ANTIGUA AND BARBUDA
OPERATIONAL MANUAL FOR
CASE BASED SURVEILLANCE
OF HIV, SEXUALLY
TRANSMITTED INFECTIONS
AND TUBERCULOSIS

A description of the roles, responsibilities and procedures to be followed
for case-based surveillance of selected communicable diseases

Ministry of Health, Social Transformation and Community Affairs
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ABBREVIATIONS

AIDS  Acquired Immunodeficiency Syndrome
ART  Antiretroviral Treatment
CARPHA  Caribbean Public Health Agency
CBS  Case-based Surveillance
CEHO  Chief Environmental Health Officer
CMO  Chief Medical Officer
DPHC  Director of Primary Health Care
DMO  District Medical Officer
EHO  Environmental Health Officer
HMD  Hospital Medical Director
HIV  Human Immunodeficiency Virus
HIU  Health Information Unit
HPC  Health Promotion Coordinator
HSC  Hospital Service Coordinator
HTC  HIV Testing and Counselling
IDC  Infectious Disease Clinic
M&E  Monitoring and Evaluation
MoH  Ministry of Health
NE  National Epidemiologist
NAC  National AIDS Committee
NHPC  National HIV/STI/TB Programme Coordinator
NGO  Non-Governmental Organization
NHRP  National HIV & AIDS/STI/TB Response Programme
NHSP  National HIV Strategic Plan
NPHSRT  National Public Health Surveillance and Response Team
OECS  Organization of the Eastern Caribbean States
PCR  Polymerase Chain Reaction
PLHWA  Persons living with HIV and AIDS
PMTCT  Prevention of Mother to Child Transmission
PNO  Principal Nursing Officer
RPR  Rapid Plasma Reagin
STI  Sexually Transmitted Infections
SPC  Special Program Coordinator
SEHO  Senior Environmental Health Officer
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1. INTRODUCTION

HIV and AIDS as well as Sexually Transmitted Infections and tuberculosis are priority issues for the Ministry of Health as well as for CARICOM, the region of the Americas and the world at large. In the absence of a vaccine for it has become increasingly clear that the approach that countries must take for HIV prevent and control involves identifying and getting persons living with HIV into treatment and care at an early stage of the infection and well as tracking high risk behaviours in key populations and devising appropriate interventions targeted at the drivers of the epidemic.

Case surveillance (or Case-based surveillance (CBS)) involves generating a report for every person who tests positive for HIV, a Sexually Transmitted Infection (STI) or tuberculosis (TB) and as part of second generation surveillance for HIV and AIDS has been recognised a cost-effective way to meet these objectives since it relies on strengthened routine health information systems and channels information to those who need to make informed decisions at local, national, and international levels. The outputs from several key regional meetings have been incorporated into this document so as to ensure that the outputs are consistent with regional and international standards. The data collection strategy is consistent with the key HIV disease sentinel events identified in the continuum of care (see Appendix 1) as well as recommendations for HIV case surveillance from PAHO and from the Caribbean Technical Working Group on HIV/STI Surveillance. Key outputs are represented by the indicators in Appendix 2 agreed by the PAHO Regional Consultation on HIV Epidemiologic Information held in Panama City on 7-9 November, 2012.

This manual lays out the structure and governance of the system for HIV, AIDS and STI CBS in Antigua and Barbuda as well as the responsibilities and procedures required for the outputs that the system generates. The use of information and communication technology is promoted to enhance the accuracy and speed of access to relevant information. This system will also ultimately be adapted for the surveillance of other key communicable and non-communicable disease entities thus strengthening the overall
health system and its ability to address health challenges in a more efficient, cost-effective and sustainable manner consistent with government’s efforts to strengthen the use of information and communication technology as part of its e-government strategy.

2. BACKGROUND

The following information represents the context within which CBS for HIV, STIs and TB has been introduced in Antigua and Barbuda.

2.1. Mission Statement

2.2. Epidemiological Data

The first case of HIV was diagnosed in Antigua and Barbuda in December 1985. Since then 966 cases have been identified up to the end of 2012. There have been 237 deaths among these individuals due to AIDS-related illnesses during the same period.

Figure 1: Trend in HIV Infections and HIV-related Deaths in Antigua and Barbuda, 1985-2012

Source: National AIDS Program
These figures represent only those cases that have been reported to the Ministry of Health. Nevertheless the trend in cases supports the need for intensified efforts at prevention based on improved information about the drivers of the epidemic – much of which can be obtained from CBS.

2.3. Structure of the Healthcare System

The structure of the public health care delivery system in Antigua and Barbuda includes nine community clinics (8 in Antigua and 1 in Barbuda) and 18 satellite clinics.

The health team in each health district has an officer (usually the Community Health Nurse or the Family Nurse Practitioner) assigned to conduct surveillance activities. These officers are responsible for collecting, collating and transmitting surveillance data to the national level according to the reporting schedule (usually on a weekly, monthly or quarterly basis). The National Surveillance Programme for HIV, AIDS, STI and TB will utilize the primary health care structure for programme implementation. The Nurse Epidemiologist will work with the district health teams, the Mount St. John Medical Centre and the private sector under the supervision and guidance of the National Epidemiologist to ensure that surveillance activities are conducted in a timely and accurate manner. The Nurse Epidemiologist will liaise with the Monitoring and Evaluation Officer of the NHRP as well as the Infectious Disease Clinic to ensure that reports are produced and disseminated on time.

Since 2006 efforts to improve the infrastructure for information and communication have been accelerating and a formal assessment of the current situation was conducted in 2012 using the Health Metrics Network (HMN) tool. A Technical Working Group has been established in 2013 and a strategic plan of action for strengthening the health information system is being finalized. These developments are important for moving towards improved information availability and accuracy for managing the challenges of the health sector including HIV, STIs and TB.
HIV Case based Surveillance (CBS) is critical in generating strategic information to improve the quality of care of persons living with HIV and to enhance program implementation and planning. CBS captures information on individuals infected with HIV, STI or TB from diagnosis to death. This surveillance manual provides the framework necessary for the effective collection, collation, analysis and dissemination of HIV/STI and TB data. It also provides a framework for strengthening surveillance of other disease entities in the public and private sectors. CBS will take advantage of improvements in the health information system.

2.4. Policy and Legal Framework

CBS operates within the same legal framework that governs healthcare in Antigua and Barbuda. The key laws and regulations are those that apply to communicable diseases, the operation of health care facilities and those that protect confidentiality and privacy of information. These laws facilitate the collection of data related to communicable diseases from health care facilities including the private sector. These include:

- Census and Statistics Act
- Medical Act
- Public Health Act

A policy for Information and Communication Technology (ICT) has been drafted.

3. THE HIV/STI/TB CASE SURVEILLANCE SYSTEM

This surveillance system has a goal and objectives to guide its operation as follows:

3.1. Goal

To provide quality information for evidence-informed HIV & AIDS, STI and TB policy decision making and programming; thereby minimizing the impact and reducing the spread of HIV, other sexually transmissible infections and tuberculosis, while improving patient outcomes in Antigua and Barbuda.
3.2. Objectives

The objectives of the CBS are to:

- Effectively monitor and assess trends in HIV incidence and prevalence, AIDS and HIV-related morbidity and mortality
- Monitor sexual behaviours and practices driving the HIV/AIDS epidemic in Antigua and Barbuda
- Characterize the key populations affected by HIV and determine risk factors for acquiring the infection
- Measure coverage and quality of care of persons living with HIV/AIDS, other STIs and TB
- Provide the relevant data for guiding targeted prevention, treatment and care interventions and evaluating the impact of these interventions
- Determine the progression of HIV to AIDS and the impact of ARV
- Monitor early warning indicators of drug resistance

4. HIV/STI/TB ORGANIZATIONAL CHART

The organizational chart for CBS includes the National HIV/STI/TB Response Programme (NHRP) and the Health Information Unit (HIU), the two units which will have prime responsibility for HIV/STI/TB surveillance in Antigua and Barbuda. However there are a number of players at primary and secondary care levels who are integrated into the system. This is illustrated in Figure 1 below. The private and non-government sectors will report to the NHRP on clinical issues and to the HIU on statistical matters.
Figure 2: Ministry of Health Organizational Chart
5. DATA REPORTING PROCEDURES

Table 1 outlines the reporting structure for the organizations and institutions involved in reporting on HIV/STI/TB surveillance.

