**ST. LUCIA**

# MINISTRY OF HEALTH, WELLNESS AND ELDERLY AFFAIRS

# INTEGRATED SURVEILLANCE GUIDELINES

**SEPTEMBER 2025**

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# 1. FOREWORD

An effective health surveillance system is the cornerstone of any resilient and responsive health system. It enables the timely detection of public health threats, informs evidence-based decision-making, and strengthens our collective ability to prevent, respond to, and recover from disease outbreaks and other health emergencies.

The National Integrated Health Surveillance Manual is a pivotal step toward enhancing the functionality, coherence, and sustainability of our country's surveillance architecture. In the face of emerging infectious diseases, the rising burden of non-communicable diseases, and the challenges posed by climate change and global mobility, we must ensure that our surveillance systems are robust, flexible, and inclusive.

This manual provides a practical and standardized framework for the organization, implementation, and evaluation of surveillance activities across all levels of the health system. It consolidates key roles, reporting pathways, and syndromic surveillance protocols while encouraging a multisectoral approach to data collection and response, integrating not only clinical and laboratory services but also environmental health, agriculture, education, and other key stakeholders.

Developed through extensive consultation and technical collaboration, this document reflects a commitment to improving national health security and advancing the goals of universal health coverage. It supports frontline health workers, public health officers, program managers, and policymakers in building a unified surveillance response, where data is timely, actionable, and used to protect lives.

Let this manual serve not only as a guide but also as a catalyst for stronger collaboration, capacity building, and continuous improvement in health information systems. Together, we can ensure that every signal is heard, every threat is seen, and every community is protected.

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# 2. ABBREVIATIONS

**ARI** - Acute Respiratory Infection

**AMR** – Antimicrobial resistance

**APHE** – Acute Public Health Event

**BHP** – Bureau of Health Promotion

**CARPHA** – Caribbean Public Health Agency

**CD** – Communicable diseases

**CMO** – Chief Medical Officer

**CVO** –Chief Veterinary Officer

**CVD** – cardiovascular disease

**DM** – Diabetes Mellitus

**EWAR** – Early Warning Alert and Response WHO

**EMRS** – Electronic Medical Record System

**EHO** -Environmental Health Officer

**EHU** – Environmental Health Unit

**EBS** – Event-based surveillance

**EPI -** Expanded Programme on Immunization

**EpiU** – Epidemiology Unit

**FBD** – Food and waterborne diseases

**HAI –** Health Care associated infections

**HCF** – Health Care Facilities

**HCW** - Health Care workers

**HIS** – Health Information System

**HMIU** – Health Management Information Unit

**HIV/AIDS** – Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome

**HTN** - Hypertension

**IBS** – Indicator based surveillance

**IEC** – Information, education, and health communication

**IHR** – International Health Regulations (2005)

**IPC** – Infection Prevention and Control

**Lab** – Laboratory

**MCH** – Maternal and Child health

**MOA** – Ministry of Agriculture

**MOE** – Ministry of Education

**MOH** - Ministry of Health, Wellness and Elderly Affairs

**MOT** – Ministry of Tourism

**MOU** – Memorandum of understanding

**M&E** – Monitoring and evaluation

**NSRT** - National Surveillance and Response Team MOH

**NCD/MH** – Non-communicable diseases / Mental Health

**PAHO/WHO** – Pan-American Health Organization / World Health Organization

**PHC** – Primary Health Care (Wellness centers)

**PHEIC** – Public Health Emergency of International Concern

**PHO –** Port Health Officers

**PHN** - Public Health Nurses

**PHW** - Public Health workers

**POE** – Point of Entry to the country (ports and airports)

**RRT** – Rapid Response Team for investigation and control of an outbreak or any other APHE

**RF** – Risk factors

**SDG** – Sustainable Development Goals

**SL** – Saint Lucia

**STHC** - Secondary / Tertiary Level (Hospital)

**STI** - Sexually Transmitted Infection

**SOP** – Standard Operating Procedures

**TB** – Tuberculosis

# 3. INTRODUCTION

## 3.1. Objectives of the Guidelines

- To guide the systematic collection, analysis and dissemination of epidemiological data on the magnitude and trends, distribution and determinants of communicable diseases, non-communicable diseases, and risk factors for action.
- To define roles and responsibilities for those involved in public health surveillance.
- To provide orientation on the tools used for the reporting and verification of health-related events.
- To provide health practitioners with guidance on the management of public health related events.

## 3.2. To Whom do the Guidelines Apply?

These guidelines apply to healthcare professionals working in public and private health facilities, laboratories (labs), outreach programs that have a component of patient interaction, and special clinics including those for HIV, family planning, environmental health, surveillance at point of entries (POE) and other health services. It also applies to public health professionals responsible for interventions headed by the Ministry of Health, Wellness and Elderly Affairs (MOH) in collaboration with other ministries and organizations accordingly with International Health Regulations (2005) (IHR) and St. Lucia (SL) health-related legislation.

## 3.3. What is Health Surveillance?

The International Health Regulations (2005) define surveillance as "the systematic on-going collection, collation and analysis of data for public health purposes and the timely dissemination of public health information for assessment and public health response as necessary". Surveillance is action based, including prevention and control of any public health problem. It is an essential function of the Public Health System, inextricably linked to the public health services, including other key Sectors, and it is frequently associated with research & development (COVID-19 lessons learned have reinforced this interconnection) (Annex Graph surveillance cycle).

**Integrated Disease Surveillance**

Integrated Disease Surveillance and Response (IDSR) is a strategy which incorporates both Indicator-based surveillance (IBS) and Event-based surveillance (EBS) to facilitate early warning, alert and response (EWARS) to potential public health threat.

While IBS uses standard case definitions to identify diseases, conditions, and events, EBS relies on alerts from various sources to detect, triage and verify events.

The IDSR strategy promotes the rational use of resources by integrating and streamlining common surveillance activities, as opposed to the use of multiple surveillance systems with separate vertical activities.

**One Health Approach**

This is a framework which promotes collaboration across surveillance systems to achieve

optimal health outcomes. Using an integrated disease surveillance approach, the One Health approach collects, analyzes and shares data from the human, animal and environmental sources to coordinate and respond to outbreaks and safeguard public health.

**Types of Surveillance**

Surveillance systems can be passive, active or a combination of both.

Passive surveillance is the most common form of surveillance and occurs when laboratories, physicians, or other healthcare providers regularly report cases, diseases, or any other public health information to the local health department or MOH EpiU. These reports are based on standard case definitions for a particular disease or condition. Passive surveillance means that the healthcare provider or laboratory initiates the forwarding of the data to the MOH or Health District.

Active surveillance occurs when the collection of data from the lab, physician, community, or other healthcare provider is initiated by the Health District or EpiU. Active surveillance is often used during the practice of field epidemiology, case, or outbreak investigations, contact tracing or research studies. Active surveillance has an advantage over passive surveillance because it achieves more complete and accurate reporting. However, the draw-back is that it's more resource intensive for the public health agency that is conducting the active surveillance. It costs more, it takes more personnel, and more time to do active surveillance.

Surveillance systems can also use syndromic or etiologic information, or a combination of both.

Syndromic surveillance is particularly useful as an early alert system and is based on the reporting of different categories of clinical presentations (signs and symptoms). Syndromic surveillance better suits frequent reporting mechanisms allowing for a timely response.

Etiologic surveillance is based on the identification and characterization of disease-specific agent(s) by the laboratory and is more useful for monitoring specific disease trends.

Since clinical diagnosis is the basis of syndromic surveillance and laboratory diagnosis is the basis of etiologic surveillance, they should not be considered mutually exclusive but rather complementary. They should be combined according to circumstances and resources available.

## 3.4. Legal Framework

- The Public Health Act, No. 8 of 1975 (revised).
- The Public Health (Communicable and Notifiable Diseases) Regulations, Statutory Rules, and Orders, 1978, No. 12: This includes the surveillance of: (a) Communicable diseases under International Health Regulations, and (b) Communicable diseases and syndromes as stipulated by the Chief Medical Officer and Chief Veterinary Officer, including those required by IHR through Caribbean Public Health Agency (CARPHA) and Pan-American Health Organization / World Health Organization (PAHO/WHO).
- The Quarantine Act
- Public Health Act, Food Regulations, No. 70 of 1960, Amended by S.I. 28/1983
- Animal (Disease and Importation) Ordinance (Amendment 1994) Act replaced by Animal Health Act 2006.
- The Saint Lucia MOH Communicable Disease Manual (2006).

# 4. SURVEILLANCE PRINCIPLES

- The Health Surveillance System in principle protects the population from different health risks or diseases, by detecting any health-related problem that can cause an Acute Public Health Event that requires an immediate and integrated response. It also serves to develop prevention and control programs that promote health and wellbeing within the population.
- A key principle is to include only conditions for which surveillance can effectively lead to prevention.
- Health problems under surveillance are analyzed in association with their possible causes or determinants and in a close relation between humans, the environment, animal health (One Health), and the possible interventions for prevention and control, under an intersectoral and community approach.
- After the updates of the IHR (2005), the epidemics of the XXI Century and other Public Health Emergencies of National or International Concern, surveillance has included as a principle that "its scope is not limited to any specific disease or manner of transmission, but covering illness or medical condition, irrespective of origin or source, that presents or could present significant harm to humans".
- The Health Surveillance System is based primarily on the Health Care Facilities (outpatients, emergency services and hospitalized patients), labs, POEs and environment but also includes the professionals that provide private and public health services to the community and field work, investigation, preventive activities, and those sharing information with the Animal Health Sector.
- The complexity and diversity of different sources of data collection, from individuals and aggregate data, data transmission, processing, and analysis, using multiple complex techniques and producing timely responses**,** have created the necessity to migrate to, and use, electronic surveillance, or information systems with capacity to manage the subsystems, and the whole information from the inputs, process and analysis, and outputs.
- Surveillance systems have a general structure and subsystems because there are areas of the public health related to specialized programs, for example, syndromic and lab surveillance, Tuberculosis (TB) and Human Immunodeficiency Virus / Sexually Transmitted Infection (HIV/STI) or NCD/MH – Non-communicable diseases / Mental Health (NCD/MH), that are complementary, and at the same time, integrated in the epidemiological analysis and response at different levels.
- Surveillance is based on epidemiological categories: health-related states or events (what), persons (who), place (where), time (when), and causes, risk factors, and modes of transmission (why/how), health promotion and disease prevention.

# 5. ORGANIZATION, FUNCTIONS AND RESPONSIBILITIES BY LEVEL

## 5.1. Organization and Functions

The organization and functioning of the surveillance system in Saint Lucia has a general structure and two levels: local and national. The system has a structure and functioning based on human resources with technical capacity for developing the activities, funds, material resources and equipment, different processes, and a flow of information from the local level to the national one and feedback.

As with any system, this system has 3 steps:

Inputs, where data collection and transmission are essential.

Processing and analysis, starting in quality control of data and databases or manual reports, producing descriptive results, and integrating different sub-systems, and the application of statistical analysis, conclusions, and recommendations**.**

Outputs, dissemination of the information in different presentations to different publics, from the top to the bottom of the public health system, other institutions, and the Government. (See Annex for the mechanisms of data (and information) reporting).

### 5.1.1 Inputs: Data Reporting & collection

Syndromic Reporting

- Syndromes are to be reported based on the date the patient presents to the health facility.
- Syndromic surveillance is conducted at all of the primary and secondary healthcare facilities on island.
- Case definitions for Syndromic surveillance are contained in the annexes.
- Data on cases fitting the syndromic case definitions should be entered into the Electronic Medical Record System (EMRS) for weekly compilation and submission to the Caribbean Public Health Agency (CARPHA) by the Epidemiology Unit.
- Facilities without an EMRS must complete and submit the weekly reporting form before the close of business on Tuesday for data from the previous week.

Hospital Ward Notifications

- The submission of case notifications is a mechanism for routinely monitoring hospital admissions.
- These notifications are usually submitted by the Infection Control Nurses and consist of both syndromic and disease specific data.

- Syndromic data must be submitted weekly on the weekly reporting form before the close of business on Tuesday for data from the previous week.
- The notification of cases of communicable diseases or events of public health concern is based on the date of onset of the illness.

Laboratory Surveillance

- Although the primary role of the public health laboratory remains confirmation of etiology, their role in assisting with outbreak detection is paramount.
- The laboratory shall provide the Epidemiology Unit with a daily line list of results for ALL specimen tested (positive and negative)
- This information shall be shared in the most available format (electronic system, excel spreadsheet etc.)
- 
- Individual, case-based data (Laboratory case Notification form) must be reported, with at least the parameters described in the laboratory surveillance minimum dataset
- A list of specimen sent to CARPHA for testing MUST also be shared with the Epidemiology Unit

Event-based Surveillance

- Reports of public health threats will be communicated to the Epidemiology unit by the public through a series of channels including but not limited to:

Hotlines: using the 311 government hotline

Direct calls to the Ministry of Health

Feedback from collaborative civil society groups

Healthcare facilities

Social media monitoring

### 5.1.2 Processing and analysis

- Data on both CD and NCD will be processed and analyzed by the Epidemiology Unit
- Weekly time, place and person analysis and interpretation of communicable diseases and syndromic surveillance data by the National Epidemiology Unit is done systematically on Wednesdays.

### 5.1.3 Outputs: dissemination of the information

- A Weekly Syndromic Surveillance Report is produced and distributed to the Heads of Departments within the Ministry of Health every Wednesday, for data collected the previous week. The contents entail selected information on the situation of communicable diseases in St. Lucia. Each of the Departments is responsible for the dissemination of the report to their staff at levels.

- Whenever the health/epidemiological situation warrants (e.g., in the case of an outbreak), the Epidemiology Unit immediately communicates with relevant stakeholders and decision-makers on the matter and actions to be taken. Such situations and related interventions are also systematically reviewed and updated during the meetings of the National Surveillance and Response Team.

- On a monthly basis information on tuberculosis, leprosy, HIV and other STIs is also exchanged and disseminated, verbally mostly, at the occasion of the "Contact Tracing Meeting". This meeting gathers "Contact tracing" nurses, the physician in charge of the STI clinic, members the National Epidemiology Unit and members of the National AIDS/HIV Programme.

- On a monthly basis, the National Surveillance and Response Team will meet to review data and exchange information communicable diseases in St. Lucia .

- It is important to note that data dissemination is not the sole responsibility of the Epidemiology unit and that Heads of Departments/Units are responsible for disseminating the data to their staff at all levels.

- Ultimately, the Bureau of Health Promotion, and/or the National Epidemiology Unit are responsible for information dissemination to the media and public.

- An annual Epidemiological Report will be produced by the Epidemiology Unit.

### 5.1.4 Monitoring and Evaluation

- The National Surveillance System is to be reviewed internally every two years and externally evaluated every 4-5 years.

# 5.2. The Local Level

## 5.2.1. Components and General Functions of the Local Level:

*Components*

- Ministry of Health, Wellness and Elderly Affairs / Healthcare Services
  - (i) Primary: District Medical Officer, Public Health Nurse Supervisor, Community Health Nurse, Family Nurse Practitioners, Mental Health Practitioners, Dental Health Practitioners, Nutritionists
  - (ii) Secondary: ICN, consultants, SHO
  - (iii) Public Health: Environmental Health Officers
  - (iv) Private Healthcare Practitioners
- Ministry of Agriculture
- Ministry of Education

*General Functions*

- The timely detection, and quality collection of information from different sources.
- Reporting and transmission of data and signals to the Epidemiology Unit (EpiU) and Health Management Information Unit (HMIU).
- The processing and analysis of the information on a daily or weekly basis.
- The implementation of primary measures for prevention and control of any Acute Public Health Event (APHE) or Communicable diseases (CD)

## 5.2.2. Specific Roles and Responsibilities at the Local Level:

## Ministry of Health, Wellness and Elderly Affairs / Healthcare Services:

## Primary Health Care Facilities

### *5.2.2.1. Health Centers*

**District Medical Officers:**

- Collecting patient samples to be transported to laboratories.
- Reviewing laboratory results for tests performed.
- Accurately diagnosing patients based on clinical presentations.
- Registering patients in the Electronic Medical Record System (EMRS) based on defined syndromes.

