of the protocols, guidelines as well as management of STIs. Finally the implementation of prevention of mother to child transmission (PMTCT) should be instituted without delay. We must also ensure that all transfused blood is safe.
6. **Scale up of** Treatment **of Tuberculosis**: The TB centers must be used to provide treatment to the dual infection of TB and HIVAIDS using the DOTS strategy and ART.