**Table 1: Reporting Relationships and Frequencies for Case-based Surveillance**

<table>
<thead>
<tr>
<th>Reporting agency</th>
<th>Reporting person</th>
<th>Type</th>
<th>Who to Report to</th>
<th>When to Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSJMC Laboratory</td>
<td>Research Laboratory Technologist</td>
<td>Line listing</td>
<td>Requesting Physician and NHRP</td>
<td>Monthly</td>
</tr>
<tr>
<td>Private Laboratories</td>
<td>Director</td>
<td>Line listing</td>
<td>Requesting Physician</td>
<td>Monthly</td>
</tr>
<tr>
<td>Primary Care</td>
<td>District Nurse</td>
<td>Case-based report</td>
<td></td>
<td>Monthly</td>
</tr>
<tr>
<td></td>
<td>PHN</td>
<td>Case-based report</td>
<td>SPHN</td>
<td>Monthly</td>
</tr>
<tr>
<td>HTC Providers (incl. District Nurse Midwives)</td>
<td>Case-based report</td>
<td>PHN</td>
<td></td>
<td>Monthly</td>
</tr>
<tr>
<td>STI Clinic</td>
<td>Clinic Nurse</td>
<td>Case-based Report</td>
<td>SPHN</td>
<td>Monthly</td>
</tr>
<tr>
<td>ANC and Maternity</td>
<td>PMTCT Coordinator</td>
<td>Case-based report</td>
<td>National Epidemiologist</td>
<td>Monthly</td>
</tr>
<tr>
<td></td>
<td>HTC Coordinator</td>
<td>Case-based report</td>
<td>National Epidemiologist</td>
<td>Monthly</td>
</tr>
<tr>
<td>OB/Gyn</td>
<td>Ward Sister</td>
<td>Case-based report</td>
<td>NHRP/PMTCT</td>
<td>As needed</td>
</tr>
<tr>
<td>Births and Deaths Registry</td>
<td>Registry Officer</td>
<td>Line listing</td>
<td>Health Information Department</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Private Clinicians</td>
<td>Private Clinicians</td>
<td>Case-based report</td>
<td>NHRP</td>
<td>As needed</td>
</tr>
<tr>
<td>NGO</td>
<td>NGO member</td>
<td>Case-based report</td>
<td>NHRP</td>
<td>As needed</td>
</tr>
</tbody>
</table>

Reporting obligations within the surveillance system extend to regional and international partners as outlined in Figures 3 below.
Data is received directly from the national laboratory, health institutions, general administration and service delivery points to the Health Information Unit. Routine disease surveillance of communicable diseases, non-communicable diseases and mortality is continuous and data is sourced from the registry, national laboratory and health institutions. Data is received primarily on an annual basis (with the exception of disease surveillance data and HIV/AIDS and STI Programme data which is collected weekly, monthly and annually).

Private sector data is instrumental in providing a holistic picture of the Nation’s health. Currently the private-public partnership is weak resulting in poor quality data from the private sector. But, efforts are being made to strengthen the link by implementing the Health Systems 20/20 Initiative – Strengthening Health Outcomes through the Private Sectorxii.

After the Health Information Unit has converted the raw data into readily digestible information for reporting, policy, programming and decision making, data will be fed-back to all programmes and departments that provide the data as well as the Health Planning Unit, the Chief Medical Officer and the Permanent Secretary. Information will also be sent to the Minister of Health and the Prime Minister.

Outside of the MOH, information will be shared at inter-ministerial levels, such as with the Central Statistical Office, other line ministries, and with regional, international and funding agencies that require routine reports.

The Health Information Unit and the National HIV & AIDS/STI and TB Response Programme (NHRP) are the two entities which will be responsible for HIV/STI/TB Surveillance in Antigua and Barbuda.
Figure 3: Reporting Chain and Data Flow

- **WHO**
- **CARPHA/PAHO**
- **Relevant Stakeholders***

**Reports**

**Regional Level**

- **9 Health Centres, 18 Satellite Clinics**
- **HIU, NHRP**

**Central Level**

- **HIU, NHRP**

**Health District Level**

- **CARPHA/PAHO**
- **DNMW: District Nurse Midwife**
- **PCN: Primary Health Care Nurse**
- **RHC: Rural Health Centre**
- **HIP, NHRP**
- **Relevant Stakeholders***

*Ministry of Health, Health Planners (Stakeholders of HIV Reports, National AIDS Programme, other Ministries, NGO’s)

**Monthly Disease Report, Quarterly and annual HIV/AIDS report, annual TB report, annual CD**
6. ROLES AND RESPONSIBILITIES FOR PROGRAMMES AND PERSONNEL INVOLVED IN HIV SURVEILLANCE

For any surveillance system to function effectively and efficiently there must be clearly defined roles and responsibility for all the actors in the system. For HIV/STI/TB CBS these are defined as follows:

6.1. Laboratory Personnel:

- Ensure the samples are tested using approved algorithms (see Appendix 6) and results made available in a timely manner to the requesting Health Provider and Nurse Epidemiologist
- Ensure all codes on samples and requisition forms are accurate and correspond
- Ensure that all results are entered into the Laboratory Information System and ensure that the data is complete and accurate
- Ensure that all case report forms are completed by Blood Bank Officer for blood donors who test positive and return these forms to the Chief Laboratory Technologist, and subsequently to the Nurse Epidemiologist (HIU) and the Infectious Diseases Clinic.
- Maintain confidentiality and security of ALL surveillance data (see Section 7.0 for details)
- Ensure weekly reports of HIV, STI and TB positive cases as well as reports on drug resistance, CD4 counts, viral load and PCR to the National HIV&AIDS/STI/TB Program and Epidemiology and Information Unit

6.2. Health Information Unit Staff

6.2.1. National Epidemiologist:

The roles and responsibilities of the National Epidemiologist include

- Liaise with the National HIV/STI/TB Response Programme Coordinator (NHRPC) to advocate for adequate resources for HIV/STI/TB case-based surveillance
- Review all reports from the HIV Epidemiologist
• Assist with training in surveillance

• Ensure that monitoring and evaluation of the HIV/STI/TB Surveillance Programme is conducted including a quarterly review of data quality

• Assist the HIV/STI/TB Surveillance Programme in maintaining a complete and accurate HIV/STI/TB surveillance database which is secure and has access to limited authorized personnel only

• Analyze, interpret and disseminate HIV/STI/TB surveillance data at national, regional and international level including an annual HIV & AIDS/STI/TB surveillance report

• Liaise with the NHRP Coordinator to prepare national regional and global reports

• Share all relevant statistical reports with NHRP

• Ensure that HIV/STI/TB surveillance data are channeled into appropriate decision-making forums

6.2.2. Nurse Epidemiologist

• Maintains an active liaison and ensures that all Case Report Forms are completely and accurately filled by data providers.

• Works with data providers to ensure that data quality is maintained at a high standard through trainings as necessary.

• Enters complete data from Case Report Forms into database, generates and distributes reports on a timely basis.

• Conduct follow-up investigations on cases of epidemiologic importance

• Liaises with officers in the NHRP to monitor and evaluate surveillance programme.

• Ensures that the Surveillance System is maintained with the most up-to-date standards as defined by CARPHA

• Ensures that databases are functional and meet surveillance system reporting requirements

• Ensures that security standards are implemented and maintained
• Reviews and makes recommendations for upgrades to security standards as necessary and on an annual basis

6.2.3. Biostatistician/ Statistical Officer
• Liaise with Registry and Central Statistical Office
• Perform statistical analysis on all collected data.
• Assists in generating Annual Surveillance Reports.
• Geographic information system: provide data in a geographical format
• Ensure overall data back-up in at least 3 places

6.2.1. Data Entry Clerk
• Ensure accurate entry of data from Case Report Forms into SVGHIS database within two weeks of receipt of HIV/STI/TB Case Report Forms (HCRFs)

6.3. Information Technology Staff

6.3.1. Database Administrator
• Ensure the optimal function of the IT database.
• To assist in database design and administration.
• To assist with security of HIV data.

6.4. National HIV and AIDS Response Programme Staff

6.4.1. Senior Medical Officer of Infectious Diseases
• In collaboration with the National Epidemiologist ensures that adequate resources are allocated to the HIV/AIDS/STI Surveillance Programme.
• In collaboration with National Epidemiologist reviews HIV/AIDS/STI surveillance reports.
• In collaboration with the National Epidemiologist ensure that surveillance data is utilized in policy development and programme planning.
• Discusses surveillance data with the clinical care team.
- Liaises with the National Epidemiologist to prepare international and regional reports on programme indicators
- Shares all relevant statistical reports with National Epidemiologist

6.4.2. PMTCT Coordinator
- Ensures that all Case Report Forms related to PMTCT Programme (including antenatal clinic clients) are completed and compiled in an annual report to the NHRPC
- Ensures that all HIV positive children are followed up and reported on at least annually
- Ensures that all relevant data is forwarded to the Nurse Epidemiologist
- Assists clinicians or HTC providers in completing Case Report Forms where necessary
- Ensures that training in surveillance activities is included in orientation of new HTC providers
- Assists Nurse Epidemiologist in monitoring surveillance activities and maintaining appropriate standards

6.4.3. VCT Provider
- Ensure that case reporting forms are completed according to established quality standards.
- Ensure that all case report forms are submitted to Nurse Epidemiologist and STI physician/CCC within 7 days of confirmation of diagnosis

6.4.4. Social Worker
- Complete intake form to assess the social/medical/financial needs of patients.
- Complete patient psychosocial assessment form.