- Collecting data on notifiable and non-notifiable communicable diseases and reporting to their supervisor Senior Medical Officer (SMO) of any suspected or confirmed cases of notifiable diseases, according to notifiable disease guidelines.
- Collecting data on non-communicable diseases (including NCD lifestyle risk factors such as smoking, level of alcohol consumption, weight and physical activity level status) and reporting to their supervisor (SMO).
- Recognizing and reporting adverse events related to medicines or vaccination to relevant personnel (specifically those within the Extended Programme on Immunization (EPI)).
- Reporting or providing accurate and timely information on patients to Medical Officers and other relevant bodies as requested.
- Participating in the Regional Outbreak Team, responsible for outbreak, case investigations, management, follow-up, and control measures. Ensuring that patients and their family members follow surveillance and response interventions during acute public health emergencies.
- Ensuring that a written report is submitted to the Epidemiology Unit following ALL case and outbreak investigations.
- Ensuring that patients and their family members follow surveillance and response interventions during acute public health emergencies.

**Public Health Nursing Supervisor (PHNS):**

The Public Health Nursing Supervisor is the nurse in charge in each health region. She supervises all the community nurses in the health region and has public health functions in case investigations acting as the lead in the absence of the District Medical Officer.

*PHNS who work in Public Health, surveillance prevention & control, including outbreaks, have the following roles and responsibilities:*

- Communicate immediately to EpiU any suspected acute public health event and start verification and assessment.
- Lead case investigations, contact tracing, isolation, quarantine, follow up and early detection of secondary cases.
- Enforce IPC measures at home and in other settings for cases in isolation and quarantine and implement preventive public health measures with contacts and the wider community. In case of an outbreak, work with the EpiU and Regional Outbreak Team for investigation and control of an outbreak or any other APHE (RRT).
- Lead case investigations under the guidance of EpiU.
- Follow-up in community of CD cases diagnosed at hospitals and provide updates/reports to EpiU at intervals as determined by EpiU.
- Periodic review of syndromic, CD, event-based surveillance (EBS), Sentinel Sites and NCD/MH data and perform basic analysis.

- **Acting roles and responsibilities:** *Role of the District Medical Officer in his/her absence.*

**Community Health Nurse:**

- Immediate notification of any suspected acute public health event to supervisor for onward notification to EpiU.
- Assist with case/outbreak investigations and contact tracing in the absence of the PHNS.
- Entry of Syndromic data into health information system.
- Collecting patient samples to aid in the completion of health assessments, to be transported to laboratories.
- Reviewing laboratory results for tests performed.
- Collecting data on notifiable and non-notifiable communicable diseases and notifying the immediate supervisor of any suspected or confirmed cases of notifiable diseases.
- Collecting data on non-communicable diseases (including NCD lifestyle risk factors such as smoking, level of alcohol consumption, weight and physical activity level status).
- Collecting perinatal data.
- Implementing surveillance activities at the community level.
- Identifying and reporting health risks and outbreaks within the community.
- Conducting community health education sessions to promote disease prevention and surveillance efforts.
- Collaborating with district medical officers and other healthcare professionals to exchange information and coordinate responses.
- Providing support and guidance to individuals and families regarding public health response in acute public health emergencies or disease outbreaks.

**Family Nurse Practitioners:**

- Immediate notification of any suspected APHE to supervisor for onward notification to EpiU
- Collecting patient samples to be transported to laboratories.
- Reviewing laboratory results for tests performed.
- Registering patients in the Electronic Medical Record System (EMRS) based on defined syndromes.
- Collecting data on notifiable and non-notifiable communicable diseases and immediately notifying their supervisor Senior Medical Officer (SMO) of any suspected or confirmed cases of notifiable diseases, according to notifiable disease guidelines.
- Collecting data on non-communicable diseases (including NCD lifestyle risk factors such as smoking, level of alcohol consumption, weight and physical activity level status).
- Collecting perinatal data.
- Reporting of any health anomalies found in patients to physician.
- Participating in outbreak investigations and control measures as per guidance from district medical officers.
- Providing education and counseling to individuals and families regarding disease prevention and surveillance efforts.

- Collaborating with other healthcare professionals to ensure accurate and timely reporting of infectious diseases.

*The family nurse practitioner can also play the role of the District Medical Officer in his/her absence.*

**Infection Prevention and Control (IPC) Nurses/ Nurses:**

- Serves as the liaison between the EpiU and their respective facility and community for the management and control of communicable diseases and/or acute public health event.
- Collecting patient samples to be transported to laboratories.
- Reviewing laboratory results for tests performed.
- Collecting data on notifiable communicable diseases and notifying EpiU of any reportable diseases in a manner.
- Collating data on notifiable communicable diseases and analyzing trends.
- Collaborate with other healthcare workers, to provide specialist knowledge and expert advice on types of infections identified in patients and how the infections should be treated.
- Monitoring staff infection related to treatment of patients and developing measures to control these.
- Monitoring and alerting any suspected severe respiratory infections (SARI) cases.
- Conducting outbreak investigations
- Implementing and overseeing infection control measures
- Monitoring compliance of HCW with IPC protocols
- Educating both healthcare workers and patients on infection prevention and control and the importance of it.
- Assist in implementing and enforcing infection prevention and control measures.
- Assist in the training of healthcare staff (including the development of material needed for training sessions)
- Assist in the coordination of response strategies during outbreaks.

#### *5.2.2.2. Polyclinics:*

**Doctors:**

- Collecting patient samples to be transported to laboratories.
- Reviewing laboratory results for tests performed.
- Accurately diagnosing patients based on clinical presentations.
- Registering patients in the Electronic Medical Record System (EMRS) based on defined syndromes.
- Registration of all NCD/MH patients and patients with notifiable communicable diseases in EMRS.

- Collecting data on notifiable and non-notifiable communicable diseases and immediately notifying their supervisor Senior Medical Officer (SMO) of any suspected or confirmed cases of notifiable diseases, according to notifiable disease guidelines.
- Collecting data on non-communicable diseases (including NCD lifestyle risk factors such as smoking, level of alcohol consumption, weight and physical activity level status).
- Recognizing and reporting notifiable diseases to the EpiU.
- Recognizing and reporting adverse events related to medicines or vaccination to relevant personnel (specifically those within the Extended Programme on Immunization (EPI)).
- Verification of all epidemiologic surveillance data collected.
- Analysis of patient data.
- Reporting maternal and neonatal deaths, other maternal and neonatal events, and near miss cases to PHC Centers with priority.
- Participating in the Regional Outbreak Team, responsible for outbreak/case investigations , management, follow-up, and control measures.
- Participating in surveillance activities by sharing accurate and timely information on patients to relevant bodies.
- Collaborating with public health officers in outbreak investigations and control measures.
- Ensuring that patients and their family members follow surveillance and response interventions during APHE.

**Accident and Emergency:**

- Verbally report any unusual cases or events to the medical surveillance officer.

**Nurses:**

- Collecting patient samples for transport to lab or storage.
- Reviewing laboratory results for tests performed.
- Registering patients in the Electronic Medical Record System (EMRS) based on defined syndromes.
- Registration of all NCD/MH patients and patients with notifiable communicable diseases in EMRS.
- Collecting data on notifiable and non-notifiable communicable diseases.
- Collecting data on non-communicable diseases (including NCD lifestyle risk factors such as smoking, level of alcohol consumption, weight and physical activity level status).
- Recognizing and reporting notifiable diseases to doctor(s).
- Recognizing and reporting adverse events related to medicines or vaccination to doctors.
- Participating in surveillance activities by providing accurate and timely information on patients to the doctor(s).

- Collaborating with public health officers in outbreak investigations and control measures.
- Ensuring that patients and their family members follow surveillance and response interventions during APHE.

**Infection Prevention and Control (IPC) Nurses/ Nurses:**

- Serves as the liaison between the EpiU and hospital for the management and control of communicable diseases and/or APHE
- Assists the EpiU in case investigations and/or outbreaks at the hospital
- Collecting patient samples to be transported to laboratories.
- Reviewing laboratory results for tests performed.
- Collecting data on notifiable communicable diseases.
- Collating data on notifiable communicable diseases and analyzing trends.
- Collaborate with other healthcare workers, to provide specialist knowledge and expert advice on types of infections identified in patients and how the infections should be treated.
- Monitoring staff infection related to treatment of patients and developing measures to control these.
- Monitoring and alerting any suspected severe respiratory infections (SARI) cases to the doctor/nurses/ epidemiology unit.
- Conducting outbreak investigations
- Implementing and overseeing infection control measures
- Monitoring compliance with IPC protocols
- Educating both healthcare workers and patients on infection prevention and control and the importance of it.
- Assist in implementing and enforcing infection prevention and control measures.
- Assist in the training of healthcare staff (including the development of material needed for training sessions)
- Assist in the coordination of response strategies during outbreaks.

**Lab Professionals:**

- Training healthcare workers on sample collection techniques.
- Participate as a member of Regional Outbreak teams
- Collecting laboratory samples in a timely manner, ensuring that control measures are taken, so that samples are viable.
- Analyzing laboratory sample (serology (HIV, syphilis) serology, urinalysis, urine HCG) to confirm disease diagnoses.
- Identifying / confirming cases of infectious diseases.

- Reporting cases of infectious diseases (results derived from analysis of samples)
- Developing antibiograms from laboratory data.
- Reporting of antibiogram results with EpiU and other public health authorities.
- Assisting in APHE or outbreaks by timely testing and analysis of samples.

#### *5.2.2.3. Mental Health Practitioners:*

**Psychotherapist**

- Identification, registration in the EMRS and notification in the form priority NCD (6.3).
- Update MH patient register in EMRS.
- Detect, identify and report any notifiable CD and investigate if it's part of a cluster, outbreak or an acute public health emergency.
- Report on follow-up of confirmed cases.
- Assist in field investigations and public health measures, follow up, and detection of secondary cases.
- Report immediately any case of maternal and neonatal death, if any.
- Conduct assessments and screenings to identify individuals at risk of mental health disorders.
- Monitor and track mental health conditions and symptoms in individuals.
- Develop and implement treatment plans and interventions based on surveillance data.
- Offer therapy sessions to individuals requiring mental health support.
- Collaborate with other mental health professionals to ensure coordinated care and follow-up.
- Document and maintain accurate records of surveillance and treatment activities.
- Provide education and support to individuals and their families regarding mental health disorders.
- Contribute to research studies and data collection efforts related to mental health surveillance.
- Stay updated on the latest developments and best practices in mental health surveillance.

**Psychiatrist**

- Identification, registration in the EMRS and notification in the form priority NCD (6.3).
- Update MH patient register in EMRS.
- Report on follow-up of confirmed cases.
- Assist in field investigations and public health measures, follow up, and detection of secondary cases.

- Report immediately any case of maternal and neonatal death, if any.
- Diagnosing and classifying mental health disorders based on surveillance data and clinical assessments.
- Monitor effectiveness and side effects of medication prescribed.
- Provide counseling and psychotherapy to individuals with mental health disorders.
- Collaborate with other healthcare professionals to develop comprehensive treatment plans.
- Conduct psychiatric evaluations and risk assessments in emergency situations.
- Continuously monitor and track changes in mental health conditions, adjusting treatment plans accordingly.
- Contribute to research studies and studies related to mental health surveillance and interventions.
- Provide training and mentorship to other mental health professionals.
- Advocate for policy changes and improvements in mental health surveillance and care.

**Community mental health nurses:**

- Conduct regular visits and assessments in the community, identifying individuals with mental health concerns.
- Monitor and track mental health conditions in the community and detect any potential outbreaks or clusters.
- Provide community-based support and interventions to individuals with mental health disorders.
- Coordinate and collaborate with other healthcare providers to ensure comprehensive care.
- Educate and raise awareness about mental health issues within the community.
- Assist in the development and implementation of community-based mental health programs and initiatives.
- Document and report surveillance data to relevant authorities and organizations.
- Conduct follow-up visits and evaluations to monitor progress and adjust interventions.
- Participate in training and professional development activities related to mental health surveillance and care.

#### *5.2.2.4. Dental Health Practitioners:*

**Dental Surgeons**

- Collaborate with various healthcare professionals to obtain timely and relevant data on disease trends to ensure effective monitoring and control of diseases.
- Collecting data on NCDs, caries, fillings, losses, periodontitis and oral cancers.
- Provide patient data, including diagnosis, treatment, and outcomes to other healthcare professionals; and to Epidemiology Unit as needed.
- Report cases of specific diseases or conditions of interest (dental caries, fillings and losses, periodontitis and oral cancer) to the surveillance system monthly.
- Notifying NCD (Diabetes Mellitus, hypertension, cardiovascular disease) and CDs monthly to Epidemiology Unit.
- Report immediately to the EpiU the detection of an outbreak or acute public health emergency.

**Dental Hygienists/Dental Assistants/ Dental Therapists:**

- Collect patient data on NCDs, caries, fillings, losses, periodontitis and oral cancers.
- Identify and report oral diseases or conditions that may have public health implications.
- Educating patients on oral diseases and the importance of preventative care

**Risk Communication Specialists:**

- Collaboration with Epi-Unit focused on effectively disseminating information to dental surgeons and the public regarding disease outbreaks, prevention strategies, and surveillance updates.
- Ensuring clear and timely communication to promote awareness and facilitate appropriate actions.

**Quality Assurance Coordinator:**

- Ensuring the accuracy and timeliness of data reported by dental surgeons and other sources.
- Performing regular audits to identify discrepancies, providing feedback, and implementing corrective measures.
- Coordinating training programs to improve data reporting practices.

Note: Overall, the collaborative efforts of dental surgeons, data analysts, epidemiologists, public health authorities, risk communication specialists, and quality assurance coordinators are essential for the effective epidemiological surveillance of dental diseases. By monitoring and tracking trends, outbreaks, and risk factors, these professionals facilitate evidence-based decision-making to improve oral health outcomes.

#### *5.2.2.5. Nutritionists:*

**Nutrition Officers / Nutritionists:**

- Report immediately the detection of APHE.
- Monitoring and promoting nutritional health within the community.
- Contribute to monitoring disease patterns related to nutrition by detecting and reporting risk factors for NCDs.
- Providing education on disease prevention through proper nutrition
- Detection and reporting of undernutrition in children and nursing mothers to MCH services.

## Secondary Health Care Facilities

#### *5.2.2.6. Hospitals:*

**Senior House Officers.**

- Collecting patient samples to be transported to laboratories.
- Reviewing laboratory results for tests performed.
- Accurately diagnosing patients based on clinical presentations.
- Registering patients in the Electronic Medical Record System (EMRS) based on defined syndromes.
- Registration of all NCD/MH patients and patients with notifiable communicable diseases in EMRS.
- Collecting data on notifiable and non-notifiable communicable diseases.
- Collecting data on non-communicable diseases (including NCD lifestyle risk factors such as smoking, level of alcohol consumption, weight, and physical activity level status).
- Function of the infection control nurse
- Recognizing and reporting adverse events related to medicines or vaccination to relevant personnel (specifically those within the Extended Programme on Immunization (EPI)).
- Participating in surveillance activities by sharing accurate and timely information on patients to relevant bodies.
- Collaborating with public health officers in outbreak investigations and control measures.
- Ensuring that patients and their family members follow surveillance and response interventions during APHE.

**Accident and Emergency Physician:**

- Verbally report any unusual cases or events to the medical surveillance officer.

**Nurses:**

- Collecting patient samples for transport to lab or storage.
- Reviewing laboratory results for tests performed.
- Registration of all NCD/MH patients and patients with notifiable communicable diseases in EMRS.
- Recognizing and reporting notifiable diseases to doctor(s).
- Recognizing and reporting adverse events related to medicines or vaccination to doctors.
- Participating in surveillance activities by providing accurate and timely information on patients to the doctor(s).
- Collaborating with public health officers in outbreak investigations and control measures.
- Ensuring that patients and their family members follow surveillance and response interventions during APHE.