6.4.5. Psychologist
- Assists clinicians or HTC providers in completing Case Report Forms where necessary
- Ensures that training in surveillance activities is included in orientation of new HTC providers
• Assists Nurse Epidemiologist in monitoring surveillance activities and maintaining appropriate surveillance standards

6.4.6. Clinical Care Nurse
• Ensures that all Case Reports (new and updates) are accurately completed and forwarded to the Nurse Epidemiologist
• Ensures that all data related to the surveillance activities (paper forms or electronic database) are handled in accordance with established standards for confidentiality (see Section 7.0)
• Ensures that Case Report Forms from the hospital (MCMH) are completed and forwarded to the HIU within one week of confirmation of diagnosis
• Assist clinicians in completing Case Report Forms where necessary
• Collects Case Report Forms and forwards to HIU

6.4.7. Clinical Care Doctor/Coordinator
• Ensures that accurate and complete clinical data is maintained for all patients and is handled in accordance with established standards for confidentiality
• Liaises with Clinical Care Nurse to ensure that Case Report Forms are accurately and completely filled and submitted to Nurse Epidemiologist/Epidemiologist and NHRP within one week of completion
• Ensures that Surveillance Programme is kept abreast of changes or updates in clinical management especially with respect to diagnosis and staging of patients
• Reviews surveillance reports and makes adjustments in Clinical Care Programme accordingly

6.4.8. Monitoring and Evaluation Officer/Coordinator
• Liaises with Health Information Unit (National Epidemiologist, Biostatistician and/or Nurse Epidemiologist) as appropriate to ensure that the appropriate data is being collected and fed into national monitoring and evaluation reports.
• Reviews surveillance reports with Nurse Epidemiologist, National Epidemiologist and NHRP Coordinator and assists in the development of programmes to address areas needing intervention.

• Ensures that surveillance data is channeled into the relevant monitoring and evaluation reports in as per prescribed timelines

• Ensures confidentiality of M&E data

• Conducts training updates

6.5. Hospital Staff

   6.5.1. Ward Sisters

   • Liaise with ward doctors and HTC providers to ensure that Case Report Forms are completed and then forwarded to Infection Control Officer/Nurse

   6.5.2. Departmental Sisters

   • Liaise with ward sister to ensure case report forms are completed and forwarded to Clinical care nurse at the infectious disease clinic

6.5.3. Doctors

   • Offer an HIV test to all clients and conduct test in accordance with national guidelines

   • Ensure that Case Report Forms are filled out and forwarded to the Infection Control Officer/Nurse within 48 hours of confirmation of diagnosis

6.5.4. Infection Control Officer/Nurse

   • Ensures that Case Report Forms are completely and accurately filled and forwarded to the Nurse Epidemiologist

   • Maintain a log of Case Report Forms collected, submitted and outstanding
6.6. Primary Health Care Staff

6.6.1. District Medical Officers

- Ensure that Case Report Forms are completely and accurately filled and forwarded to the Nurse Epidemiologist, the Clinical Care Coordinator and NHRP within 48 hour of confirmation of diagnosis.

6.6.2. Senior Public Health Nurse

- Ensure that the forms are collected from the DMOs, CHNs and FNPs and submitted to the Nurse Epidemiologist, Clinical Care Coordinator and NHRP in a secure manner.

6.6.3. Community Health Nurses

- Ensure that all pregnant women are screened for HIV and STIs on booking and at 32 weeks gestation.
- Assess reports from DN for accuracy and completeness and submit timely reports to the CCHN Office or Epidemiology Unit.
- Conduct contact investigations in accordance with national guidelines and submit reports within one week of completion of the investigation.
- Ensure that Case Report Forms are completed and forwarded to the SPHN on a weekly basis.
- In collaboration with the FNP maintain district database/registry of all cases of HIV&AIDS, STI and TB including forms completed, submitted and outstanding.

6.6.4. Family Nurse Practitioners

- Ensure that Case Report Forms are completed and forwarded to the Nurse Epidemiologist and Clinical Care Coordinator.
- In collaboration with the CHN maintain district database/registry of all cases of HIV & AIDS, STI and TB completed, submitted and outstanding.
6.6.5. District Nurses (Registered Nurse/Certified Midwife)

- Ensure that all cases of HIV & AIDS, STI and TB are reported within 48 hours of confirmation of results
- Assist with completion of the Case Report Form as required
- Provide adherence and other information as required
- Offer an HIV test to all clients and conduct test in accordance with national guidelines
- Ensure that all pregnant women are screened for HIV and STI
- Assist with contact investigation and ensure that the report is submitted within 1 week of completion to supervisor

6.6.6. Pharmacist

- Provides information on availability (including forecasting) and use of ARV and other drugs used for HIV, STI and TB treatment including information on scheduled pick-ups, stockouts and patient adherence

6.7. Private Sector/Non-Government Organizations

6.7.1. Laboratory Director

- Ensure that HIV Laboratory Testing Data Forms are properly completed and submitted to the HIU on a monthly basis.

6.7.2. Pharmacy Manager

- Ensure that all ARV Pharmacy Dispensing Registers are submitted to the HIU on a monthly basis.

6.7.3. VCT Provider

- Ensure that case reporting forms are completed according to established quality standards.
- Ensure that all case report forms are submitted to Nurse Epidemiologist and STI physician/CCC within 7 days of confirmation of diagnosis
7. DATA SECURITY AND CONFIDENTIALITY PROCEDURES

7.1. Guiding Principles

These guidelines have been adapted from the CDC’s *Technical Guidance for HIV/AIDS Surveillance Programme, Volume III: Security and Confidentiality Guidelines*:

1. HIV surveillance information and data will be maintained in a physically secure environment.
2. Electronic HIV data will be held in a technically secure environment, with the number of data repositories and individuals permitted access kept to a minimum.
3. Individual surveillance staff members and persons authorised to access case-specific information will be responsible for protecting confidential HIV surveillance information and data.
4. Security breaches of HIV surveillance information or data will be investigated thoroughly and sanctions imposed as appropriate.
5. Security practices and written policies will be continuously reviewed, assessed and as necessary changed to improve the protection of confidential HIV surveillance information and data.

7.2. Procedures

All aspects related to HIV&AIDS, STI and TB data management procedures are subject to the highest level of confidentiality where only HTC providers, clinicians, the Coordinator of the National HIV/AIDS Program, the Coordinator of the Prevention of Mother to Child Transmission Program, staff of the Infectious Diseases Clinic, the Laboratory Superintendent, the Blood Bank Technologist, the pharmacists, the Nurse Epidemiologist, the National Epidemiologist and the clinical care team may be aware of an individuals’ HIV/AIDS status. In order to facilitate to address the issue of confidentiality the following principles should be adopted by all Health Providers who are directly involved in reporting and handling of all HIV/AIDS information:

- All case reporting forms should be sealed and properly addressed to the appropriate receiving officers (Nurse Epidemiologist, Clinical Care Coordinator and NHRP)
- HIV Surveillance information and data will be maintained in a physically secure environment at all times

- Electronic HIV Surveillance data will be held in a technically secure environment (password protected, if possible encrypted), with a limited number of individuals having access to this data

- Individual surveillance staff members and persons authorized to access case-specific information will be responsible for protecting confidential HIV Surveillance information and data

- All persons directly involved in HIV/AIDS Surveillance and all new staff (including volunteers, interns and researchers) will sign the Ministry of Health confidentiality agreement (on deed paper in front of the Commissioner of Oaths) as part of terms of engagement. (Please see Appendix 3)

- Security breaches of HIV Surveillance information or data by staff and other surveillance team members will be investigated thoroughly, and sanctions imposed as appropriate

- The security practices and written confidential agreements will be continuously reviewed by various stakeholders and adapted when necessary to improve the protection of confidential HIV Surveillance data

All persons involved in HIV/AIDS surveillance are bound by these policies, even upon resignation, termination, or completion of their activities

### 7.3. Data Release Policy

The Chief Medical Officer (CMO) is the official spokesperson of the Ministry of Health and the National Epidemiologist the custodian of health information. To ensure the accuracy of data and to preserve the confidence in the surveillance system, the release of all HIV related data must be approved by the CMO or the National Epidemiologist
8. SURVEILLANCE CASE DEFINITIONS FOR HIV INFECTION AND REPORTABLE EVENTS

8.1. WHO Case Definitions for HIV Infection:

The following case definitions and classifications have been adopted from the WHO:

8.1.1. Adults and children 18 months or older:

- Positive HIV antibody testing (rapid or laboratory-based enzyme immunoassay) confirmed by a second HIV antibody test (rapid or laboratory-based enzyme immunoassay) relying on different antigens or of different operating characteristics. and/or;

- A positive virological test for HIV or its components (HIV-RNA or HIV-DNA or ultrasensitive HIV p24 antigen) confirmed by a second virological test obtained from a separate determination.