**Infection Prevention and Control (IPC) Nurses/ Nurses:**

- Serves as the liaison between the EpiU and hospital for the management and control of communicable diseases and/or APHE
- Assists the EpiU in case investigations and/or outbreaks at the hospital
- Collecting patient samples to be transported to laboratories.
- Reviewing laboratory results for tests performed.
- Collecting data on notifiable communicable diseases and defined syndromes and notifying the Epidemiology Unit via case notification form.
- Collating data on notifiable communicable diseases and analyzing trends.
- Collaborate with other healthcare workers, to provide specialist knowledge and expert advice on types of infections identified in patients and how the infections should be treated.
- Monitoring staff infection related to treatment of patients and developing measures to control these.
- Monitoring and alerting any suspected severe respiratory infections (SARI) cases to the doctor/nurses/ epidemiology unit.
- Conducting outbreak investigations
- Implementing and overseeing infection control measures
- Monitoring compliance with IPC protocols
- Educating both healthcare workers and patients on infection prevention and control and the importance of it.
- Assist in implementing and enforcing infection prevention and control measures.
- Assist in the training of healthcare staff (including the development of material needed for training sessions)
- Assist in the coordination of response strategies during outbreaks.

**Lab Professionals:**

- Immediate report cases of notifiable CD that are considered in IHR (6.4.1.1), epidemic-prone diseases or cases in an outbreak or APHE.
- Weekly reporting confirmed cases of CD diagnosed in the laboratory (6.4.1.1 and 6.4.1.2) or samples sent outside (CARPHA).
- Weekly reporting includes a line list of cases with demographic, diagnosis, type of diagnostic test and contact information.
- Immediate minimal reporting of errors in any case notified.
- Monthly report for Influenza, SARS Cov2 and other viral ARI & genomic surveillance (referring samples outside).
- Monthly report of identified AMR patterns and indicators.

- Training healthcare workers in sample collection techniques.
- Participating as an integral part of Regional Outbreak teams
- Providing guidance and SOP for sample collection and transport.
- Collecting laboratory samples in a timely manner, ensuring that control measures are taken, so that samples are viable.
- Analyzing laboratory samples to confirm disease diagnoses.
- Identifying / confirming cases of infectious diseases
- Reporting cases of infectious diseases (results derived from analysis of samples)
- Developing antibiogram from laboratory data.
- Reporting of antibiogram results with Epidemiology Unit and other public health authorities.
- Assisting in APHE or outbreaks by timely testing and analysis of samples.

#### *5.2.2.7. Public Health*

**Environmental Health Officer/ Vector Control (EHO):**

- Assessment of environmental health risks and outbreaks / acute public health emergencies through sanitary inspections including those related to vector control, food safety, natural and other disasters, water quality, air quality and mold.
- Investigation and control of disease outbreak related to vectors, lack of food safety, disasters, poor water quality, poor air quality and mold.

- Investigation of complaints that are potential health risks.
- Participate in the Regional Outbreak team, responsible for case/outbreak investigations. Officers from Vector Unit, Food Unit, and Port Health will be alerted as necessary based on the identified threat.
- Officers will assist with contact tracing, quarantine, follow up, isolation and early detection of secondary cases, IPC measures at home or other settings, preventive public health measures with contacts and community.
- Environmental sampling (food, water and wastewater, vector, air quality, mold).
- Applying enforcement and control of potential APHE.
- Developing IEC in community and intersectoral activities.
- Integrated vector management including surveillance.
- Water monitoring which relates to the following roles and responsibilities:
- **Vector Identification and Surveillance:** They identify and monitor the presence, abundance, and distribution of disease-carrying vectors like mosquitoes, ticks, or sandflies. This involves conducting regular field surveys, setting up traps, and collecting samples for analysis.

- **Data Collection and Analysis:** Collecting relevant data on vector populations, breeding sites, and disease incidence. Maintain databases, develop data collection tools, and perform data analysis to identify trends and patterns. Data will be shared with the EpiU on a monthly basis.

- **Disease Outbreak Investigations:** , conduct investigations to determine the source, identify potential breeding sites, and assess transmission patterns of an outbreak or a suspected outbreak of a vector-borne disease. They also collaborate with public health officials and medical professionals to collect patient data for further analysis.

- **Interventions and Control Measures:** Based on the surveillance data, EHOs (Vector Control) develop and implement effective control strategies to reduce the transmission of vector-borne diseases. This involves planning and executing mosquito control activities, such as larval source reduction, insecticide spraying, and biological control methods like introducing predator species.

- **Public Education and Awareness:** They play a key role in public education and awareness campaigns. Vector Control Officers provide information on disease prevention measures, demonstrate proper use of personal protective measures, and educate communities on the importance of eliminating breeding sites in and around their homes.

- **Collaboration and Coordination:** Vector Control Officers collaborate with other public health officials, entomologists, healthcare providers, community organizations and EpiU to ensure a coordinated response to vector-borne diseases. This includes sharing surveillance data, participating in training programs, and contributing to integrated vector management strategies.

- **Capacity Building:** They also contribute to capacity building efforts within the organization or community by training and educating other staff members, providing guidance on vector control techniques, and disseminating best practices for surveillance and control.

- **Research and Innovation:** Some Vector Control Officers engage in research activities to help improve the understanding of vector biology, disease transmission dynamics, and control measures. They may conduct experiments, develop new interventions, or test the effectiveness of novel vector control methods.

#### *5.2.2.8. Private Health Services:*

**Doctors:**

- Collecting patient samples to be transported to laboratories.
- Reviewing laboratory results for tests performed.
- Accurately diagnosing patients based on clinical presentations.
- Registering patients in the Electronic Medical Record System (EMRS) based on defined syndromes.
- Registration of all NCD/MH patients and patients with notifiable communicable diseases in EMRS.
- Collecting data on notifiable and non-notifiable communicable diseases.
- Collecting data on non-communicable diseases (including NCD lifestyle risk factors such as smoking, level of alcohol consumption, weight, and physical activity level status).
- Defining if the patient is part of a cluster, outbreak or an APHE is occurring and reporting immediately (EBS) to the Epidemiology Unit.
- Recognizing and reporting notifiable diseases to the Epidemiology Unit within the timeline as stipulated in Table 6.3.2 Periodicity and Management of Information.
- Recognizing and reporting adverse events related to medicines or vaccination to relevant personnel (specifically those within the Extended Programme on Immunization (EPI)).
- Verification of all epidemiologic surveillance data collected.
- Analysis of patient data.
- Reporting maternal and neonatal deaths, other maternal and neonatal events, and near miss cases to PHC Centers with priority.

- Participating in surveillance activities by sharing accurate and timely information on patients to relevant bodies.
- Collaborating with public health officers in outbreak investigations and control measures.
- Ensuring that patients and their family members follow surveillance and response interventions during APHE as per the guidance of the Ministry of Health.

**Accident and Emergency:**

- Collect and report data on cases of road traffic injuries and violence (gender -based violence, interpersonal violence, suicide, and rape).

**Nurses:**

- Collecting patient samples for transport to lab or storage.
- Reviewing laboratory results for tests performed.
- Registering patients in the Electronic Medical Record System (EMRS) based on defined syndromes.
- Registration of all NCD/MH patients and patients with notifiable communicable diseases in EMRS.
- Collecting data on notifiable and non-notifiable communicable diseases.
- Collecting data on non-communicable diseases (including NCD lifestyle risk factors such as smoking, level of alcohol consumption, weight and physical activity level status).
- Recognizing and reporting notifiable diseases to doctor(s).
- Recognizing and reporting adverse events related to medicines or vaccination to doctors.
- Participating in surveillance activities by providing accurate and timely information on patients to the doctor(s).
- Collaborating with public health officers in outbreak investigations and control measures.
- Ensuring that patients and their family members follow surveillance and response interventions during APHE.

### *5.2.2.9. Ministry of Agriculture (MOA) – Livestock Services Division (Local Level):*

**Livestock Extension Officers:**

- Carrying out Farm visits at each Agricultural district/region for detecting and reporting of any animal health issues and potential APHE
- Reporting to Livestock Services Division any APHE or Zoonosis
- Sampling food for Salmonella and Avian Influenza Surveillance

**Animal Health Officers and Veterinary**

- Carrying out Farm visits at each Agricultural district/region for detecting and reporting of any animal health issues and potential APHE
- Reporting to Livestock Services Division any APHE or Zoonosis.
- Sampling food for Salmonella and Avian Influenza Surveillance.
- Nominated members serve on the National Surveillance and Response Team and forms part of the RRT for events related to human-animal interface.

#### *5.2.2.10. Ministry of Education (MOE) and schools:*

**School Safety Coordinator:**

- Identify and monitor signals of potential acute public health emergencies related to notifiable communicable diseases at schools. Identify and monitor signals of potential acute public health emergencies related to other communicable diseases at schools.
- Identify and monitor signals of potential acute public health emergencies related to non-communicable diseases at schools.
- Once a signal is detected, communicate to the supervisor and nearest healthcare facility and transmitted through EBS to the EpiU, EHU or MOH\Hotline. EpiU\EHU and Public Health Nurse Supervisor verify the signal and do assessment.

**Family Life educators/Health Educators**

- Report APHE to EpiU and Bureau of Health Promotion (BHP).
- Assist the regional outbreak investigation teams.
- Prepare interventions and response to APHE.

# 5.3. National Level

## 5.3.1 Components and General Functions of the National Level:

The national level has multiple components and subsystems, roles, and responsibilities:

*Components*

- The MOH, Chief Medical Officer (CMO), Departments, Units and Programs (see 5.3 and organogram of MOH in 7).
- National Health Lab
- The National Hospitals
- Blood Bank
- The Ministries and Institutions that practice collaborative surveillance, prevention, and control with MOH: MOA (Animal Health and Food Security), MOE, Ministry of Tourism (MOT), Police, The Water Supply-Wastewater-Solid Waste Sector, those working at the point of entry to the country - ports and airports (POE): Immigration, Customs, Port Services, Veterinary Inspection, Airlines, Transportations, and National Emergency Management Organization (NEMO).

## 5.3.2. Specific Roles and Responsibilities at the Local Level:

### *5.3.2.1. Epidemiology Unit (EpiU)*

EpiU staff are under the CMO supervision and coordinate closely with MOH Departments, Units, Programs, National Labs, and Hospitals, to develop the surveillance system . They have two different general responsibilities: administrative and technical.

**Epidemiologists:**

- Supervising the reception, processing, and integration of data on notifiable communicable diseases from Hospitals, Polyclinics and Health Centers Facilities, Laboratories; and other areas periodically (6.3.3.1).
- Supervising the reception, processing, and integration of data on other communicable diseases of interest from Hospitals, Polyclinics and Health Centers Facilities, Laboratories; and other areas periodically (6.3.3.1).
- Supervising the reception, processing, and integration of data on non-communicable diseases from Hospitals, Polyclinics and Health Centers Facilities, Laboratories; and other areas periodically (6.3.3.1).

- Supervising the reception, processing, and integration of data on injuries including traffic accidents, gender-based violence and others from Hospitals, Polyclinics, Health Centers, Laboratories; and other ministries periodically (6.3.3.1).
- Supervise Sentinel Site Surveillance and its implementation (SARI/Syndromic).
- Coordinate with the Environmental Health Unit to receive sample results on a weekly basis for water and food.
- Review and analysis of data, organization of investigation of cases, identification of clusters, outbreak (6.1).
- Guiding the development of the early warning system, reviewing its outputs, and deciding the response
- Receiving and advising on investigation feedback information and completing further analysis as needed.
- Monitoring trends in morbidity, mortality and risk factors related to notifiable communicable diseases.
- Monitoring trends in morbidity, mortality and risk factors related to other communicable diseases of interest.
- Monitoring trends in morbidity, mortality and risk factors related to non-communicable diseases.
- Monitoring trends in morbidity, mortality and risk factors related to injuries including traffic accidents, gender-based violence and others.
- Supervising production and dissemination of the weekly surveillance bulletin, other periodic reports on public health surveillance.
- Characterizing the current situation, declaring the outbreak, informing the relevant MoH area, assisting in formulation of a public health response, monitoring the impact of the interventions, and declaring the of end of the outbreak.
- Participating and contributing to Health Situation Analysis and Health System Annual Report with surveillance and response data and information.
- Reporting situations of international concern through an international health regulation channel - PAHO/WHO.
- Based on current health priorities and trends, to plan, integrate, and implement national surveillance systems and subsystems.
- Developing / updating surveillance manuals, guidelines, and standards operating procedures.

- Monitoring event-based surveillance
- Responsible to routinely reach out to other ministries – Ministry of Agriculture and veterinarians (monitor certain zoonotic diseases of concern to human health)
- Provision of inputs in the definition and organization of information platforms for surveillance and necessary organization levels, indicators, tools, forms, and analytical outputs.
- Leading the surveillance pillar in the health emergency operation center in response to health emergencies and disasters.
- Supervise the surveillance of pharmacovigilance, perinatal mortality, and other specialized surveillance such as injury-based surveillance (gender-based violence; traffic accidents).

**Surveillance Officers**

- Collect and review/verify surveillance data obtained from personnel within and external to the EpiU.
- Collaborate with the epidemiologist(s) and other team members to conduct data analysis including real-time analysis of outbreak data, to perform epidemic forecasting and detection.
- Effectively facilitate the coordination of response activities for epidemic-prone diseases.
- Assess and evaluate the implementation of surveillance activities by conducting regular field supervision visits, this will help identify gaps so that recommendations can be made, and corrective actions can be taken based on key performance indicators.
- Collaborate with the epidemiologists, research officers and other MOH departments to co-develop surveillance guidelines, manuals, and tools to improve disease surveillance at community, local, and national levels.
- Manage and coordinate surveillance technical activities and outbreak / health emergency programs.
- Assist / facilitate the implementation of the International Health Regulations which includes participating in verifying and assessing the risk on reported public health events.
- Facilitate training on surveillance of epidemic prone diseases on topics of detection and notification, investigation, data management / analysis, and rapid response to build capacity and strengthen surveillance systems.

**Research Officers**

- Collaborating with epidemiologist(s) and research officers to collate and verify data to be analysed.
- Ensuring that accurate data is available for analysis by monitoring the cleaning and coding of database.
- Supporting EpiU team members by facilitating database sharing from field sites to data management team (epidemiologists).
- To assist in the analysis of data, undertaking advanced analysis in busy periods.
- Specifically, for the analysis of NCDs, being involved in trying to find associations between risk factors and incidence, and risk factors and prevalence.
- Actively participating in epidemiological research or studies including those on disease trends on a community, local, national, regional, and international level.
- Developing research protocols on areas of implementation.
- Provision of support in the development of standard operating procedures for surveillance activities.
- Contribute to the planning and development of presentations and material for workshops, and training to build capacity and improve surveillance efforts.
- Development and monitoring of platforms utilized for data collection, data aggregation, data analysis, data dissemination and collaboration.
- Assist in the development of reports for sharing results.
- Assist in the dissemination of scientific and evidence-based technical information and knowledge.

**Biostatistician:**

- Collecting and collation of surveillance and statistical data given by team members, and other internal and external units to the MOH.
- Processing and verification of data received.
- Leading data analysis (morbidity, mortality, and risk factors).
- Development of predictions or projections from data to assist with surveillance and other health related planning.
- Assessing trends in morbidity, mortality and risk factors related to notifiable communicable diseases.

- Assessing trends in morbidity, mortality and risk factors related to non-notifiable communicable diseases.
- Assessing trends in morbidity, mortality and risk factors related to notifiable communicable diseases.
- Aid in the periodical and general surveillance reports.
- To aid with the Sentinel sites monthly reporting (this relates to integrated data processed by members of the HMIU).
- Collaborating with other team members to send feedback to local and national levels (CMO, HMIU, MOH Units, program or project leads and others).
- Collecting and collation of surveillance and statistical data given by team members, and other internal and external units to the MOH.

**Data Entry Clerks:**

- Accurately input surveillance data into the computer system in a timely manner using various software applications utilised within the EpiU.
- Verify the accuracy of the data entered by having SOPs for checks and making any necessary corrections.
- Aid in the basic analysis of data to identify any patterns or trends.
- Ensure that all records are maintained, and data is properly organized and stored.
- Consistently communicate with other members of the EpiU to ensure that the data is entered correctly.
- Ensure all new data entry clerks are trained in – inputting data, ensuring data quality, basic analysis, maintaining records, and storing / organizing data.

#### *5.3.2.2. Public Health Laboratory*

**Lab Professionals and Specialists:**

- Immediately confirm cases of notifiable disease that are considered in International Health Regulations Annex II (6.4.1.1), epidemic-prone diseases or cases as part of an outbreak to EpiU.
- Weekly reporting of confirmed cases of notifiable communicable diseases to EpiU diagnosed in the laboratory (6.4.1.1 and 6.4.1.2).
- Weekly reporting of confirmed cases of notifiable communicable diseases to external agencies as agreed upon with EpiU.

- Weekly reporting of confirmed cases of priority communicable diseases to EpiU, where samples are sent outside the country and results received by the laboratory.
- Immediate reporting of errors in diagnosis of any case previously notified.
- Weekly reporting to EpiU including a line list of cases with demographic information of case, diagnosis, type of diagnostic test and contact information of case.
- Monthly report for Influenza, SARS Cov2 and other acute viral respiratory infections, including genomic surveillance (referring samples outside) from Sentinel Sites to EpiU and Infectious Diseases Unit.
- Monthly report of identified antimicrobial resistance patterns and indicators to the hospital services and EpiU.
- Implementation of lab techniques that satisfy the needs of the medical services and surveillance in close coordination with MOH. (See updates lab manuals in bibliography).
- Provide the guidelines and SOP for sample collection and transport related to syndromic Surveillance and possible etiologies for communicable diseases, water and food or other chemical agents.
- Training new staff in the collection of samples
- Providing feedback for sample quality to HC/Hospital sending it
- Ensuring adherence to international norms of transport and shipping when sending samples to labs outside of the country.
- As a member of the outbreak investigation team, in the event of an outbreak, ensure proper sample collection, preservation, and transport, and confirm the etiologic or causative agent or request international technical support.

**Medical Technologists**

- Collection and testing of biological samples to diagnose and treat different diseases.
- Prepare and examine specimen samples for abnormalities and communicate test results to lab professionals and specialists, and other medical professionals.
- Ensuring that operations are conducted in adequate safety procedures and that they are extensively knowledgeable of medical technology and equipment.
- Verification of test results
- Write-up of lab reports and sharing of information with relevant bodies.
- Maintenance of laboratory inventory
- Record keeping – keep statistical records of laboratory records.
- Assess and maintain laboratory equipment.

**Data Entry Clerks:**

- Accurately input laboratory data into the computer system in a timely manner using various

software applications utilised.

- Verify the accuracy of the data entered by having SOPs for checks and making any necessary corrections.
- Aid in the basic analysis of data to identify any patterns or trends.
- Ensure that all records are maintained, and data is properly organized and stored.
- Consistently communicate with Medical Technologists and Laboratory Professionals / Specialists to ensure that the data is entered correctly.
- Ensure all new data entry clerks are trained in – inputting data, ensuring data quality, basic analysis, maintaining records, and storing / organizing data.

#### *5.3.2.3. Blood bank*

**Lab professionals / Blood Bank Specialists:**

- Immediately confirm cases of notifiable disease that are considered in International Health Regulations Annex II (6.4.1.1), epidemic-prone diseases or cases as part of an outbreak to EpiU.
- Weekly reporting of confirmed cases of notifiable communicable diseases to EpiU diagnosed in the laboratory (6.4.1.1 and 6.4.1.2).
- Weekly reporting of confirmed cases of notifiable communicable diseases to external agencies as agreed upon with Epidemiology Unit.
- Weekly reporting of confirmed cases of priority communicable diseases to EpiU, where samples are sent outside the country and results received by the laboratory.
- Immediate reporting of errors in diagnosis of any case previously notified.
- Weekly reporting to EpiU including a line list of cases with demographic information of case, diagnosis, type of diagnostic test and contact information of case.
- Monthly report for Influenza, SARS Cov2 and other acute viral respiratory infections, including genomic surveillance (referring samples outside) from Sentinel Sites to EpiU and Infectious Diseases Unit.
- Monthly report of identified antimicrobial resistance patterns and indicators to the hospital services and EpiU.
- Implementation of lab techniques that satisfy the needs of the medical services and surveillance in close coordination with MOH. (See updates lab manuals in bibliography).
- Provide the guidelines and SOP for sample collection and transport related to syndromic Surveillance and possible etiologies for communicable diseases, water and food or other chemical agents.
- Training new staff in the collection of samples
- Providing feedback for sample quality to HC/Hospital sending it
- Ensuring adherence to international norms of transport and shipping when sending samples to labs outside of the country.

- As a member of the outbreak investigation team, in the event of an outbreak, ensure proper sample collection, preservation, and transport, and confirm the etiologic or causative agent or request international technical support.

#### *5.3.2.4. Primary Health Care Services*

**Unit Chief**

- Collecting patient samples for transport to lab or storage.
- Reviewing laboratory results for tests performed.
- Coordinate the investigation and confirmation of any reported case of fever and rash or acute flaccid paralysis, in coordination with the EpiU.
- Conduct contact tracing and implement public health measures in coordination with EpiU and institutions.
- Alert on detection of any notifiable CD to CARPHA and PAHO/WHO.
- Analyze reported information about SARI, hospitalizations, and confirmed CD cases.
- Send feedback to the local level.

**Community Nursing Service - EPI Manager**

- Collecting patient samples for transport to lab or storage.
- Reviewing laboratory results for tests performed.
- Conduct audit and review of peri-natal mortality and analyze mortality under 5 years old, and peri-natal mortality.
- Send feedback to local level.
- Aid in the investigation and confirmation of any reported case of fever and rash or acute flaccid paralysis, in coordination with the EpiU.
- Monitor vaccine-preventable disease incidence and trends reported daily, weekly, monthly, and quarterly.
- Monitor the vaccination levels and coverage daily, weekly, monthly, and quarterly or ad-hoc basis.
- Assist in alerting on detection of any notifiable communicable diseases to CARPHA and PAHO/WHO.
- Monitor and investigate ESAVI (adverse events following vaccination).
- Report to CARPHA and PAHO/WHO on vaccine coverage, adverse events following vaccination periodically.

#### *5. 3.2.5. Chronic Non-Communicable Diseases/Mental Health Unit*

**Senior Medical Officer for Non-Communicable Diseases:**

- Receiving information periodically to monitor and evaluate Non-Communicable Diseases/Mental Health Programs, and other health services to determine incidence and prevalence of specific conditions.

- Reviewing analyzed and integrated data and information with the Epidemiology Unit and others.

- Collaborate with communicable disease team when comorbidities is determined to increase the risk for acute public health emergencies.

- Producing periodic non-communicable disease reports with the support of the Health Management Information Unit and Epidemiology Unit.

- Sending feedback to local and national levels.

- Preparing the indicators for Monitoring & Evaluating NCD/Mental Health/Risk Factors in accordance with the global monitoring framework for NCDs and Intersectoral National Action Plan (WHO goals).

- Implementing STEPS Surveys (every 5 years) and Rapid Mobile Phone Survey on NCDs (RaMPS) once a year for risk factors, morbidity, and health services management with Epidemiology Unit/CMO.

- To liaise with Mental Health Focal Point to create NCD/Mental Health protocols and guidelines.

- Analyzing a=cancer, hypertension, and diabetes mellitus registers (HEARTS) every six months

- Overseeing the application of the Global school health surveys (children ages 13-15) and the Global Youth Tobacco Survey (GYTS) every 4 years

- Implementation of programs to build capacity with staff and programs / campaigns geared towards the reduction of non-communicable diseases.

**Focal Point for MH:**

- Receiving information periodically to monitor and evaluate Mental Health Programs.

- Reviewing analyzed and integrated data and information with the Senior Medical Officer for Non-Communicable Diseases, Epidemiology Unit, and others.

- Producing periodic mental health reports with support of the Health Management Information Unit and Epidemiology Unit.

- Preparing and implementing responses for mental health and psychosocial support services (MHPSS) during emergencies in collaboration with Rapid Response Teams

- Preparing reports disseminate and provide feedback to local and national levels.

- Facilitating and or conducting training in Mental Health Gap Action Programme (mhGAP) and Psychological First Aids and other areas to improve capacity in mental health at the community level.

- Liaise with NCD coordinator to create NCD/Mental Health protocols and guidelines.

- Assisting with the application of the WHO Atlas and the WHO AIMS surveys.

### *5.3.2.6. Infectious Diseases Programs*

**Senior Medical Officer for Infectious Diseases**

- Receiving and reviewing data on TB, Leprosy, HIV and other STIs from the Epidemiology unit periodically to monitor disease trends and risk factors.
- During acute public health emergencies of infectious origin
    - defining interventions based on evidence.
    - working with the MoH to agree on the surveillance indicators to be collected.
    - assess the impact of response along with the Epidemiology Unit
- 
- Producing reports with support of the HMIU and EpiU.
- Responsible for enhanced surveillance including case by case review of infectious diseases that the country has listed for elimination.
- Sending feedback on disease trends and risk factors to the Epidemiology Unit
- Sending feedback for enhanced surveillance including case by case review of infectious diseases that the country has listed for elimination to the local level
- Assist the Epidemiology Unit in verification of suspected events of infectious origin of international concern.
- Ensuring that the CD surveillance Guidelines are in accordance with available evidence and international guidelines including those from PAHO/WHO & CARPHA.

**Specialists – Communicable Disease Programs:**

- Assisting with the review of integrated data on notifiable communicable diseases from the Epidemiology unit periodically to monitor disease trends and risk factors.
- Assisting with the review of integrated data on other communicable diseases of interest from the Epidemiology unit periodically to monitor disease trends and risk factors.
- Receiving daily feedback of cases, clusters, and problems with programs or interventions
- Responding to feedback of cases, clusters, and problems with programs or interventions
- Assisting in the responses for acute public health emergencies
- Coordinating with the Epidemiology Unit to ensure that the Communicable Disease Programs are integrated and functional.
- Producing monitoring and evaluation reports on the programs and interventions implemented in response to public health emergencies related to communicable diseases.

#### *5.3.2.7. Nutrition Services*

**Chief Nutritionist (working in Prevention, diagnosis, treatment and rehabilitation)**

- Receiving daily, monthly, and annual information from M&E NCD Programs, health services and potential acute public health emergencies.
- Analyzing and integrating data and information with Epidemiology Unit and others.
- Producing reports with support of the Health Management Information Unit and Epidemiology Unit.
- Preparing and implementing responses for outbreaks / acute public health emergencies and integrating Rapid Response Teams.
- Sending feedback to local and national levels.
- Liaise with NCD coordinator to create nutrition related protocols and guidelines.
- Preparing report for specific indicators such as breastfeeding rates.
- Collaborate with the NCD coordinator for the implementing STEPS Surveys (every 5 years) and Rapid Mobile Phone Survey on NCDs (RaMPS) once in a year for risk factors, morbidity, and health services management with Epidemiology Unit/CMO.

#### *5.3.2.8. Bureau of Health Education (BHE)*

**Director BHE**

- Receive, and process information from health care facilities and EpiU on non-communicable diseases, notifiable communicable diseases, and other communicable diseases of interest.

- Monitoring the information and guidance coming from EpiU and tailoring health education campaigns accordingly.
- Participating in the rapid response team during outbreaks
- Assist in designing and implementing public health and social interventions in response to outbreaks.
- Review social media about possible health events of interest including rumors about outbreaks.

**Family Life educators / Health Educators**

- Monitoring the information and guidance coming from EpiU and tailoring health education campaigns accordingly.
- Assist the regional outbreak investigation teams and work with rapid response teams.
- Assist in designing and implementing public health and social interventions in response to outbreaks.
- Review social media about possible health events of interest including rumors about outbreaks.

### *5.3.2.9. Pharmacy Services Unit*

**Chief Pharmacist:**

- Ensure the monitoring of consumption and use of antimicrobials for human use, access trends, and disseminate information.
- Detect and investigate reported adverse reactions to medications and vaccines.
- Review and update pharmacovigilance and ESAVI SOPs and guidance and their implementation.

**Central Procurement Suppliers:**

- Ensure the monitoring of consumption and use of antimicrobials for human use, access trends, and disseminate information.
- Detect and investigate reported adverse reactions to medications and vaccines.
- Review and update pharmacovigilance and ESAVI SOPs and guidance and their implementation.

### *5.3.2.10. Dental Services*

**Chief Dental Surgeon:**

- Collaborate with various healthcare professionals to obtain timely and relevant data on disease trends to ensure effective monitoring and control of diseases.

- Analyzing and reporting monthly/periodically the prevalence of: (a) Dental Caries, fillings and edentulism (loses), (b) Periodontal Disease, (c) Oral Cancer, (d) Oro-dental trauma; (e) Noma.
- Production and dissemination of reports to national and local level to influence interventions and policies.

### *5.3.2.11. Environmental Health Division*

**Chief Environmental Health Officer (CEHO)**

- Review and develop recommendations based on environmental surveillance information received.
- Disseminate collated information to Epidemiology Unit.
- Supervise the detection of environmental risks and acute public health emergency/outbreaks and reporting, assessment, prevention, and control.
- Sanitary Inspections and reporting acute public health emergency / outbreaks.
- Collecting environmental and mosquito's lab sampling and analysis.
- Testing Pesticides resistance.
- Applying enforcement and control of potential acute public health emergencies / outbreaks
- Integrating information, analysis, and response with EpiU: Notifiable Vector-borne diseases, Food & waterborne diseases and Zoonoses, Syndromic Surveillance and deaths, and clusters (place, time, persons and vectors) analysis and investigation is done together with Animal Health Focal Point and Chief Veterinary Officer and his team.
- Support mass gathering activities with the monitoring of food, water, and vectors.
- Developing health promotion activities related to surveillance in community and intersectoral activities.
- Integrating vector management including surveillance activities.
- Potential outbreak investigation & control with or without the composition of a Rapid Response Team.
- Direct the preparedness, planning, surveillance, and response at points of entries.
- Disaster assessment and response.
- Feedback to national levels.
- Inspecting imported food for any public health risks
- Send food and water specimens to external laboratories for microbiological and chemical testing.
- Reporting possible morbidity and mortality by occupational and environmental diseases such as pesticide poisoning, and other toxic chemicals and physical agents is analyzed monthly.
- Support the investigation of any indoor air quality threats.
- To enforce legislative regulations to mitigate public health risks.

- Monitor and support the investigation of any nuclear radiation risks.

**Assistant Chief Environmental Health Officer**

- Detection of environmental risks and acute public health emergency/outbreaks and reporting, assessment, prevention, and control.
- Reporting all environmental surveillance information to the Chief Environmental Health Officer
- Collecting environmental and mosquito lab sampling and analysis.
- Testing Pesticides resistance.
- Applying enforcement and control of potential acute public health emergencies / outbreaks
- Integrating information, analysis, and response with EpiU: Notifiable Vector-borne diseases, Food & waterborne diseases and Zoonoses, Syndromic Surveillance and deaths, and clusters (place, time, persons and vectors) analysis and investigation is done together with Animal Health Focal Point and Chief Veterinary Officer and his team.
- Supervise mass gathering activities with the monitoring of food, water, and vectors.
- Developing health promotion activities related to surveillance in community and intersectoral activities.
- Integrated Vector management including surveillance activities.
- Potential outbreak investigation & control with or without the composition of a Rapid Response Team.
- POE surveillance and response.
- Disaster assessment and response.
- Feedback to local level and national levels.
- Inspecting imported food for any public health risks
- Send food and water specimens to external laboratories for microbiological and chemical testing.
- Reporting possible morbidity and mortality by occupational and environmental diseases such as pesticide poisoning, and other toxic chemicals and physical agents is analyzed monthly.
- Support the investigation of any indoor air quality threats.
- To enforce legislative regulations to mitigate public health risks.
- Support the inspection of ships on international voyages in the issuance of ship sanitation certificates.
- Monitor and support the investigation of any nuclear radiation risks.
- To delegate tasks downwards as needed

**Programme Manager – Port (Environmental Health Officer III)**

- Detection of environmental risks and acute public health emergency/outbreaks and reporting, assessment, prevention, and control.