8.1.2. Children younger than 18 months:

- Positive virological test for HIV or its components (HIV-RNA or HIV-DNA or ultrasensitive HIV p24 antigen) confirmed by a second virological test obtained from a separate determination taken more than four weeks after birth.
  - Positive antibody testing is not recommended for definitive or confirmatory diagnosis of HIV infection in children until 18 months of age.

Table 2: WHO clinical classification of established HIV-infection

<table>
<thead>
<tr>
<th>HIV-associated symptomatology</th>
<th>WHO Clinical Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asymptomatic</td>
<td>1</td>
</tr>
<tr>
<td>Mild symptoms</td>
<td>2</td>
</tr>
<tr>
<td>Advanced symptoms</td>
<td>3</td>
</tr>
<tr>
<td>Severe symptoms</td>
<td>4</td>
</tr>
</tbody>
</table>
Table 3: Definitions and Stages of HIV Infection

<table>
<thead>
<tr>
<th>Stage</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV infection (all clinical stages)</td>
<td>All persons newly diagnosed with HIV, regardless of clinical stage or immunologic status</td>
</tr>
<tr>
<td>Advanced HIV infection</td>
<td>WHO clinical stages 3 or CD4 count &lt;350</td>
</tr>
<tr>
<td>AIDS case</td>
<td>WHO clinical stage 4 or CD4 count &lt;200.</td>
</tr>
<tr>
<td>AIDS Death or AIDS related-death</td>
<td>Deaths of individuals with AIDS or AIDS related-death</td>
</tr>
</tbody>
</table>

Table 4: WHO Case Definition for Advanced HIV Infection and AIDS

<table>
<thead>
<tr>
<th>Clinical criteria for diagnosis of advanced HIV disease and AIDS in adults and children with confirmed HIV infection:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presumptive or definitive diagnosis of any stage 3 or stage 4 condition. and/or;</td>
</tr>
<tr>
<td>Immunological criteria for diagnosing advanced HIV in adults and children five years or older with confirmed HIV infection:</td>
</tr>
<tr>
<td>CD4 count less than 350 per mm3 of blood in an HIV-infected adult or child. and/or;</td>
</tr>
<tr>
<td>Immunological criteria for diagnosing advanced HIV in a child younger than five years of age with confirmed HIV infection:</td>
</tr>
<tr>
<td>%CD4+ &lt;30 among those younger than 12 months; %CD4+ &lt;25 among those aged 12–35 months; %CD4+ &lt;20 among those aged 36–59 months.</td>
</tr>
</tbody>
</table>

The 2013 WHO Consolidated Guidelines on the Use of Antiretroviral Drugs for Treating and Preventing HIV Infection recommends a reclassification of advanced and severe disease so that treatment can begin at CD4 counts at 500 or less. The OECS HIV Guidelines are consistent and recommend initiation of ART at CD4 counts at 500 or less for persons 5 years and older and for all HIV positive children under the age of 5 years.
9. HIV DIAGNOSTIC TESTING AND TESTING ALGORITHM

The diagnostic testing algorithm for HIV Rapid Testing is shown in Appendix 6. All persons should be offered HIV tests so that they know their status. This includes the following categories of persons:

1. *Hospitalized patients:* all individuals admitted to either private or public hospitals and who have not had an HIV test in the last three months or who do not know the results of HIV tests done during that period; this is particularly true for adolescents and young adults.

2. *Pregnant women:* all pregnant women at first presentation to a health care professional and repeated at 28 weeks. In addition, upon admission for delivery the HIV status and previous ante-natal care history should be confirmed. If the status is unknown, then attempts should be made to track results urgently. If these are unavailable, an HIV test should be offered. All HIV-positive pregnant women admitted for delivery must be reported to the Infection Control Officer/Nurse, Clinical Care Team and Surveillance Unit.

3. *Every individual with an STI* and who has not had an HIV test done in the last three months or who do not know the results of HIV tests done during that period.

4. *Tuberculosis cases*

5. Individuals with a *history of risky sexual behaviour* (multiple sexual partners, inconsistent condom use, drug users etc.)

6. *All infants and young children of HIV infected mothers*

During testing the following points detail the procedures to be adhered to:

- All samples submitted to the laboratories for processing must bear a unique identifier (as detailed on the Case-based Reporting Form).
- The lab request must also bear the same identifier. Every attempt will be made to report results within 24 hours of testing.
- Results will be sent to referring HTC provider or DMOs in charge of HTC sites. Positive results will also simultaneously be reported to the Nurse Epidemiologist.
• Except for mandatory reporting of coded positive results to the Ministry of Health, HIV test results shall not be disclosed without the patient’s permission.

• In an emergency situation in the blood bank, two different rapid test (e.g. Abbott Determine and HIV Unigold) are to be used. If both tests are negative, a negative result is issued and the blood may be used for transfusion. If both tests are positive, the blood is discarded, and a sample is sent for ELISA. This algorithm may also be used in other emergency situations for example cases of needle stick injuries, rape and assault, precipitous deliveries, when the need to start ARV therapy is urgent.

• In the cases where testing is done as part of clinical management, all testing, must be preceded by pre-test counselling conducted by a trained counsellor.

• Test results are discussed with the patients by their referring or attending physician and the discussion should also involve post-test counseling.

10. THE HIV/STI/TB CASE REPORTING FORM

The HIV/STI/TB Case Reporting Form (HCRF) should be used to collect case specific data from the laboratory confirmed HIV/STI/TB patient, and to provide updates on their clinical management. The HCRF is designed to collect information that promotes the understanding of morbidity and mortality from HIV, STI and TB infections. Each variable has been carefully selected and is very important for meeting case surveillance objectives. Elements of a case reporting form include

• Information regarding reporting person, site and date

• Demographic information of the client i.e. name, client code, date of birth, sex, address, ethnicity, current marital status, employment status, country of birth and country of residence.

• Risk factors

• Reason for test

• Laboratory results i.e. Date specimen was obtained, HIV antibody test result and date

• Clinical stage (date of first clinical stage clinical stage, date of first clinical stage 3 diagnosis, dare o first clinical stage 4 diagnosis).
• Immunologic status (date of first CD4, first CD4, first CD4 count less than 350, first CD4 count less than 200
• Date of death
• Cause of death

The HCRF should be completed fully by each Health Care Provider in triplicate. One of each completed form should be sent to the Nurse Epidemiologist and to the Clinical Care Coordinator. One copy should be retained by the provider.

A HCRF should be completed whenever

• A new HIV diagnosis is confirmed
• An HIV positive patient progresses to clinical stage 3 (CD4 less than 350)
• An HIV positive patient progresses to clinical stage 4 (CD4 less than 200)
• An HIV positive persons dies

In addition, in computerized systems with electronic medical records, the form should be filled for all persons undergoing testing and counselling so that the risk factors of those who test positive can be compared to those who test negative.

The HCRF should be completed in a timely and accurate manner by the Clinical Care Coordinator. The Clinical Care Nurse should send a quarterly update of patient care data to the Nurse Epidemiologist.

The Form is arranged in sections:

I. Reporting Facility information
II. Client Demographics
III. Risk Factors
IV. HIV test Results
V. Clinical Information on Advanced HIV
VI. Receiving Unit Use Only

The variables in each section are defined as follows:
### I. Reporting Facility Information

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description of variable/Action to be taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of person reporting the Case</td>
<td>Full first and last names of person filling the form. Write in block letters</td>
</tr>
<tr>
<td>Address of reporting site</td>
<td>Address of facility where form is being submitted from</td>
</tr>
<tr>
<td>Contact information</td>
<td>Telephone number and email address of person filling the form</td>
</tr>
<tr>
<td>Date of reporting</td>
<td>Date when the case report form is completed at the facility: calendar day (DD), month (MM), and year (YYYY)</td>
</tr>
<tr>
<td>Reporting facility type</td>
<td>Type of the facility where the case is reported, including: PMTCT clinic, private hospital, public hospital, private health clinic, public health clinic, TB clinic, VCT sites, and other. Tick all boxes that apply.</td>
</tr>
<tr>
<td>Type of report</td>
<td>Determine if the case reported is a new case, an old case (previously diagnosed but not reported to the system) or an update by searching for the unique patient ID in the electronic data base. If a case is determined to have already been reported in the database, check “update”. If they are newly diagnosed and not in the database check “new”. If they have been diagnosed before but not captured in the database check “old”</td>
</tr>
</tbody>
</table>