- Reporting all environmental surveillance information to the Assistant / Chief Environmental Health Officer
- Collecting environmental and mosquito lab sampling and analysis.
- Testing Pesticides resistance.
- Training of EHO Is and IIs in surveillance and other relevant topics.
- Applying enforcement and control of potential acute public health emergencies / outbreaks
- Integrating information, analysis, and response with EpiU: Notifiable Vector-borne diseases, Food & waterborne diseases and Zoonoses, Syndromic Surveillance and deaths, and clusters (place, time, persons and vectors) analysis and investigation is done together with Animal Health Focal Point and Chief Veterinary Officer and his team.
- Support mass gathering activities with the monitoring of food, water, and vectors.
- Assisting with the development of health promotion activities related to surveillance in community and intersectoral activities.
- Integrated Vector management including surveillance activities.
- Participating in potential outbreak investigation & control with or without the composition of a Rapid Response Team.
- POE surveillance and response.
- Disaster assessment and response.
- Inspecting imported food for any public health risks
- Send food and water specimens to external laboratories for microbiological and chemical testing.
- Reporting possible morbidity and mortality by occupational and environmental diseases such as pesticide poisoning, and other toxic chemicals and physical agents is analyzed monthly.
- Support the investigation of any indoor air quality threats.
- To assist in the enforcement of legislative regulations to mitigate public health risks.
- Support the inspection of ships on international voyages in the issuance of ship sanitation certificates.
- Monitor and support the investigation of any nuclear radiation risks.
- To delegate tasks downwards as needed

**Port Health Officers (PHO):**

- Report any event, medical or public health information for international entry or exit of travelers or crew, baggage, cargo, containers, conveyances, goods, vectors, foods, and postal parcels as well as agencies.
- Conduct a rapid risk assessment of any signal or health-related problem in the Maritime Declaration of Health (MDH) presented by the Captain or Responsible for the conveyance, when interviewing passengers, or through information from Immigration, Customs or Port Services. Determine if an alert has to be communicated to the Senior EHO.
- coordinate with Immigration and Customs to isolate or quarantine suspected persons, animals, or products or goods as required.

- If considering a CD or any threat potentially epidemic, the isolation and/or quarantine is applied following the Public Health Emergency Response Plan in the POE initially, or in a HCF or at home, preparing a line listing with clear identification for follow up.
- If the PHO is not in capacity for dealing with the event, EpiU and EHU immediately send a specialist or an RRT to attend the emergency.
- In case an emergency is highly suspicious or confirmed, the CEHO activates the Emergency Plan for managing the situation in coordination with the PHO and MOH.
- A full report of the event is sent to the EpiU/EHU as soon as the emergency has been defined and early measures are in place.
- If the emergency is extended in time or public health impact, it is treated like an outbreak and a daily report is sent from the POE to the MOH EpiU and EHU.
- To collect data based on direction given by the public health official or the medical professional

**Environmental Health II:**

- Assessment of environmental health risks and outbreaks / acute public health emergencies through sanitary inspections including those related to vector control, food safety, natural and other disasters, water quality, air quality and mold.
- Investigation and control of disease outbreak related to vectors, lack of food safety, disasters, poor water quality, poor air quality and mold.
- Investigation of complaints that are potential health risks.
- Supervision of contact tracing, quarantine, follow up, isolation and early detection of secondary cases, infection, prevention, and control measures at home or other settings, preventive public health measures with contacts and community.
- Environmental sampling (food, water and wastewater, vector, air quality, mold).
- Applying enforcement and control of potential outbreaks/acute public health emergencies.
- Supervising the development of health promotion activities in the community as well as intersectoral activities.
- Integrated vector management including surveillance.
- Identifying and monitoring the presence, abundance, and distribution of disease-carrying vectors like mosquitoes, ticks, or sandflies. (This involves conducting regular field surveys, setting up traps, and collecting samples for analysis.)
- Supervising the collection of relevant data on vector populations, breeding sites, and disease incidence. They also maintain databases, develop data collection tools, and perform data analysis to identify trends and patterns.
- Supervising / conducting investigations whenever there is an outbreak or a suspected outbreak of a vector-borne disease, to determine the source, identify potential breeding sites, and assess transmission patterns.

- Assisting with the implementation of effective control strategies to reduce the transmission of vector-borne diseases. This involves planning and executing mosquito control activities, such as larval source reduction, insecticide spraying, and biological control methods like introducing predator species.

- Assisting with the implementation of public education and awareness campaigns. (They should provide information on disease prevention measures, demonstrate proper use of personal protective measures, and educate communities on the importance of eliminating breeding sites in and around their homes.)

- To collaborate with other public health officials, entomologists, healthcare providers, community organizations and Epidemiology Unit to ensure a coordinated response to vector-borne diseases. (This includes sharing surveillance data, participating in training programs, and contributing to integrated vector management strategies.)

- To continuously contribute to capacity building efforts within the organization or community by training and educating other staff members, providing guidance on vector control techniques, and disseminating best practices for surveillance and control.

- Participate in research activities to help improve the understanding of vector biology, disease transmission dynamics, and control measures. They may conduct experiments, develop new interventions, or test the effectiveness of novel vector control methods.

**Environmental Health Officer I:**

- Assessment of environmental health risks and outbreaks / acute public health emergencies through sanitary inspections including those related to vector control, food safety, natural and other disasters, water quality, air quality and mold.
- Investigation and control of disease outbreak related to vectors, lack of food safety, disasters, poor water quality, poor air quality and mold.
- Investigation of complaints that are potential health risks.
- Assisting with contact tracing, quarantine, follow up, isolation and early detection of secondary cases, infection, prevention, and control measures at home or other settings, preventive public health measures with contacts and community.
- Environmental sampling (food, water and wastewater, vector, air quality, mold).

- Applying enforcement and control of potential outbreaks/acute public health emergencies.
- Developing health promotion activities in the community as well as intersectoral activities.
- Integrated vector management including surveillance.
- Identifying and monitoring the presence, abundance, and distribution of disease-carrying vectors like mosquitoes, ticks, or sandflies. (This involves conducting regular field surveys, setting up traps, and collecting samples for analysis.)
- Collecting relevant data on vector populations, breeding sites, and disease incidence. They also maintain databases, develop data collection tools, and perform data analysis to identify trends and patterns.
- Conducting investigations whenever there is an outbreak or a suspected outbreak of a vector-borne disease, to determine the source, identify potential breeding sites, and assess transmission patterns.
- Implementing effective control strategies to reduce the transmission of vector-borne diseases. This involves planning and executing mosquito control activities, such as larval source reduction, insecticide spraying, and biological control methods like introducing predator species.
- Implementing public education and awareness campaigns. (They should provide information on disease prevention measures, demonstrate proper use of personal protective measures, and educate communities on the importance of eliminating breeding sites in and around their homes.)
- To collaborate with other public health officials, entomologists, healthcare providers, community organizations and Epidemiology Unit to ensure a coordinated response to vector-borne diseases. (This includes sharing surveillance data, participating in training programs, and contributing to integrated vector management strategies.)
- To continuously contribute to capacity building efforts within the organization or community by training and educating other staff members, providing guidance on vector control techniques, and disseminating best practices for surveillance and control.
- Participate in research activities to help improve the understanding of vector biology, disease transmission dynamics, and control measures. They may conduct experiments, develop new interventions, or test the effectiveness of novel vector control methods.

**Assistant Environmental Health Officers:**

- Assisting with the assessment of environmental health risks and outbreaks / acute public health emergencies through sanitary inspections including those related to vector control, food safety, natural and other disasters, water quality, air quality and mold.
- Participating in Investigation and control of disease outbreak related to vectors, lack of food safety, disasters, poor water quality, poor air quality and mold.
- Assisting in the investigation of complaints that are potential health risks.
- Assisting with contact tracing, quarantine, follow up, isolation and early detection of secondary cases, infection, prevention, and control measures at home or other settings, preventive public health measures with contacts and community.
- Environmental sampling (food, water and wastewater, vector, air quality, mold).
- Assisting with the development of health promotion activities in the community as well as intersectoral activities.
- Assisting with the identification and monitoring of the presence, abundance, and distribution of disease-carrying vectors like mosquitoes, ticks, or sandflies. (This involves conducting regular field surveys, setting up traps, and collecting samples for analysis. )
- Collecting relevant data on vector populations, breeding sites, and disease incidence. They also maintain databases, develop data collection tools, and perform data analysis to identify trends and patterns.
- Assisting in the investigations of an outbreak(s) or a suspected outbreak of a vector-borne disease, to determine the source, identify potential breeding sites, and assess transmission patterns.
- Assisting in the implementation of effective control strategies to reduce the transmission of vector-borne diseases. This involves planning and executing mosquito control activities, such as larval source reduction, insecticide spraying, and biological control methods like introducing predator species.
- Assisting in the implementation of public education and awareness campaigns. (They should provide information on disease prevention measures, demonstrate proper use of personal protective measures, and educate communities on the importance of eliminating breeding sites in and around their homes.)

- Assisting with capacity building efforts within the organization or community by training and educating other staff members, providing guidance on vector control techniques, and disseminating best practices for surveillance and control.

- Participate in research activities to help improve the understanding of vector biology, disease transmission dynamics, and control measures. They may assist with conducting experiments, developing new interventions, or testing the effectiveness of novel vector control methods.

### *5.3.2.12. Health Management Information Unit:*

**Engineers:**

- Designing, adapting, integrating, and implementing Information systems (EMRS).
- Implementing solutions for integrating and linking databases for surveillance subsystems and programs, including hospital and lab data.
- Collaborating with other team members to send feedback to local and national levels (CMO, EpiU, MOH Units, program or project leads and others).

- Ensuring that the E-Systems in place are functioning, including the manual reporting.
- Progressively assimilate the National Registers for Cancer, Diabetes Mellitus, Hypertension and Cardiovascular diseases and work together with EpiU and NCD Unit to prepare and incorporate NCD Surveillance Subsystem to the E-Systems.
- In coordination with EpiU and under CMO supervision, define the common indicators to be used in databases and records for surveillance and other health activities, to identify and associate individual data, aggregate and environmental health data.

**Informatics:**

- Preparing tables, graphs, maps, for analysis and periodical reports in coordination with EpiU.
- Assisting in implementing solutions for integrating and linking databases for surveillance subsystems and programs, including hospital and lab data.
- Collaborating with other team members to send feedback to local and national levels (CMO, EpiU, MOH Units, program or project leads and others).
- Collection, collation, and processing of surveillance data at all 33 wellness centers in coordination with EpiU.
- In coordination with EpiU and under CMO supervision, define the common indicators to be used in databases and records for surveillance and other health activities, to identify and associate individual data, aggregate and environmental health data.

**Statisticians:**

- Collecting and collation of surveillance and statistical data given by team members, and other internal and external units to the MOH.
- Processing and verification of data received.
- Leading data analysis (morbidity, mortality, and risk factors).
- Development of predictions or projections from data to assist with surveillance and other health related planning.
- Assessing trends in morbidity, mortality and risk factors related to notifiable communicable diseases.
- Assessing trends in morbidity, mortality and risk factors related to non-notifiable communicable diseases.
- Assessing trends in morbidity, mortality and risk factors related to notifiable communicable diseases.
- Aid in the periodical and general surveillance reports.
- To aid with the Sentinel sites monthly reporting (this relates to integrated data processed by members of the HMIU).
- Collaborating with other team members to send feedback to local and national levels (CMO, HMIU, MOH Units, program or project leads and others).
- Collecting and collation of surveillance and statistical data given by team members, and other internal and external units to the MOH.

**Officers:**

- Monitor health data sources such as hospital records, laboratory reports, and community alerts to identify unusual events or disease patterns.
- Validate and cross-check reported signals with healthcare facilities, laboratories, and surveillance officers to ensure data accuracy.
- Conduct rapid risk assessments of verified events by analysing case definitions, epidemiological trends, and geographic spread.
- Maintain timely and accurate documentation of detected, verified, and assessed events in the national health information system.
- Communicate findings and updates to surveillance stakeholders and recommend response actions based on the assessment.

**Entry clerks:**

- Accurately input data into the computer system in a timely manner using various software applications utilized.
- Verify the accuracy of the data entered by having SOPs for checks and making any necessary corrections.
- Aid in the basic analysis of data to identify any patterns or trends.
- Ensure that all records are maintained, and data is properly organized and stored.
- Consistently communicate with team members to ensure that the data is entered

correctly.

- Ensure all new data entry clerks are trained in – inputting data, ensuring data quality, basic analysis, maintaining records, and storing / organizing data.

### *5.3.2.13. Health Disaster Risk Management Committee:*

**Committee Coordinator / CMO:**

- Reviewing surveillance data and validating the occurrence and importance of an event of public health concern.
- Developing, reviewing, testing and updating health surveillance preparedness.
- Maintaining a register and contact information from EpiU and support team.
- Using health surveillance to conduct vulnerability assessments based on level of threats and health sector capacity to respond
- MOH Units & teams alert and ensure active data collection relating to the disaster.
- Monitoring and evaluating response interventions to guide further action.
- Scaling up or down of the HEOC based on the surveillance results
- Informing the Chief Medical Officer and PS on surveillance for decision making.
- Using surveillance data to guide recovery and rehabilitative activities.

### *5.3.2.14. Points of Entry – Maritime ports, Sea Cruisers and Airports*

**Supervisors**

- Deciding activation of Health Emergency Intersectoral Contingency Plan
- Using Event Based Surveillance to report any problem to MOH.

**Quarantine Officers**

- Receiving information from EpiU/EHU and aware of the epidemiological situation that affects entry/exit the country (PHEIC-APHE).
- Reviewing the itinerary followed by animals, foods, and vectors prior entry into the country and detecting signals.
- Providing appropriate space to interview & isolate suspected persons.
- Defining a location at POE if quarantine is required, for travelers or crew, while they are transported.
- Applying disinfection, decontamination or otherwise treating baggage, cargo, containers, conveyances, goods, or postal parcels at locations designated and equipped for this purpose.

**Immigration Inspectors**

- Receiving information from EpiU/EHU and aware of the epidemiological situation that affects entry/exit the country (PHEIC-APHE).
- Reviewing full itinerary & scales of the travelers to know about communicable disease contacts or sanitary conflicts.

**Customs Officers**

- Inspecting chemicals, pesticides, pharmaceuticals, and biologicals
- Detecting any health-related problem with goods, containers, and drugs.

**Port Health Officers**

- Receiving information from EpiU/EHU and being aware of the epidemiological situation that affects entry/exit the country (PHEIC-APHE).
- Reviewing the itinerary followed by animals, foods, and vectors prior entry into the country and detecting signals.
- Conduct the health assessment and isolation of affected travelers.

**Veterinary Inspector**

- Reviewing the itinerary followed by animals, foods, and vectors prior entry into the country and detecting signals.
- Inspecting live animals, animal products and plant and plant products respectively.
- Inspecting containers at the port and at premises of importer. (Animal health and food safety related matters).

**Airline Crew**

- Detecting if airlines travelers or crew has signs or symptoms of any possible CD/APHE.

**Transportation on ground**

- Collaborating with Transport associations to report any unusual potential health problem in passengers.

### *5.3.2.15. Ministry of Agriculture*

**Chief Veterinary Officer (CVO):**

- Weekly/monthly analysis of indicator-based surveillance, events-based surveillance and lab reports in the Animal Sector for detecting outbreaks / acute public health emergencies or communicable diseases potentially epidemic for animals and humans.
- Weekly/monthly reporting of indicator-based surveillance, events-based surveillance and lab reports in the Animal Sector for detecting outbreaks / acute public health emergencies or communicable diseases potentially epidemic for animals and humans.
- Analyzing monthly the health situation and the potential zoonosis or food problems (National Surveillance and Response Team MOH (NSRT) meeting).

- Integrating Chief Veterinary Officer report by Epidemiology Unit monthly.
- Animal Health Focal Point from the Ministry of Agriculture sits on the NSRT and attends monthly meetings.
- In case of emergency that can affect human and animal health, both Ministries work together in the NSRT, and an Alert is released for the Sectors and the Public, if necessary.

### *5.3.2.16. National Emergency Management Organization (NEMO):*

**Director**

- Receiving and reviewing health-related information from different Sectors and Civil Society before, during, and after disasters.
- Coordinating under Government supervision, a national response in a district or the country to any adverse event once the National Plan is activated.
- Sending and receiving feedback through the MOH for managing adverse events.
- Supporting & collaborating with MOH Disaster Risk Management Committee.
- During any Public Health Emergency including impact of heavy rain and hurricanes, national epidemic, support the Government as needed (see bibliography NEMO).

**Officer**

- Assisting in reviewing health-related information from different Sectors and Civil Society before, during, and after disasters.
- Assisting the director with the coordination of a national response in a district or the country to any adverse event once the National Plan is activated.
- Sending and receiving feedback through the MOH for managing adverse events.
- Supporting & collaborating with MOH Disaster Risk Management Committee.
- During any Public Health Emergency including impact of heavy rain and hurricanes, national epidemic, support the Government as needed (see bibliography NEMO).

### *5.3.2.17. Water and Sewerage Company Incorporated (WASCO)*

**Supervisors / Senior Laboratory Technologists**

- Supervising water-related testing such as chlorine residual and coliform.
- Receiving and reviewing water test results
- Reporting immediately to the Environmental Health Unit any outbreaks / acute public health emergencies (contamination or interruption of services), to generate actions in the Health Sector and Community.
- Receiving feedback from Environmental Health Unit and Epidemiology Unit about the epidemiological situation in the country or districts.

**Laboratory Technologists**
- Conducting water-related testing such as chlorine residual and coliform.

**Sampling Officers**
- Sampling water for human consumption.
- Testing water for human consumption
- Dissemination of results done on water testing
- Reporting immediately to the director any acute public health emergencies (contamination or interruption of services)

**Water Technicians**
- Collect, test, and document water samples regularly to identify early signs of contamination, unusual chemical levels, or microbial hazards that could indicate a public health risk.
- Report abnormal findings to the Environmental Health Unit and assist in confirming results through follow-up testing, contributing to the assessment of potential risks and the need for public health interventions.

### *5.3.2.18. Ministry of Education*

**School Safety and Education Officers**
- Detecting and communicating signals of any potential communicable diseases or other acute public health emergencies, and failure in preventive hygienic measures at schools.
- Communicating to the supervisor (Principal/Administrator) or School Nurse, and transmitting to the EpiU, EHU or MOH/Hotline once a public health signal of concern is detected.
- Applying prevention and control oriented to the characteristics of the event by both Sectors in collaboration.
- In instances where Epi has information concerning APHE in schools, the Chief Education advises on actions for prevention and control.

**School Nurse**
- To verify the public health signal of concern and do assessment if necessary.
- To relay the information to the Epi Unit and the Chief Education Officer
- To verify childhood vaccination for the surveillance of vaccine preventable diseases (VPD)

**Chief Education Officer/Educators**
- Promote preventive measures for communicable diseases.
- Report any suspicious cases to the School Nurse.

**Childhood Center Administrators**
- To inform the parents of any confirmed or suspicious cases of acute public health emergency or communicable diseases and provide space if isolation is needed.

### *5.3.2.19. Ministry of Tourism:*

**Hoteliers /Small Accommodation/Taxi Association / tour operators (Marine and land based)**

- Applying quarantine of contacts and isolation of confirmed cases as indicated by MOH.
- Screening, detecting, and reporting to EpiU immediately suspected cases of APHE and CD (Staff and visitors).
- Reporting within the Tourism and Health Information System.

### *5.3.2.20. Private Health Institutions*

**Tapion Private Hospital**

**Doctors:**

- Collecting patient samples to be transported to laboratories.
- Reviewing laboratory results for tests performed.
- Accurately diagnosing patients based on clinical presentations.
- Registering patients in the Electronic Medical Record System (EMRS) based on defined syndromes.
- Registration of all NCD/MH patients and patients with notifiable communicable diseases in EMRS.
- Collecting data on notifiable communicable diseases.
- Collecting data on other communicable diseases of interest.
- Collecting data on non-communicable diseases (including NCD lifestyle risk factors such as smoking, level of alcohol consumption, weight, and physical activity level status).
- Recognizing and reporting notifiable diseases to the EpiU/MOH.
- Recognizing and reporting adverse events related to medicines or vaccination to relevant personnel (specifically those within the Extended Programme on Immunization (EPI)).
- Verification of all epidemiologic surveillance data collected.
- Sharing patient data with EpiU/MOH to be integrated for data analysis.
- Reporting perinatal deaths including near missed cases and neonatal acute public health emergencies and communicable diseases
- to MOH with priority.
- Participating in surveillance activities by sharing accurate and timely information on patients to relevant bodies.
- Collaborating with public health officers (MOH) in outbreak investigations and control measures.
- Ensuring that patients and their family members follow surveillance and response interventions during APHE.

**Accident and Emergency:**

- Collect and report data on cases of road traffic injuries and violence (gender-based violence, interpersonal violence, suicide, and rape).

**Nurses:**

- Collecting patient samples for transport to lab or storage.
- Reviewing laboratory results for tests performed.
- Registering patients in the Electronic Medical Record System (EMRS) based on defined syndromes.
- Registration of all NCD/MH patients and patients with notifiable communicable diseases in EMRS.
- Collecting data on notifiable communicable diseases.
- Collecting data on other communicable diseases of interest.
- Collecting data on non-communicable diseases (including NCD lifestyle risk factors such as smoking, level of alcohol consumption, weight, and physical activity level status).
- Recognizing and reporting notifiable diseases to doctor(s).
- Recognizing and reporting adverse events related to medicines or vaccination to doctors.
- Participating in surveillance activities by providing accurate and timely information on patients to the doctor(s).
- Collaborating with public health officers (MOH) in outbreak investigations and control measures.
- Ensuring that patients and their family members follow surveillance and response interventions during APHE

**Health Aids**

- Adherence to transportation protocols for safe transportation.

**Orderlies**

- Adherence to transportation protocols for safe transportation.

**Infection Prevention and Control (IPC) Nurses/ Nurses:**

- Collecting patient samples to be transported to laboratories.
- Reviewing laboratory results for tests performed.
- Collecting data on notifiable communicable diseases.
- Collating data on notifiable communicable diseases and analyzing trends.
- Collaborate with other healthcare workers, to provide specialist knowledge and expert advice on types of infections identified in patients and how the infections should be treated.
- Monitoring staff infection related to treatment of patients and developing measures to control these.
- Monitoring and alerting any suspected severe respiratory infections (SARI) cases.

- Conducting outbreak investigations
- Implementing and overseeing infection control measures
- Monitoring compliance with IPC protocols
- Educating both healthcare workers and patients on how infection prevention and control and the importance of it.
- Assist in implementing and enforcing infection prevention and control measures.
- Assist in the training of healthcare staff (including the development of material needed for training sessions)
- Assist in the coordination of response strategies during outbreaks.

**Pathologist**

- Review the tests done by medical technologist

**Senior Medical Technologist**

- Review the tests done by medical technologist (in the absence of pathologist)
- General testing (NCDs, communicable diseases and risk factors)

**Medical Technologists**

- General testing (NCDs, communicable diseases and risk factors)

**Medical Laboratory Assistant**

- General testing (NCDs, communicable diseases and risk factors)

**Phlebotomist**

- Responsible for sample preparation, collection and sorting
- Responsible for the organization and packaging of results in adherence with protocols and procedures

**Cytology Technician**

- Responsible for cytology preparation and initial screening of gynecological smears (pap smears)

**Histology Technician**

- Responsible for the preparation of tissue samples for the pathologist to read

**Quality Manager**

- Reviews and signs off on laboratory results
- Reports to the Pathologist
- Overseas all the disciplines / departments
- Develop and implement a quality management system for the lab
- Ensures compliance with the quality management system in place

**Safety Officers (Usually a medical tech (note)**

- Responsible for developing the safety programme for the laboratory
- Responsible for implementing the safety programme for the laboratory

**Microbiologists**

- Antibiotic susceptibility and other communicable diseases

**Lab Professionals:**

- Collecting laboratory samples in a timely manner, ensuring that control measures are taken, so that samples are viable.
- Analyzing laboratory samples to confirm disease diagnoses.
- Identifying / confirming cases of infectious diseases
- Reporting cases of infectious diseases (results derived from analysis of samples)
- Developing antibiogram from laboratory data.
- Reporting of antibiogram results with EpiU/MOH
- Assisting in APHE or outbreaks by timely testing and analysis of sample

# 6. Annexes

## 6.1. Terms and Definitions

**Communicable diseases (CD)** (Syn: transmissible disease): A disease whose causal agent can be transmitted from successive hosts to healthy subjects, from one individual to another. An illness due to a specific infectious agent or its toxic products that arises through transmission of such agent or products from an infected person, animal, or reservoir to a susceptible host, either directly or indirectly through an intermediate plant or animal host, vector, or the inanimate environment. All infections and infestations are communicable diseases; thus, not all communicable diseases are infectious diseases. A disease can be communicable (transmissible) but not contagious if it requires a vector for its transmission (e.g., tetanus). Thus, communicable diseases include contagious and noncontagious diseases. The latter include diseases genetically inherited, and diseases exclusively transmitted through vector (J. Last Dictionary).

**Non-communicable diseases (NCD)** It is a disease for which evidence is lacking that transmission from individual to individual is possible by contagion, a vector, biological heredity, or inheritance (J. Last Dictionary).

**Syndromic surveillance for communicable diseases:** A complex of signs and symptoms that tend to occur together, often characterizing a CD. The ongoing, systematic collection, analysis, interpretation, and application of real-time indicators for a group of signs and symptoms - syndromes, where fever is almost always present, suggesting a CD, that allow for detection before public health authorities might otherwise identify them etiologically.

**Indicator-based surveillance (IBS)** is defined as the systematic collection, monitoring, analysis, and interpretation of structured data, i.e., indicators, produced by a number of well-identified, predominantly health-based formal sources. The collection of IBS data is a routine, regular process which is primarily passive. Data is collected according to established case definitions which are either disease-specific or syndromic. They may be collected as individual or aggregated data and originate from either exhaustive or sentinel systems. Data are analyzed in comparison with baseline values and thresholds to determine unusual disease patterns. IBS sources of information are mainly health-based (e.g. health-care structures, health professionals, laboratories), but may also include structured non-human health sources such as animal health data such as zoonoses, environmental health and meteorological data, or entomological data when these are regularly collected and organized for human health purposes. IBS data are not only employed for EWAR purposes; they are used primarily for achieving other surveillance objectives such as measuring impact of programs or the identification of priority health problems (WHO 2014).

**Event-based surveillance** (EBS) is defined as the organized collection, monitoring, assessment, and interpretation of mainly unstructured ad hoc information regarding health events or risks, which may represent an acute risk to human health. EBS is a functional component of EWAR.

The information collected for EBS is diverse in nature and originates from multiple, often not predetermined, both official and unofficial, including rumors, stories, reports by the media or ad hoc reports from informal networks. The information collection process is mainly active and carried out through a systematic framework specifically established for EBS purposes (WHO 2014). The goal of EBS is to detect unusual events that might signal an outbreak or any acute public health problem, including health services. EBS can also be community-based, meaning that information is reported by people in the community through a hotline or other messaging system.

**Acute Public Health Event (**WHO) Any event that represents immediate threat to human health and requires prompt action, i.e., implementation of control and/or mitigation measures to protect the health of the public independently of the origin or cause. This term includes events that have not yet led to disease in humans but have the potential to cause disease through exposure of humans to infected or contaminated food, water, animals, manufactured products, environments, or as a result direct or indirect consequences of natural events, conflicts, or other disruptions of critical infrastructure.

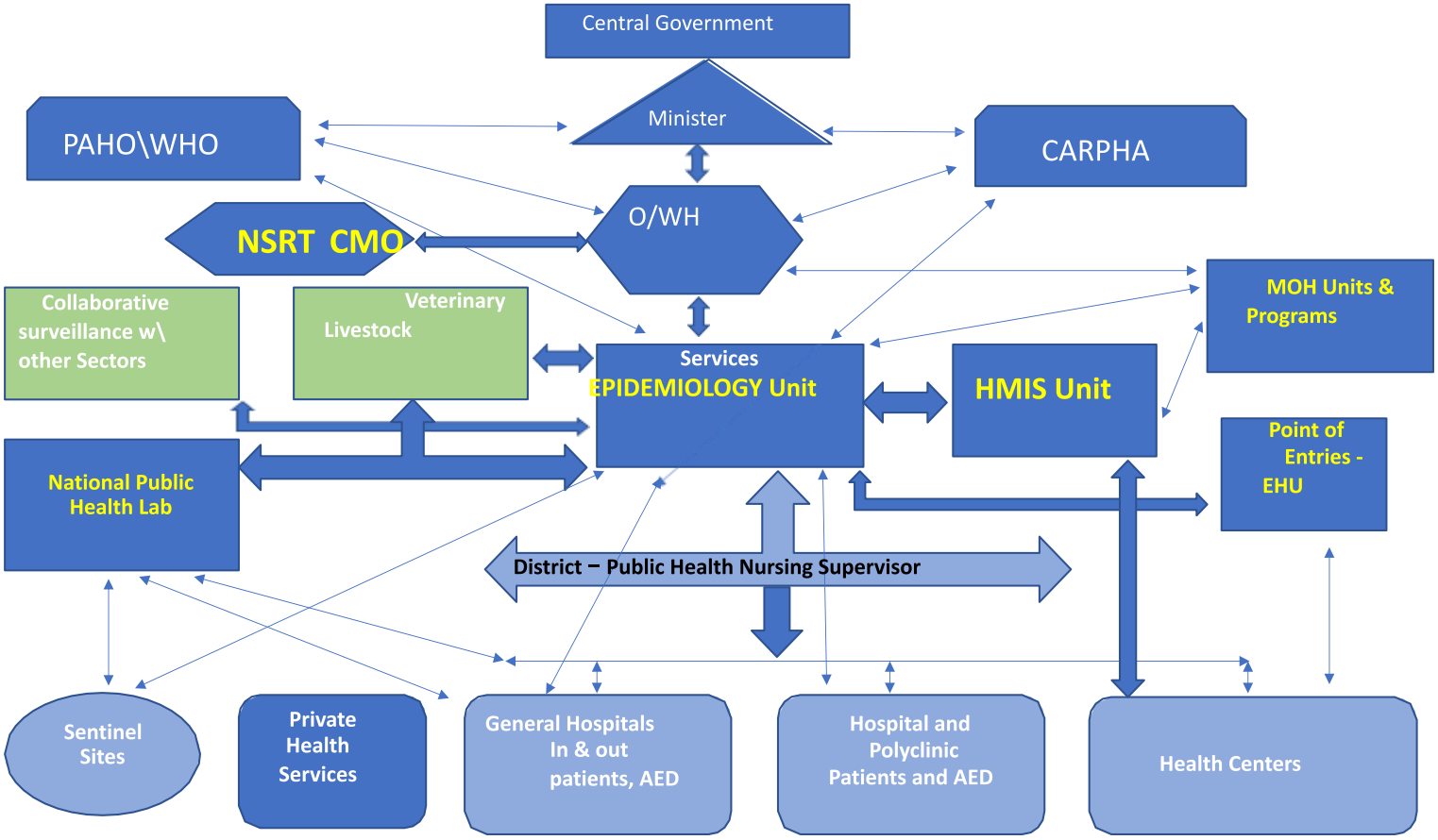
**Clusters** are aggregations of relatively uncommon events or diseases (syndromes) in space and/or time, in amounts that are believed or perceived to be greater than could be expected by chance. Putative disease clusters are often perceived to exist on the basis of anecdotal evidence, and much effort may be expended by epidemiologists and biostatisticians in assessing whether a true cluster of disease exists (J. Last Dictionary). For surveillance, clusters are a signal of something that should be verified, confirmed, and assessed, and after discarded or investigated, to know if there is a common cause and is necessary to implement prevention and control measures. Clusters can be detected using IBS or EBS.