### II. Patient Demographics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description of variable/Action to be taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>First name</td>
<td>Patient’s first name as it appears on national ID. If initial is unknown replace with a X.</td>
</tr>
<tr>
<td>Mother’s maiden name</td>
<td>Family name that appears on mother’s birth certificate</td>
</tr>
<tr>
<td>Surname</td>
<td>Patient’s last name as it appears on national ID. No married names or nicknames; for women ask for maiden name; if more than one last name use the first last name. If initial is unknown replace with a X</td>
</tr>
<tr>
<td>Multipurpose ID No.</td>
<td>18 digit national unique identification number generated by the national MPID system and issued by an official government</td>
</tr>
<tr>
<td><strong>Hospital registration number</strong></td>
<td>Number generated by the hospital patient registration system</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Date of birth</strong></td>
<td>Calendar day (DD), Month (MM), and Year (YYYY), as it appears on the patient’s birth certificate (using 9s for any or all portions of the date of birth that are unknown)</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td>Sex as it appears on the birth certificate, regardless of how the patient presents him/herself</td>
</tr>
<tr>
<td><strong>Country of birth</strong></td>
<td>Country of birth as it appears on national ID</td>
</tr>
<tr>
<td><strong>Country of residence</strong></td>
<td>Country where patient currently lives most of the year</td>
</tr>
<tr>
<td><strong>Street/Lane</strong></td>
<td>Name of street or lane where patient resides most of the time</td>
</tr>
<tr>
<td><strong>City/Town/Village</strong></td>
<td>Name of city/town/village where patient resides most of the time at the time of this report</td>
</tr>
<tr>
<td><strong>Parish</strong></td>
<td>Parish within which city/town/village of residence is located</td>
</tr>
<tr>
<td><strong>Employment status</strong></td>
<td>Current status of employment: employed, unemployed, student, refused. If employed, state occupation. Employed includes part time as well as full time work. For clients that are both employed and students, write both.</td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td>Use occupation grouping used by national statistical office</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td>Patient’s self-reporting ethnicity: Black, Caucasian, Kalinago, Hispanic, Asian, East Indian, Mixed, or Other. ‘Mixed’ means the patient identifies with more than one ethnicity.</td>
</tr>
<tr>
<td><strong>If female, pregnant</strong></td>
<td>If patient is female, is she pregnant?</td>
</tr>
<tr>
<td><strong>If pregnant, has the regular sexual partner been tested for HIV?</strong></td>
<td>If the patient identifies more than one regular sexual partner then have ALL regular sexual partners been tested.</td>
</tr>
<tr>
<td><strong>Current Status</strong></td>
<td>Place ‘X’ in the appropriate box</td>
</tr>
<tr>
<td><strong>Date of Death</strong></td>
<td>Enter date of death in the format day DD/ Month MM/Year YYYY. If day, month or year is unknown fill space with 9s</td>
</tr>
<tr>
<td><strong>Cause of Death</strong></td>
<td>Enter ‘X’ in the appropriate box based on data from the certificate of death</td>
</tr>
<tr>
<td><strong>Has client left the country to reside elsewhere</strong></td>
<td>Enter ‘X’ in the appropriate box</td>
</tr>
</tbody>
</table>
### III. Risk Factors

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description of variable/Action to be taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex with male</td>
<td>Patient had anal, oral, or vaginal sex with a male</td>
</tr>
<tr>
<td>Sex with female</td>
<td>Patient had anal, oral, or vaginal sex with a female</td>
</tr>
<tr>
<td>Sex with person(s) of known HIV positive status</td>
<td>Patient had anal, oral, or vaginal sex with a person who is infected with HIV. They do not need to have known that the sex partner was HIV-infected at the time they had sex – only that patient can report that they had sex with an HIV-infected person at the time of Case-based Report Form completion.</td>
</tr>
<tr>
<td>Sex with sex worker</td>
<td>Patient had anal, oral, or vaginal sex with a male or female sex worker</td>
</tr>
<tr>
<td>Exchanged sex for money, drugs. or other material gain</td>
<td>Patient has exchanged sex for money or other material goods</td>
</tr>
<tr>
<td>Shared needles when injecting non-prescription drugs</td>
<td>Patient reported sharing needles when injecting drugs</td>
</tr>
<tr>
<td>Sex with multiple partners</td>
<td>Patient had anal, oral, or vaginal sex with multiple partners – not necessarily at the same time</td>
</tr>
<tr>
<td>Perinatal exposure to HIV</td>
<td>Patient had been exposed to HIV through mother-to-child transmission (born to a HIV+ mother)</td>
</tr>
<tr>
<td>Received blood transfusion or blood components</td>
<td>Patient reported being a recipient of a blood transfusion or blood component</td>
</tr>
<tr>
<td>Received transplant of tissue or organ or artificial insemination</td>
<td>Patient reported having received transplant of tissue or organ, or had an artificial insemination</td>
</tr>
<tr>
<td>Occupational exposure in health care setting or laboratory or providing</td>
<td>Patient reported having been exposed to blood/blood components while performing his/her job in a health care setting or laboratory</td>
</tr>
<tr>
<td><strong>safety or emergency services</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Been a victim of sexual assault</strong></td>
<td>Patient reported being a victim of sexual assault.</td>
</tr>
<tr>
<td><strong>Unknown</strong></td>
<td>Patient does not report how they were exposed. <em>This option is selected by receiving agency if all other options are blank. It should not be checked by the person completing the form.</em></td>
</tr>
<tr>
<td><strong>Confirmed diagnosis of other STI at the time of diagnosis</strong></td>
<td>Enter the date of diagnosis of the STI i.e. the date the sample was taken that tested positive.</td>
</tr>
<tr>
<td><strong>Confirmed TB at the time of HIV diagnosis</strong></td>
<td>Enter the date on which the sample was taken that confirmed TB infection. If clinical only diagnosis then enter the date the clinician made the diagnosis.</td>
</tr>
<tr>
<td><strong>Contact with confirmed TB</strong></td>
<td>Enter the date on which the contact presented with symptoms. If asymptomatic then enter the date samples were taken to confirm the diagnosis of TB.</td>
</tr>
<tr>
<td><strong>Previously diagnosed with... (TB patients)</strong></td>
<td>Enter date the samples were taken to make the diagnosis (HIV, diabetes, lymphoma, ESRD, CLD).</td>
</tr>
<tr>
<td><strong>Other conditions – alcoholism, malnutrition</strong></td>
<td>Enter the date on which the conditions were diagnosed.</td>
</tr>
<tr>
<td><strong>Condom use</strong></td>
<td>Place ‘X’ in the appropriate box.</td>
</tr>
<tr>
<td><strong>Reason for test</strong></td>
<td>Why is the patient undergoing testing for HIV, STI or TB? Place an ‘X’ in the appropriate box.</td>
</tr>
<tr>
<td><strong>Type of test</strong></td>
<td>Is the patient being tested for HIV, STI or TB? Place an ‘X’ in all boxes that apply.</td>
</tr>
<tr>
<td><strong>Has the client been previously diagnosed with HIV (/STI/TB)?</strong></td>
<td>Place ‘X’ in the appropriate box. If yes enter the date of diagnosis (date the specimen was taken).</td>
</tr>
<tr>
<td><strong>Place of previous diagnosis</strong></td>
<td>Enter the city and country where patient was living at the time of the previous diagnosis.</td>
</tr>
</tbody>
</table>
### IV. Laboratory Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description of variable/Action to be taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date specimen obtained from patient</td>
<td>Date specimen obtained NOT date test is run. Write name of the test that the specimen was taken for in the greyed out space. Calendar day (DD), month (MM), and year (YYYY)</td>
</tr>
</tbody>
</table>
| Type of test                                  | Screening or Confirmatory. Type of test used for HIV diagnosis includes: Antibody test: Rapid test, Enzyme-linked immunosorbent assay (ELISA)  
Virology test: HIV DNA PCR (for children less than 18 months old) |
| Name of test kit                              | Name of rapid test kit used. Examples include: HIV rapid tests: Determine, UniGold, Stat-Pack                                                                                         |
| Result                                        | Place ‘X’ in appropriate box: positive, negative, indeterminate or not performed                                                                                                      |
| Test result date                              | Place the date the result was available from the lab (date on the lab result form) or testing site. Use format day (DD), month (MM), year (YYYY)                                                    |
| Date HIV diagnosis given by healthcare provider to patient | Write in date that patient is told about the results of the HIV test. Use format day (DD), month (MM), year (YYYY)                                                                       |
| Date of last documented HIV negative test     | Write in date that patient had a negative test. Note that the patient may have been tested outside of the country. Use format day (DD), month (MM), year (YYYY) |
| Date TB diagnosis given to patient            | Write date that patient is told about the result of positive confirmatory TB test. Use format day (DD), month (MM), year (YYYY)                                                       |
| Date of other STI diagnosis given to patient  | Write date that patient is told about result of positive confirmatory STI test. Use format day (DD)/month (MM)/year (YYYY)                                                        |
### V. Staging of HIV Positive Patient

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description of variable/Action to be taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHO clinical stage (1-4)</td>
<td>Place a ‘X’ in all boxes that apply. For each ‘X’ there must be a corresponding ‘Date diagnosed’ fill in in the format day (DD)/month(MM)/year (YYYY)</td>
</tr>
<tr>
<td>First WHO clinical stage 1 or 2 diagnosis</td>
<td>Fill in the date on which the patient was assessed to have reached this stage of the disease. If the patient is presenting after stage 1 or 2 and there is no previous documentation of stage 1 or 2 then leave blank.</td>
</tr>
<tr>
<td>First CD4 test</td>
<td>Fill date on which sample was taken for first CD4 test. Use format (DD)/month(MM)/year (YYYY)</td>
</tr>
<tr>
<td>Date of first CD4 count below 500/µL (≥5 years old)</td>
<td>CD4 cells count below 500 cells /µL is a marker for determining advanced HIV infection among patients aged 5 years and older. Record the exact CD4 count result.</td>
</tr>
<tr>
<td>% CD4 below 30 (&lt; 5 years old)</td>
<td>Percent CD4 below 30% is a marker for determining advanced HIV infection among patients less than 5 years of age. Record the % of CD4 below 30</td>
</tr>
<tr>
<td>Test date</td>
<td>Date of test for CD4 count: calendar day (DD), month (MM), and year (YYYY)</td>
</tr>
<tr>
<td>Stage of disease (Stage 3 or Stage 4)</td>
<td>The dates for the Stage 3 or Stage 4 box are entered when the patient meets the criteria respectively. The staging criteria may be met by either clinical or immunologic criteria. Clinical criteria are listed in Section V (page 35) of the Case Reporting Form. For immunologic staging criteria see: WHO immunologic criteria for these Stages in the Table “WHO immunological classification for established HIV infection” found in Section V (page 36) of the Case Reporting Form.</td>
</tr>
</tbody>
</table>
VI. This section to be completed by Receiving Unit

<table>
<thead>
<tr>
<th>Received date</th>
<th>Date of the form received at the Health Information Unit, the National HIV/STI/TB Programme Office or the Infectious Diseases Clinic. Use format: calendar day (DD), month (MM)/ year (YYYY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Record no.</td>
<td>An automated number generated from the electronic data base</td>
</tr>
</tbody>
</table>

11. STANDARDS AND MONITORING

A high quality surveillance system must adhere to the following principles:

11.1. Data Quality

The quality of data is of paramount importance. The data collected should describe the reality of HIV/AIDS/STI epidemic in Antigua and Barbuda so as to ensure that the decisions that are made based on the evidence are valid. Although double data entry and cross checking is optimal, due to limited resources, the data will be “proof read” to ensure data quality and the Health Information Unit staff will liaison closely with stakeholders during the data collection process. In addition, the data will be reviewed by the Statistical Officer with a view to identifying potential errors. Sporadic data audits will be conducted at the service delivery point or departmental level by members of the Health Information Unit staff.

There are six main factors which needs to be considered to ensure optimal data quality;

1. The clarity of the reporting form and ease of completion -- all reporting forms should be written clearly to facilitate interpretation of data collected on the form.
2. All forms should be complete so as to accurately describe the epidemic. Accurate information of the epidemic will be the baseline for analysis of treatment and care needs and will assist in the development of appropriate prevention programmes.
3. Reporting should occur from all levels and from all data sources.
4. A standard protocol of reporting should be used by all to ensure that the data reflects the HIV/AIDS/STI situation on island.
5. *Training* for all persons involved in the reporting process will be ongoing. The trainings will provide data sources with updated information, reports and other related information on HIV surveillance.

6. Data should be managed effectively. The different data sources will report through the case reporting forms which would feed into a data management system at the national level (Health information Unit). The effective management of the data will be dependent on clear definitions of roles and responsibilities of all persons involved in surveillance of HIV/AIDS/STI.

11.1.1. **Completeness**

Filling out case report correctly and completely is an important component of a high quality surveillance system. Nurse Epidemiologist will make sure all reports are cleaned so that correct and complete data are entered into the database. Completeness should be assessed:

**11.1.1.1. System Completeness**

It indicates the extent to which all cases expected to be in the system are actually in the system. It can be calculated to determine the overall completeness of the system or can be disaggregated by region or site using the following formula:

\[
\text{Completeness} = \frac{\text{Number of reported cases (in time period)}}{\text{Number of expected cases (in time period)}} \times 100
\]

**11.1.1.2. Data Completeness**

This refers to the extent to which all variables/fields on the case report form are complete.

**11.1.2. **Validity**

The validity or ‘truthfulness’ of the report should be checked by comparing at least 2 data sources – usually the CRF and the patient medical record.
11.2. Timeliness
This refers to the time between diagnosis and receipt of the case report at the national level; and it should be sent to the national level within seven days following diagnosis. Timely reporting is very important and is necessary in order for the implementation of effective prevention and control measures.

11.3. Standards
The standards against which the quality of the surveillance system will be judged are presented in Table 5 below.

Table 5: Standards for Quality of Surveillance System

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completeness</td>
<td>85%</td>
</tr>
<tr>
<td>Validity</td>
<td>90%</td>
</tr>
<tr>
<td>Timeliness</td>
<td>66% within 6 months of diagnosis 85% within 1 year of diagnosis</td>
</tr>
</tbody>
</table>

12. DATA MANAGEMENT AND ANALYSIS

12.1. Data Collection and entry
Data is entered at clinical sites into the appropriate data collection tools (including the Patient Monitoring System and/or similar databases), filtered, validated by the HMIS and forwarded to the Epidemiology Unit.

12.2. Data Analysis, Interpretation and Report Writing
The data is analysed by the Statistical Assistant, Biostatistician and the National Epidemiologist. The Biostatistician and National Epidemiologist will finalize the interpretation and production of reports from the CBS.
13. HIV DATA DISSEMINATION PLAN (SURVEILLANCE REPORTS, EPI PROFILE, NHRP INDICATORS, ETC.)

A critical aspect of any information system is the supply of timely data and information to key stakeholders, to assist with evidence-based decision making. To ensure that information is available across MOHWE to key stakeholders and decision makers, a dissemination plan has been developed (see Table 5). This plan clearly outlines the numerous reports which are generated within MOHWE, the intend recipients of each report and the frequency with which they will be supplied.

**Table 6: Dissemination Plan**

<table>
<thead>
<tr>
<th>Type of Data/Data Source</th>
<th>Report Recipient</th>
<th>Format</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communicable Disease Report (HIU)</td>
<td>CMO Surveillance committee members Stakeholders CARPHA</td>
<td>Report</td>
<td>Weekly Monthly Annually</td>
</tr>
<tr>
<td>GARP report (HIU)</td>
<td>CMO UNAIDS</td>
<td>Report</td>
<td>Biennial</td>
</tr>
<tr>
<td>Universal Access Report (HIU)</td>
<td>CMO PAHO UNAIDS</td>
<td>Report</td>
<td>Biennial</td>
</tr>
<tr>
<td>M&amp;E Report (HIU)</td>
<td>CMO Heads of Department Health Planning Unit Health MERG</td>
<td>Report</td>
<td>Annually</td>
</tr>
</tbody>
</table>
The National Epidemiologist and the Nurse Epidemiologist are responsible for disseminating surveillance data both at the national level and regional level.

Surveillance data obtained from the various reporting sources will be stored into a database designed by the Health Information Unit. The data will then be analysed and interpreted depending on the reporting needs, indicators and requirements of the various stakeholders.

Reports on the trend of these diseases will be disseminated to the Chief Medical Officer and it will also be included in the Annual M&E Report. Annual reports on HIV, AIDS and other STIs will be submitted to CARPHA using a specific standard reporting form.

Weekly reports will also be disseminated at Surveillance Team Meetings to update team members and other stakeholders on the trends of the epidemic.

All data obtained from the surveillance of HIV/AIDS/STI will serve as a base for programme planning. The National Epidemiologist and the Nurse Epidemiologist will collaborate with the National AIDS Programme to develop programmes for intervention.

14. HIV INFORMATION SYSTEM

The system, currently, is a hybrid of paper-based and digital data. A hard copy of the HCRF is used to collect data from all sites. Information is then stored in the Case Database at the Health Information Unit. The Patient Monitoring (PM) system is a stand-alone electronic database stationed at the Infectious Disease Clinic. The PM system collects on-going patient care information. However, Antigua and Barbuda is moving towards web-based, patient-centred electronic information systems which will enable submission of case-based data electronically and improve ready access to information that is generated in a timelier manner than is currently possible.

It is anticipated that most of the data analysis associated with the generation of the indicators shown in Appendix 2 will be automatically generated by the computerized system once the data is routinely entered and cleaned.
The Table 7 represents minimal infrastructure that is necessary for a fully digital information system.