**Outbreak** is an epidemic limited to localized increase in the incidence of a disease, e.g., in a village, town, or closed institution (J. Last Dictionary).

**Epidemics** are defined by the occurrence in a community or region of cases of an illness, specific health-related behavior, or other health-related events clearly in excess of normal expectancy. The community or region and the period in which the cases occur must be specified precisely y. The number of cases indicating the presence of an epidemic varies according to the agent, size, and type of population exposed; previous experience or lack of exposure to the disease; and time and place of occurrence. A single case of a communicable disease long absent from a population or first invasion by a disease not previously recognized in that area, requires immediate reporting and full field investigation; two cases of such a disease associated in time and place may be sufficient evidence to be considered an epidemic (J. Last Dictionary).

## 6.2. Organogram of Health Surveillance:

MOH Saint Lucia, 2022




## 6.3. Types of Surveillance, Periodicity and Management of Information

### 6.3.1. Types of Surveillance

**Passive surveillance** is the most common form of surveillance and occurs when laboratories, physicians, or other healthcare providers regularly report cases, diseases, or any other public health information to the local health department or MOH EpiU. These reports are based on standard case definitions for a particular disease or condition. Passive surveillance means that the healthcare provider or laboratory initiates the forwarding of the data to the MOH or Health

District.

**Active surveillance** occurs when the collection of data from the lab, physician, community, or other healthcare provider is initiated by the Health District or EpiU. Active surveillance is often used during the practice of field epidemiology, case, or outbreak investigations, contact tracing or research studies. Active surveillance has an advantage over passive surveillance because it achieves more complete and accurate reporting. However, the draw-back is that it's more resource intensive for the public health agency that is conducting the active surveillance. It costs more, it takes more personnel, and more time to do active surveillance**.**

**MOH Saint Lucia applies systematically a combination of both - active and passive.**

## 6.3.2. Periodicity and Management of Information

| **National level syndromic, CD, NCD and Health Services reporting timeline** | |
|---|---|
| *Periodicity* | *Information and management* |
| As it occurs | Individual case reports on specific (severe and deaths) syndromes of CD are actively and/or passively reported from the relevant sentinel sites and HCF to the Epidemiology Unit [by phone, email, WhatsApp, or any media]<br><br>For specific suspect individual cases and clusters of cases seen during DMOs'clinics, immediate reports happen [by phone, email, WhatsApp, or any media]<br><br>Acute public health events independently of the origin, that can create a health emergency [by phone, email, WhatsApp, or any media]<br><br>The National Laboratory reports to National Epidemiology Unit on individual cases of communicable diseases confirmed [by phone, email, or fax] |
| Monday a.m. | Reports on syndromes for the previous epidemiological week are sent from the relevant sentinel sites and Primary HCF to the HMIU & EpiU through EMR system. STHC/HCF send the information to EpiU [by phone, email, WhatsApp, fax, or any media]<br><br>Report from the Lab results is sent to EpiU [by email, WhatsApp, fax, or any media]<br><br>EpiU actively collects missing data [by phone, email, WhatsApp] or missing reports (aggregated data) to complete information and correct errors. |
| Tuesday | EPI syndromic surveillance data (rash and fever, acute flaccid paralysis) is reported to EpiU for consolidation of the National CD report.<br><br>HMIU reviews the reports coming from PHC Facilities in the EMR. |
| Wednesday | Data and information on CD cases, syndromes and deaths are reported from the EpiU/HMIU to the regional level CARPHA [by email]<br><br>National EPI syndromic surveillance data is reported to the regional level (CARPHA). [by email] |

| | |
|---|---|
| Thursday/Friday p.m. | National EpiU reports to the CMO on the CD weekly trends and specific related events, integrating information from different MOH Units and Programs and national or international institutions [Meeting and/or briefing notes and discussion with interested Officers] |

| | |
|---|---|
| Monthly | EpiU reports to the NSRT on the Syndromic, Sentinel data, CD and Labs including AMR monthly levels and trends and specific health-related events that have been detected, investigated, and controlled or still in progress during the month. Maternal and under 5 child mortality is also analyzed by districts and causes.<br><br>EHU collects and compiles data pertinent to vector control, water, and food quality, disasters or serious EH risks from the health regions/districts and is integrated with morbidity, mortality, health service and POE data.<br><br>Chief Veterinary Office reports to Epi Unit Animal Health diseases and Zoonoses and Food Safety events, and information is integrated in the analysis.<br><br>Any information about NCD/MH/RF or Health Services or Programs surveillance and response, is included in the meeting. |
| Quarterly | TB, Malaria, AIDS/HIV M&E, STI and vaccination levels and trends by areas (data/information) is reported by National Programs and integrated within the analysis of the corresponding month by the EpiU. |
| Annual | MOH Health Situation Report and PAHO Regional Indicators |
| To be defined | Reporting of NCD Registries, morbidity, mortality, RF and Health Services |
| **Regional level syndromic and disease data and information reporting times to and from CARPHA and PAHO/WHO (MOH REVIEW AND UPDATE)** | |
| Thursday | Weekly summary report to PAHO/WHO of the aggregate data regarding a PHEIC (COVID-19, MPX)<br><br>Analysis, interpretation and editing of the regional syndromic and CD weekly report (CARPHA Surveillance and Response Team) |
| Friday | Dissemination of the E-CSR on CariSurvNet (CARPHA Epidemiology Division) |
| Monthly | Collection, compilation, analysis, interpretation, and dissemination of the monthly regional report (CARPHA Surveillance and Response Team) |
| Ad hoc reports | They should be requested to CMO, and he has the capacity for approval. |

## 6.3.3. Source of data and forms

### *6.3.3.1. The main data sources for surveillance are:*

| IN THE HEALTH SECTOR | OTHER SECTORS AND COMMUNITY |
|---|---|
| Syndromic surveillance reporting | MOA - Animal and food safety health data |
| Notifiable diseases | Vital records, census data and mortality reports |
| Sentinel Sites report | Public health surveys: (a) population-based (b) provider-based (c) Others |
| Acute Public Health Events | Touristic Sector reports |
| Laboratories reports | CD, Sickness/absence records to schools and labor centers or another health-related event |
| Clusters and outbreak reports and investigations | Social networks, the Media, and other public sources |
| Medical records at PHC Facilities | Police – Accidents and homicides |
| Hospital reports | Disasters |
| Disease Registries NCD | Formal and informal community leaders. |
| Environmental Health Surveillance and monitoring systems | Information from international sources like PAHO/WHO, CARPHA, GPHIN/Canada and WHO/EIOS, CDC |
| Point of Entry reports | Economic Affairs and Finance |
| Over the counter medication sales and consumption of key medicines, vaccines, and other equipment and products in the Health Sector, especially those used in emergency medicine and for prevention and control of epidemic-prone diseases | Governmental sources |

**The forms:** In addition to the Electronic Medical Record established at PHC Facilities for individuals, there are printed forms in use:

- Doctors Clinic Register (outpatients)
- Syndromic surveillance – Daily/weekly Tally Sheet: Health Center and Sentinel Site
- EPI Surveillance Form
- Hospital Communicable Disease Case Notification Form - For every inpatient with suspected or confirmed CD (only one notification form for suspect, probable and confirmed, that is updated after confirming or not in the same form).
- Laboratory Case Notification Form - For every outpatient with positive laboratory test for CD
- Laboratory Investigation Form CD Surveillance (Emerging Infectious Diseases)
- Laboratory request form (general)
- Laboratory requisition form for microbiology
- Laboratory report form (microbiology)
- CARPHA laboratory Investigation Form
- Case Investigation Form
- Outbreak Daily Tally Sheet
- Outbreak investigation reporting form
- HIV/AIDS Notification Form
- TB contact tracing register
- STI Surveillance Form
- Schistosomiasis investigation Form
- Leptospirosis Investigation Form
- Contact tracing: list and monitoring forms (WHO 2018)
- Event-based surveillance form (PAHO/WHO 2016 in the Caribbean) (added)

# 6.4. Components of National Health Surveillance

## 6.4.1. Data (and information) reporting

### 1. Syndromic Reporting

Syndromes are to be reported based on the date the patient presents to the health facility. Total numbers of cases of the syndromes listed in the "Weekly data collection" section of Appendix 1
A template for a weekly reporting form that is used in-country is given in Appendix 1.2.

Case definitions for the syndromes under regional surveillance are contained in Appendix 4. Guidelines on etiologies associated with syndromes and appropriate sample collection are contained in Appendices 5 and 6.

Syndromic surveillance should be conducted in major public health facilities so that emerging public health threats can be detected early; however it need not be island wide. For example, a country may conduct syndromic surveillance in all or selected public health centers and accident and emergency departments of public hospitals, but only a few sentinel private practitioners. Once completeness of reporting is known, trends can be monitored over time, although rates may be difficult to determine.

### *2. Hospital Ward Notifications*

There is an established mechanism for the routine monitoring of persons admitted into a hospital (participating in the surveillance system) with one of the syndromes under regional surveillance. This mechanism must include the notification of cases based on the date of onset of illness to the epidemiologist Epi Unit). The sample Case Notification form contained in Appendix 7 may be used to collect and transmit this information. The need for an epidemiological Case Investigation will be determined by the National Epidemiologist.

### *3. Four-weekly reporting of specific diseases*

Confirmed cases are to be reported based on the date of onset of illness. Age and sex specific data on confirmed cases of diseases listed in the "Four-weekly data collection" section of Appendix 1

### *4. Laboratory surveillance*

The laboratory has a critical role in public health surveillance and disease control. In the revised communicable disease surveillance system, the primary role of the public health laboratory remains confirmation of etiology. However, the laboratory has a key role in

assisting with outbreak detection and confirmation, especially when the same serotype/subtype is detected from several sources or places in the absence of clinical or epidemiological information to suggest that there is an outbreak. Also, sometimes laboratory surveillance data can be used to predict an epidemic, e.g. if a change in dengue serotype is detected, after many years of another type(s), it would be predicted that an outbreak may be imminent. The laboratory also has a crucial role in anti- microbial resistance surveillance, which is almost entirely laboratory-dependent; in enhanced surveillance and research studies; and in confirming elimination or eradication, as with measles, polio, etc.

On a weekly basis, in-country laboratories shall make available to the office of the National Epidemiologist results for **all** specimens that test positive for communicable diseases. Individual, case-based data (Laboratory case Notification form) must be reported, with at least the parameters described in the laboratory surveillance minimum dataset (Appendix 13). Also, any unusual findings with respect to test yield or antimicrobial resistance patterns are to be immediately reported to the office of the National Epidemiologist.

Data shall be transmitted from the reference or public health laboratories to the office of the National Epidemiologist via facsimiles or mail.

The office of the National Epidemiologist shall report individual, case-based data on all samples testing positive for communicable diseases **except STIs** to CAREC on a weekly basis. Data shall be transmitted by 12 noon on Wednesday of the following epidemiological week (e.g. data for week 10 is to be transmitted to CAREC by noon on Wednesday of week 11). This data shall be maintained in CAREC's laboratory information system (LABIS). Data shall be transmitted to CAREC via *one* of the following mechanisms:

- A hard copy of an Excel spreadsheet (template available from CAREC)
- An electronic copy and Excel spreadsheet (template available from CAREC)
- A hard or electronic report generated by a laboratory information or surveillance system

For some countries, the CAREC laboratory functions as an extension of in-country national laboratories, especially in virology. As such, the maintenance of one database at CAREC (LABIS), with CAREC as well as in-country laboratory data, will facilitate harmonization of test results and minimize duplication in analyses at the regional level.

In addition to the minimum dataset that the laboratory shall routinely transmit to the office of the National Epidemiologist, the laboratory

shall also routinely monitor:

- the proportion of 'positive tests of all tests conducted' for a specific pathogen
- the results of antimicrobial susceptibility tests
- Quality assurance pre and post analytic indicators as outlined in the CAREC Quality Assurance Training Manual and Module 4 of Managing Laboratories to Assure Quality – "A How to Guide": Operational Systems.

All samples referred to CAREC shall be accompanied by the laboratory investigation form in Appendix 14. This form is also used for in-country communicable disease laboratory requisitions and reports. The minimum data for inclusion on specimen labels are:

- Patient identifier (name or alphanumeric code)
- Date of specimen collection
- Specimen type
- Patient date of birth

Guidelines on the referral of specimens to CAREC can be found in the CAREC Laboratory User Manual. Samples should be routinely taken and tested during endemic periods. *However, during epidemics, once etiology has been established, only a systematic selection of samples should be taken and tested.* Guidelines on sample testing during epidemic and endemic periods can be found in the CAREC 'Guidelines for the Collection of Clinical Specimens' in Appendix 6 and 'Clinical and laboratory guidelines for dengue fever and dengue hemorrhagic fever/dengue shock syndrome'.

## 6.4.2. Communicable and notifiable diseases

**Outbreak reports**
**The office of the National Epidemiologist shall provide an 'alert' (early notification) of an outbreak. All unusual disease situations must be looked into, and every identified outbreak must be investigated by the appropriate authorities.**
**The following table also contains details pertaining to information dissemination.**

| ***6.4.2.1. Under IHR Requirements:*** | |
|---|---|
| **Only one case suspected or confirmed of them should be reported in the first 24 hours to PAHO/WHO** (assessment and notification using IHR Annex 2) | Smallpox, Poliomyelitis wild type virus, Human Influenza new subtype, SARS, SARS COV-2/COVID-19. Monkeypox is in this group after been declared a PHEIC in July 2022. |
| **Any event involving the following diseases due to the potential health impact and international spread (**IHR Annex 2) | Cholera, Pneumonic Plague, Yellow Fever, Viral Hemorrhagic Fevers (Ebola, Lassa, Marburg, Dengue hemorrhagic, others), West Nile Fever, and others that are of special national or regional concern, e.g., Dengue Fever, Rift Valley fever and meningococcal disease. |
| Under surveillance by PAHO/WHO | Influenza, Malaria, TB, HIV/AIDS, CHK, ZIKA, Louse-borne typhus fever and Relapsing fever |
| ***6.4.2.2. Other diseases of interest in America and CARICOM/CARPHA and St. Lucia's priorities*** | |
| Vaccine-preventable diseases | Bacterial Pneumonias, Hemophilus influenza pneumonia, Streptococcus pneumoniae, Chicken Pox, Diphtheria, Measles, Mumps, Rubella, Poliomyelitis, Neonatal Tetanus, Tetanus, Whooping Cough (Pertussis), Bacterial Meningitis$_3$ caused by: Hemophilus influenzae, Neisseria meningitidis, Streptococcus pneumoniae, TB and Non-specific meningitis. |
| Caribbean interest (CARPHA and CARICOM) | Leprosy, Ciguatera, Foodborne Illness, Leptospirosis, Rabies (in humans and animals), Typhoid and Paratyphoid Fevers, Viral Encephalitis/Meningitis, Scabies, Amebiasis, Giardiasis |

| | |
|---|---|
| Under Laboratory Surveillance and report to CARPHA | E. coli (EHEC) diseases, Campylobacter, Salmonellosis, Staphylococcus pathogenic, Shigellosis, Viral Hepatitis A, B and C, Toxoplasma, Listeriosis, Cryptosporidium, Norovirus, Rotavirus, Adenovirus, Syncytial Respiratory Virus |
| Sexually Transmitted Infections (excluding HIV) | Urethral Discharge, Gonorrhea, Chlamydia, Syphilis, Non- specific urethritis, Genital Ulcer, LGV, HSV, Chancroid, Trichomonas, Bacterial Vaginosis, Vaginal Discharge and Unspecified |

### 6.4.3. Syndromic Surveillance

The syndromes under surveillance in Saint Lucia are: Acute Flaccid paralysis, Acute respiratory illness less than 5 years old (ILI, SARI, ARI, SARS), Fever and respiratory symptoms 5 years and more, Conjunctivitis (non-neonatal), Fever and Hemorrhagic symptoms, Fever and neurologic symptoms, Fever and rash, Gastroenteritis 5years old or more, Gastroenteritis less than 5 years, Undifferentiated fever in 5 years old or more, and less than 5 years.