**Table 7: Minimum computer/IT requirements for the HIV/STI/TB Information Unit**

<table>
<thead>
<tr>
<th>Site</th>
<th>Equipment</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHRP</td>
<td>1) 4 desktops</td>
<td>MS Office 2013</td>
</tr>
<tr>
<td></td>
<td>2) 1 (multifunction) network printer/ scanner/copier/fax</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3) 1 laptop</td>
<td></td>
</tr>
<tr>
<td>HIU</td>
<td>1) 3 desktops</td>
<td>1) MS Office 2013</td>
</tr>
<tr>
<td></td>
<td>2) 2 laptops</td>
<td>2) Epi Info</td>
</tr>
<tr>
<td></td>
<td>3) 2 (multifunction) network printer/ scanner/copier/fax</td>
<td>3) STATA</td>
</tr>
<tr>
<td>Infectious Diseases Clinic</td>
<td>1) 1 Laptop</td>
<td>MS Office 2013</td>
</tr>
<tr>
<td></td>
<td>2) 1 (multifunction) network printer/ scanner/copier/fax</td>
<td></td>
</tr>
<tr>
<td>Central Medical Stores</td>
<td>4 desktops</td>
<td>MS Office 2013</td>
</tr>
<tr>
<td>District Clinic</td>
<td>1) Desktop</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2) 1 (multifunction) network printer/ scanner/copier/fax</td>
<td></td>
</tr>
</tbody>
</table>

All computers need keyboard, mouse and a monitor (preferably 19” or greater). Access to the internet and the government high-speed intranet are also requisites at all sites.
APPENDIX 1: HIV Disease Sentinel Events for Case Reporting

Source: Adapted from Surveillance of HIV Infection Using HIV Case Notification – Recommendations for improving and strengthening HIV surveillance systems, PAHO, 2012
APPENDIX 2: Key Indicators to be generated by Case-based HIV Surveillance System

CONSENSUS BASED INDICATORS IN THE CONTINUUM OF HIV CARE (PANAMA, 2012)

Source: Meeting Report - Regional Consultation on HIV Epidemiologic Information in Latin America and the Caribbean, Panama City, 7-9 November, 2012
APPENDIX 3:

Confidentiality Agreement for Ministry of Health

I, ___________________________ understand and agree that in the performance of
duties as an employee/volunteer of the MINISTRY OF HEALTH, I must hold patient
information in confidence. I understand that MINISTRY OF HEALTH policy requires, as
a condition of work, that I must safeguard all confidential information, which I acquire in
the performance of my duties. I agree that I will not release any confidential information
to my family, friends or unauthorized person or discuss confidential information in a
manner that will lead to unauthorized persons obtaining this information. I understand that
any violation of the confidentiality of any patient gained through my activities at the
MINISTRY OF HEALTH is grounds for immediate disciplinary action, including
suspension or termination.

Employee/Volunteer Name: ___________________________
Employee/Volunteer Signature: _______________________
Date: ____________________

Department Head/Supervisor Signature: _______________________
Department Head/Supervisor Name: _______________________
Date: _______________

Signature of Commissioner of Oaths: _______________________
Name of Commissioner of Oaths: _______________________
Dated: _______________
## Appendix 4: Case Reporting Form

Ministry of Health, Antigua and Barbuda

HIV & AIDS/STI/TB Case Reporting Form

Please complete form in block letters

<table>
<thead>
<tr>
<th>I. REPORTING FACILITY INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of person reporting the case:</td>
</tr>
<tr>
<td>Contact information:</td>
</tr>
</tbody>
</table>

**Reporting facility type (please check where applicable):**

- [ ] ANC/PMTCT CLINIC
- [ ] INFECTIOUS DISEASES CLINIC
- [ ] T&C SITE
- [ ] MSUMC HOSPITAL
- [ ] PRIVATE HEALTH CLINIC
- [ ] PRIVATE LABORATORY
- [ ] PUBLIC HEALTH CLINIC
- [ ] BLOOD BANK
- [ ] AIDS SECRETARIAT
- [ ] PUBLIC LABORATORY
- [ ] OTHER, SPECIFY

Type of report: [ ] New case [ ] Old case (previously diagnosed, however reporting for the 1st time) [ ] Update of existing case

<table>
<thead>
<tr>
<th>II. CLIENT DEMOGRAPHICS (verify client information with photo ID)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First name:</strong></td>
</tr>
<tr>
<td><strong>Client testing code:</strong></td>
</tr>
<tr>
<td>1 - First letter of the 1st name (given name e.g. John Doe = J)</td>
</tr>
<tr>
<td>2 - First letter of last name (surname at birth e.g. John Doe = D)</td>
</tr>
<tr>
<td>3 - First letter of mother’s first name (e.g. Mary Peter = M)</td>
</tr>
<tr>
<td>4 - First letter of mother’s last name (e.g. Mary Peter = P)</td>
</tr>
<tr>
<td>5 - Sex (M for male, F for female)</td>
</tr>
<tr>
<td>6,7 - year of birth e.g. 1976 = 76</td>
</tr>
<tr>
<td>8,9 - month of birth (e.g. March = 03)</td>
</tr>
<tr>
<td>10,11 - day of birth (e.g. 05).</td>
</tr>
</tbody>
</table>

*Example: Jane Doe (mother’s maiden name unknown; year of birth 1965 and female)
Code: JDMPPM760305

**Note:** In case of any unknown names, please use letter ‘U’ and for year of birth is unknown, use ‘YY’. Standard 11-digit code must be maintained.

In case of 2 surnames (Spanish format), only father’s surname should be used at the 2nd digit in the code, and mother’s maiden name (not married surname) should be used at the 4th digit in the code.

**Ethnicity:**

- [ ] Black
- [ ] Garifuna/Carib
- [ ] Caucasian
- [ ] Hispanic
- [ ] Asian
- [ ] Mixed
- [ ] Other (specify) ________________________

**Employment Status:**

- [ ] Employed
- [ ] Self-employed
- [ ] Unemployed
- [ ] Unknown
- [ ] Student

**Occupation:** ________________________

**Marital Status:**

- [ ] Single
- [ ] Widowed
- [ ] Other
- [ ] Married
- [ ] Separated
- [ ] Divorced
- [ ] Common law union

**Is this patient currently pregnant (female only):**

- [ ] Yes
- [ ] No
- [ ] Unknown

**If yes, has the regular sexual partner been tested for HIV?**

- [ ] Yes
- [ ] No
- [ ] Unknown

**Current status:**

- [ ] Alive
- [ ] Dead
- [ ] Unknown

**Date of death:** dd/mm/yyyy

**Cause of death:**

- [ ] HIV-Related
- [ ] Other/Unknown

**Has the client left the country to reside elsewhere:**

- [ ] Yes
- [ ] No
- [ ] Unknown
### III. RISK FACTORS

In the past 12 months this client had (respond to all categories):

<table>
<thead>
<tr>
<th>Reason for Test</th>
<th>YES</th>
<th>NO</th>
<th>UNK</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Employment/Work permit/Scholarship</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Possible exposure, thought to be at risk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Provider initiated testing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Immigration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ To obtain medical care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Clinical symptoms of HIV</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of test</th>
<th>HIV</th>
<th>STI</th>
<th>TB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has the client been previously diagnosed with HIV?</td>
<td>Yes</td>
<td>No</td>
<td>Unknown</td>
</tr>
<tr>
<td>Place of previous diagnosis (city, country):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has the client been previously diagnosed with STI (other than HIV)?</td>
<td>Yes</td>
<td>No</td>
<td>Unknown</td>
</tr>
<tr>
<td>Place of previous diagnosis (city, country):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has the client been previously diagnosed with TB?</td>
<td>Yes</td>
<td>No</td>
<td>Unknown</td>
</tr>
<tr>
<td>Place of previous diagnosis (city, country):</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### IV. LABORATORY RESULTS

<table>
<thead>
<tr>
<th>Date specimen(s) was obtained from patient (Date of Diagnosis):</th>
<th>Day</th>
<th>Mo.</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCREENING:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV-EIA</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>HIV RAPID TEST</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NAME OF TEST KIT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MANTOUX</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>RPR</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>OTHER(SPECIFY):</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of test(s) performed (respond to all categories):</th>
<th>Test Result</th>
<th>Test result date</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV-EIA</td>
<td>Positive</td>
<td>Negative</td>
</tr>
<tr>
<td>HIV RAPID TEST</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NAME OF TEST KIT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MANTOUX</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>RPR</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>OTHER(SPECIFY):</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>
Adolescents are defined as 15 years and older. For those aged less than 15, the clinical staging for children should be used.

For children under 5 years, moderate malnutrition is defined as weight-for-height $< -2$ z-score or mid-upper arm circumference $> 115$ mm and $< 125$ mm.
Clinical Stage 4 (check all that apply):

- HIV Wasting Syndrome
- Pneumocystis (previous) Pneumonia
- Recurrent severe bacterial pneumonia
- Chronic herpes simplex infection (oral, genital or anorectal of more than one month’s duration or visceral at any site)
- Disseminated non-tuberculosis mycobacterial infection
- Extrapulmonary tuberculosis (or candidiasis of the trachea or bronchi or lungs)
- Extrapulmonary tuberculosis
- Kaposis’ sarcoma
- Cryptomegalovirus infection (retinitis or infection of other organs)
- Central nervous system toxoplasmosis (after the neonatal period)
- HIV encephalopathy
- Disseminated mycosis (extrapulmonary histoplasmosis or candidiasis)
- Lymphoma (cerebral or B-cell non-Hogkin)
- Symptomatic HIV-associated nephropathy or cardiomypathy
- Recurrent septicaemia (including non-typical Salmonella)
- Invasive cervical carcinoma
- Atypical disseminated leishmaniasis

WHO IMMUNOLOGICAL STAGING OF HIV POSITIVE PATIENTS

<table>
<thead>
<tr>
<th>AGE-RELATED CD4 VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV-ASSOCIATED IMMUNODEFICIENCY</td>
</tr>
<tr>
<td>NON-NEONATAL SIGNIFICANT</td>
</tr>
<tr>
<td>5–15 CD4+ %</td>
</tr>
<tr>
<td>MILD</td>
</tr>
<tr>
<td>10 – 15 CD4+ %</td>
</tr>
<tr>
<td>ADVANCED</td>
</tr>
<tr>
<td>3 – 29 CD4+ %</td>
</tr>
<tr>
<td>SEVERE</td>
</tr>
<tr>
<td>&lt;25</td>
</tr>
</tbody>
</table>

CLINICAL STAGING OF CONFIRMED HIV POSITIVE PATIENT: DOCUMENTATION OF STAGE

<table>
<thead>
<tr>
<th>STAGE</th>
<th>DATE OF TEST</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>First WHO clinical stage 1 or 2 diagnosis:</td>
<td>First CD4 test: (at or closest to diagnosis)</td>
<td>CD4 Count: [\text{Percent:}]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[\text{Day:}] [\text{Mo.:}] [\text{Year:}]</td>
</tr>
<tr>
<td>First WHO clinical stage 3 diagnosis:</td>
<td>Date of first CD4 count &lt;350:</td>
<td>CD4 Count: [\text{Percent:}]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[\text{Day:}] [\text{Mo.:}] [\text{Year:}]</td>
</tr>
<tr>
<td>First WHO clinical stage 4 diagnosis:</td>
<td>Date of first CD4 count &lt;200:</td>
<td>CD4 Count: [\text{Percent:}]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[\text{Day:}] [\text{Mo.:}] [\text{Year:}]</td>
</tr>
<tr>
<td>Date of first viral load test:</td>
<td>First viral load value:</td>
<td>[\text{Day:}] [\text{Mo.:}] [\text{Year:}]</td>
</tr>
</tbody>
</table>

VI. THIS SECTION TO BE COMPLETED BY RECEIVING UNIT

Date received by HIU/NHRP/IDC: \[\text{Day:}\] \[\text{Mo.:}\] \[\text{Year:}\]

---

3 For children under 5 years of age, severe wasting is defined as weight-for-height < -3 z-score; stunting is defined as length-for-age/height-for-age < -2 z-score; and severe acute malnutrition is defined as either weight for height < -3 z-score or mid-upper arm circumference < 115 mm or the presence of oedema
APPENDIX 5: OECS Labour Market Classification System

The following broad classification used by the OECS Labour Market Classification System should be used to categorize patients’ occupation:

**Professional**: This includes occupations that require certification of proficiency and a high degree of skill and includes lawyers, doctors, nurses, engineers, architects, accountants, teachers, administrators, pharmacists, pilots, business managers etc.

**Sales and customer service**: This includes persons whose job requires them to perform sales or have a high degree of interaction with customers. Examples of occupations that fall in this category include sales clerks, secretarial staff, receptionists, waitresses, bartenders, chefs, food vendors and travel agents/staff etc.

**Skilled trade**: These types of occupations are competency based and include carpenters, mechanics, masons, plumbers, farmers, technicians, fishermen, fire fighters, child care, hairdressers, barbers etc.

**Military/Armed forces**: This includes persons who are enrolled in the military forces including defence and coast guard as well as policemen/women.

**Unemployed**: Persons who are not currently employed and have not been engaged in gainful employment for at least the past three months.

**Other**: Persons who do not fall into any of the above categories. You may want to specify
APPENDIX 6: Algorithm for HIV Parallel Testing in Antigua and Barbuda

1. Determine HIV

2. HIV Tests

   a. Reactive
      - Reactive
         - Send sample to laboratory for confirmatory test
      - Non-reactive
         - Report negative test
   b. Non-reactive
      - Discordant Results
         - Negative/Positive
            - Send sample to laboratory to be resolved/confirmatory

Unigold HIV
Appendix 7: Use of Unique Identifiers

In order to effectively track individual patients over time and between healthcare facilities as well as to address issues such as counting the same patient multiple times, it is important to be able to identify each patient with an identifier that is unique to that individual. The Client Testing Code has been used by the health care system for some time but it has challenges with identifying the patient uniquely – for example twins may be impossible to differentiate. While the Hospital Registration Number may be useful for those patients who are registered at the hospital, there are many persons who do not have a Hospital Registration Number.

Under the World Bank funded OECS Electronic Government for Regional Integration Project (EGRIP) a new unique identifier had been developed for use in the OECS. This Multipurpose ID (MPID) number will be issued at birth and is designed to be used across the OECS

- Issuing Country (ISO standard 3166-1 ALPHA-3)
- Issuing Authority/District (See tables 2 & 3)
- Entity Type (See table 4)
- Issuing Century (See table 5)
- 10 digit number
- Checksum (Modulus 11)

The first three digits of the unique identifier utilize the ISO 3166-1 ALPHA-3 standard to identify the country who issued the identifier. Table 1 below provides the OECS countries and their associated ISO code numbers. This portion of the identifier provides the means to distinguish between countries of issuance.

<table>
<thead>
<tr>
<th>Number</th>
<th>Issuing Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>212</td>
<td>Dominica</td>
</tr>
<tr>
<td>308</td>
<td>Grenada</td>
</tr>
<tr>
<td>662</td>
<td>Saint Lucia</td>
</tr>
<tr>
<td>670</td>
<td>Saint Vincent and the Grenadines</td>
</tr>
</tbody>
</table>

The MPID should always be entered onto the Case Report Form if available. In the absence of the MPID number then the Client Testing Code and (if available) the Hospital Registration Number and (in when an electronic system is being used) the system generated ID number should also be entered.
## Appendix 8: List of Key Contacts

### List of Key Contacts

<table>
<thead>
<tr>
<th>Name</th>
<th>Post</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Rhonda Sealy-Thomas</td>
<td>Chief Medical Officer</td>
<td>Ministry of Health, Antigua and Barbuda</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tel:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Email:</td>
</tr>
<tr>
<td>Ms Delcora Williams</td>
<td>National AIDS Programme Coordinator</td>
<td>National HIV/AIDS Response Programme</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ministry of Health</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tel.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Email:</td>
</tr>
<tr>
<td>Ms</td>
<td>National Epidemiologist</td>
<td></td>
</tr>
<tr>
<td>Dr. Abel Barrios Blanco</td>
<td>HIV Epidemiologist</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tel.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tel.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Email:</td>
</tr>
</tbody>
</table>
Appendix 9: List of reporting sites

<table>
<thead>
<tr>
<th>Facility Code</th>
<th>Facility Name</th>
<th>Facility Type</th>
<th>Contact Officer’s Position</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>R.C1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>L.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
16. REFERENCES

i National Business Plan for Health 2008-2010. Ministry of Health of Antigua and Barbuda

ii Caribbean Cooperation in Health Phase III (CCH III) – Regional Health Framework 2010-2015. CARICOM

iii Caribbean Regional HIV and AIDS Partnership Framework, 2010-2014

iv Regional HIV/STI Plan for the Health Sector 2006-2015. PAHO


vi Consolidated Guidelines on the Use of Antiretroviral Drugs for Treating and Preventing HIV Infection – Recommendations for a public health approach. WHO. 2013


ix Meeting Report – Caribbean Technical Working Group for HIV/STI Surveillance, Port of Spain, Trinidad and Tobago, 10-12 June, 2013

x Meeting Report – Regional Consultation on HIV Epidemiologic Information in Latin America and the Caribbean, Panama City, Panama, 7-9 November 2012

xi Antigua and Barbuda Information and Communication Technologies Draft Policy. Accessed from http://www.google.dm/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CCwQFjAB&url=http%3A%2F%2Fwww.redgealc.net%2Fdownload.php%3Flen%3Des%26id%3D2756%26nbre%3DICT.pdf%26ti%3Dapplication%2Fpdf%26tc%3DContenidos&ei=RIoZU8DTOK1kAeSiYG4Bg&usg=AFQjCNHvOYouslWjUaFV3_ZT_a6mqUcgQ


xiv WHO Case Definitions Of HIV For Surveillance And Revised Clinical Staging And Immunological Classification Of HIV-Related Disease In Adults And Children. Accessed from: http://www.who.int/hiv/pub/guidelines/HIVstaging150307.pdf

xv OECS HIV/STI Guidelines, July 2013