<table>
<tr><td colspan="5">FEVER AND RESPIRATORY SYMPTOMS</td></tr>
<tr><td colspan="2">Cases definition</td><td>Complications</td><td colspan="2">Epidemiological data</td></tr>
<tr><td colspan="2">Fever with one of the following symptoms, with or without respiratory distress, cough, sore throat, dyspnea</td><td>Pneumonia<br>Respiratory insufficiency<br>Multiorgan- failure</td><td colspan="2">Previously healthy, risk factor for HIV, prior medication, recent travel, contact with animals, contact with similar cases</td></tr>
<tr><td colspan="5">Possible diseases and agents</td></tr>
<tr><td>Influenza A and B Respiratory Syncytial Virus (RSV) Metapneumovirus SARS CoV2 and other viruses</td><td>Hantavirus pulmonary syndrome<br>Leptospirosis</td><td>Pertussis</td><td>Diphtheria<br>Streptococcus Group A</td><td>Pneumococcus<br>Hemophilus Influenzae<br>Legionella Anthrax</td></tr>
<tr><td colspan="5">Specimens for lab tests</td></tr>
</table>

4

| | | | | |
|---|---|---|---|---|
| Nasopharyngeal secretion or Throat swab | Acute and/or convalescent serum sera (A) Blood sample | Nasopharyngeal secretion, pleural fluid | Throat swab | Blood Serum, Sputum, Urine |
| Influenza testing RSV testing, PCR multiplex, SARS Cov2 Ag test | IgM and IgG, PCR, and Immunofluorescence | Direct smear and Gram, Bacterial culture | Direct smear and Gram, Bacterial culture | Bacterial culture |
| Barbados National Lab, CARPHA or CDC (Further etiological testing - viral culture, serology, ELISA, PCR, Genome detection). | | | | |
| NOTE: (A) Acute and convalescent serums ≤5 days from onset of symptoms and the second more of 14 days after | | | | |
| | | | | |

| **GASTROENTERITIS / ACUTE DIARRHEAL SYNDROME** | | |
|---|---|---|
| **Cases definition** | **Complications** | **Epidemiological data** |
| Acute onset of diarrhea, with or without fever, and presenting with 3 or more loose stools or watery stools in the past 24 hours, with or without dehydration, vomiting, blood | Moderate/severe dehydration, Sepsis, Shock | Previously healthy person, risk factor for HIV, recent travel, food history, contact with similar cases or sick animals |
| **Possible diseases and agents** | | |
| Rotavirus group A, B, C Norwalk, Adenovirus, Astrovirus, Enterovirus, Calicivirus | Cholera, Enterotoxigenic E. coli, Shigella, Salmonella, Campylobacter, S. typhi Enterohemorragic E. coli, | Entamoeba histolytic, Giardiasis, Cryptosporidium |
| **Specimens for lab tests** | | |
| Frequently stools (sometimes Blood) | | |
| Testing using rapid test kits, ELISA | Culture and sensitivity | Parasite demonstration |
| Barbados National Lab, CARPHA or CDC (Further testing, pathogen characterization, typing and/or confirmation) | | |

| **UNDIFFERENTIATED FEVER** | | |
|---|---|---|
| **Cases definition** | **Complications** | **Epidemiological data** |

| | | | |
|---|---|---|---|
| Fever with two or more of the following symptoms: Headache, retro-orbital pain, arthralgia, myalgia, nausea, vomiting, rash, exanthema | Dehydration and hemoconcentration, liver enlargement, jaundice, pneumonia, possible neurological & hemorrhagic symptoms, sepsis & shock | | Previously healthy person, recent travel inside or outside the country, prior medication, contact with insects and rodents, contact with similar cases. |
| **Possible diseases and agents** | | | |
| Dengue, Measles, Rubella, other Immuno-preventable CD, MPX | Leptospirosis, Viral hepatitis, Other arboviral Zika, CHK, Hantavirus | Brucellosis, Typhoid fever | Malaria, Borreliosis |
| **Specimens for Lab Tests** | | | |

| | | | |
|---|---|---|---|
| Acute and/or convalescent serum sera | Acute and/or convalescent serum sera | Blood and serum | Blood smear serum |
| Rapid tests, Dengue serology and PCR | Culture, serology, PCR, and genome amplification | Blood culture serology | Parasite demonstration, serology, Rapid tests |
| Barbados National Lab, CARPHA or CDC (Measles and Rubella must be tested for if rash is present in children, as per the EPI Programme protocol | | | |

| **FEVER AND NEUROLOGICAL SYMPTOMS** | | |
|---|---|---|
| **Cases definition** | **Complications** | **Epidemiological data** |
| Fever with or without headache and vomiting with at least one of the following: Meningeal irritation, convulsions, altered consciousness, altered sensory manifestations, paralysis (apart from AFP) | Cerebral Oedema, Abscess, Coma, Respiratory arrest, Neurological Sequalae | Previously healthy person, risk factor for HIV, prior medication, recent travel, contact with insects & rodents, contact with similar cases |
| **Possible diseases and agents** | | |
| Meningitis: Meningoencephalitis Viral (Enterovirus y Poliovirus, Guillain-Barre, WNV, Adenovirus, HSV , VZV, Mumps); Bacterial (Meningococcal, Pneumococcal, Hib, Leptospirosis); Parasitic (Malaria, Trypanosomiasis) | | Encephalitis: Rabies, WNV, SLE, Equine Encephalitis, HSV |
| **Specimens for lab tests** | | |
| CSF, Blood culture, blood smears, throat swab, urine, acute and convalescent serum | | CSF, acute and convalescent serum, post-mortem specimens |
| National lab: Gram stain, bacterial culture | | |
| Barbados National Lab, CARPHA or CDC (Antigen detection. Viral culture. Serology. Genome amplification) | | |
| **Note**: If patient presents with Acute Flaccid Paralysis (AFP), follow the EPI programme protocol. | | |

| **FEVER AND HAEMORRHAGIC SYMPTOMS** | | |
|---|---|---|
| **Cases definition** | **Complications** | **Epidemiological data** |

| | | |
|---|---|---|
| Fever with at least one hemorrhagic (bleeding) manifestations, with or without jaundice: Purpura, epistaxis, hemoptysis, melena | Kidney and liver insufficiency, moderate or severe bleeding, Acute respiratory failure, shock | Previously healthy person, recent travel, prior medication, contact with insects and rodents, contact with similar cases, no history of coagulation disorder |
| **Possible diseases and agents** | | |
| Dengue hemorrhagic | Yellow fever, Leptospirosis, Hantaviruses, South American hemorrhagic fevers | Malaria falciparum |
| **Specimens for lab tests** | | |
| Acute and/or convalescent serum | Acute and convalescent sera | Blood smear, Rapid test |
| Dengue serology and PCR | Serology, IF, PCR | Parasitic demonstration |
| Barbados National Lab, CARPHA or CDC (Viral isolation, Serology, Antigen detection, PCR, Genome detection) | | |



### 6.4.4. Non-communicable and Chronic Diseases (MH)

| **Diseases** | **Risk factors** | **Preventive interventions** |
|---|---|---|
| Cardiovascular Diseases, Cancer (selected localizations), Diabetes Mellitus, Chronic Respiratory Diseases, and any other country priority | Unhealthy diet (salt, sugar, saturated fats), Physical inactivity, Smoking and Harmful alcohol consumption, | Pap smear, Breast Self-examination and Medical exam, Prostatic Surface antigen (PSA), Fecal occult blood test (FOBT), Oral examination, Glycaemia, Creatinine and blood lipids, and other screening tests |
| Injuries, Suicide and Dementia | Hypertension, Obesity, Hyperlipidemia, Anxiety and Depression | Essential NCD medicines and technologies, and Drug therapy and counseling for priority NCD & RF |

### 6.4.5. Environmental Health

Sampling & Inspections Plans oriented to detect environmental health hazards and risk factor in different settings: houses, neighborhoods, schools, labor centers (accidents and occupational diseases), public places; water, food, air (indoor/outdoor pollution), pesticides and toxic/chemicals, and radionuclide are very important to understand the health determinants. Saint Lucia MOH EHU should update the situation of the environmental health risk in relation to the epidemiological situation for CD and NCD at least once in a year, define which are the indicators that should be maintained in surveillance, and which are the new ones, and their

needs. At same time, is necessary to define which data are going to be sent to EpiU and which ones and analysis are going to be sent back from EpiU for mutual benefit and integration. In addition, "**Environmental Health Unit (Vector Control, Food Safety and Hygiene, POE, Climate Change impacts)"** are the proposed indicators based on the experience of the ECC countries.

### 6.4.6. Special Events

**Disasters can be natural, accidental, or intentional** and include events such as hurricanes, tropical storms, floods, earthquakes, volcanic eruptions, fires, and acts of terrorism, including bioterrorism and some of them occur every year in ECC. After disasters, the possibilities for large CD outbreaks and lack of health services are usual and MOH should do:

- A rapid assessment of the affected areas and surveillance should be adapted, intensified, and enhanced, together with medical & public health services, using manual or electronic devices to capture and send information for analysis and response to MOH and the National Emergency Management Organization (NEMO) for working integration.
- The National Emergency Management Plan (NEMP) for Disaster Risk Reduction and Management (DRR and DRM) is activated by the Government, where MOH is active.
- Pre-disaster health situation analysis and surveillance data, informs MOH which can be the main risk of the affected areas coming from humans, animals, or environment.
- At same time, health routine data should be used as a baseline for post disaster surveillance activities.

  **NEMO works in coordination with MOH Disaster Risk Management Committee (DRM),** whose information comes from Local level HCF and EpiU, HMIU & EHU. The MOH surveillance activities are:
- **IBS – syndromic, CD reporting and EBS for any health-related threat or acute public health event and EH risks are analyzed in affected areas**,
- Usually, a Post-disaster Surveillance Centre is created with specialized personnel, and RRT, EHO, and HCF in the areas are responsible for capturing basic information and sending it to the Centre or to the HMIU at MOH for decision-making.
- If a cluster or outbreak is suspected or confirmed, additional information and interventions are implemented immediately.
- CMO is responsible for informing MOH and PS to the situation and proposed interventions to be implemented in the affected areas.
- HCF that supports the response enhance surveillance activities
- EHO do field work for water/food safety, personal and collective hygiene in settings, shelters and displacements, IPC measures, vector control and rapid detection of any event and reports to

EHU/EpiU. If high risk of an Immunopreventable disease does exist, vaccination can be also implemented.

**The surveillance and alerts about the epidemiological situation in affected areas are disseminated to border areas and the country** (Government, Community and Civil Society) for prevention and early detection of the extension of any CD or outbreak, to non-disasters areas, using the traditional surveillance systems.

**Mass gatherings are different situations** (parties, celebrations, sports games, cultural activities, etc.), where large numbers of people come together for a common goal or purpose in a short time, often for few hours or days. An acute public health event has a higher risk at a mass gathering, been a CD or intoxication outbreak, or an accident, and overwhelms the public health system, the government and community services for effective immediate response.

The steps to be taken for surveillance and response are:

- Starts preparedness before the gathering in coordination with interested Sectors, do the risk assessment of the places and sanitary conditions, the epidemiological situation of the areas, the nationality and characteristics of the participants, and organization of the gathering, Planning the Health Sector Response and Risk Management**,** and how surveillance should be implemented and enhanced using different sources from Health Services, Red Cross, Police, Transport, food and water supplies and the Organizers of the gathering.
- EBS is used, telephones and WhatsApp calls or messages with a phone hotline, cellphone number and also an email at MOH or EpiU for capturing any information.
- If any signal is detected**,** an RRT should be ready for case investigation and control.
- If an outbreak is confirmed it should be attended as such.
- Risk communication to the public and Sectors is important to avoid panic and unnecessary saturation of the health services, plus adequate preventive measures, and detection of suspect cases.

## 6.4.7. Alert and Response, case investigation, clusters and outbreak investigation.

Day by day, the EpiU using the subsystem for Epidemiological Intelligence and Early Warning and Response (EWAR) integrates and analyzes data coming from different subsystems and sources for detecting CD cases, clusters and outbreaks, APHE, or doing the follow-up of the existing ones and disseminate information. At same time, EpiU receives information from international sources about PHEIC and epidemics or outbreaks in neighboring countries, the region, or other regions of the world.

### *6.4.7.1. Case investigation*

This is applied by medical doctors and family nurse practitioners initially working in HCF when detecting a suspected or confirmed CD, and coordinate with Public Health Nursing Supervisor and/or Epidemiologists when the nature and importance of the case (s) is complex. They can rule out the diagnostic or discard the outbreak if considered.

- Guidance for diagnosing a CD in the index case or contacts, should be based on the presence of fever at onset or after in the last days (10), clinical and epidemiological characteristics (see Syndromes 6.4.2.), and a blood white cell count test with abnormal levels of neutrophils, lymphocytes, or eosinophils. The sedimentation rate and C Protein abnormal levels also help.
- The absence of fever in a possible outbreak suggests a non-biological agent with exception for food poisoning by Staphylococcus and a few others. An early and positive microbiological test can define the etiology and presence of a CD outbreak.

### *6.4.7.2. In an outbreak (see 6.1)*

The number of cases varies according to the disease-causing agent and conditions, and the size and type of previous and existing exposure to the agent (WHO). Outbreaks are usually caused by an infection, toxic/chemicals or less frequent by radioactive material, transmitted through person-to–person contact, animal to person contact, or from the environment or other media and has a common source of transmission.

Once an outbreak has been officially declared, appropriate resources (both human, material, and financial) will need to be mobilized to support the outbreak response by MOH, PS and CMO, who decide who are going to integrate the Outbreak Investigation Team (RRT) and how they are going to proceed. The multidisciplinary team is usually integrated by: **A team leader**, who should have strong epidemiologic skills, a Public Health or **Infection Control Nurse/Epidemiologist** to collect and collate data and samples on cases and controls during the time of the outbreak; **EHO** to conduct site investigations and collect data and samples; **A Health Educator coordinator** for health promotion within the community affected; **Laboratory support** to ensure proper sample collection, preservation and transport, and confirm the etiologic or causative agent; **A clinician** for diagnosis and patient care and management; **A spokesperson** should be designated to communicate with the media and deliver messages to the public in one way; **A responsible for logistics**.

The team should meet with CMO before going to the field to know about the possible - confirmed outbreak and the advance working plan and coordination with different institutions; they can work in full composition in the field or not, having a place or room for meeting and the responsibility for the investigation and control of the outbreak. In this regard, we should have daily meetings to follow the study and evolution of the outbreak, the effective implementation

of prevention and control measures, and preparing the daily report for MOH.

The basic components to respond to outbreaks and epidemics are (WHO): (1) Coordination, (2) RRT, (3) Public Awareness (IEC) and Community engagement, (4) IPC measures, (5) Case management, (6) Safe and dignified burials, (7) Environmental risk control, (8) Epidemiological surveillance, immediate reporting, case investigation and contact tracing, isolation, quarantine & segregation, (9) Laboratory support: clinical, microbiology and pathology, ( 10) Vaccination, (11) Traveling and POE, (12) Budget, (13) Operations and logistics.

The public will be informed and aware of the existence of a threat to public health and advice on actions and prevention measures. Every effort must be employed to ensure early announcement of an outbreak to the public. An outbreak in Saint Lucia is confirmed by CMO (EpiU and other specialists) and communications to the public is done by the spokesperson.

The step-by-step process for investigation and control can be done simultaneously to reduce the timeframe from the beginning to the control.

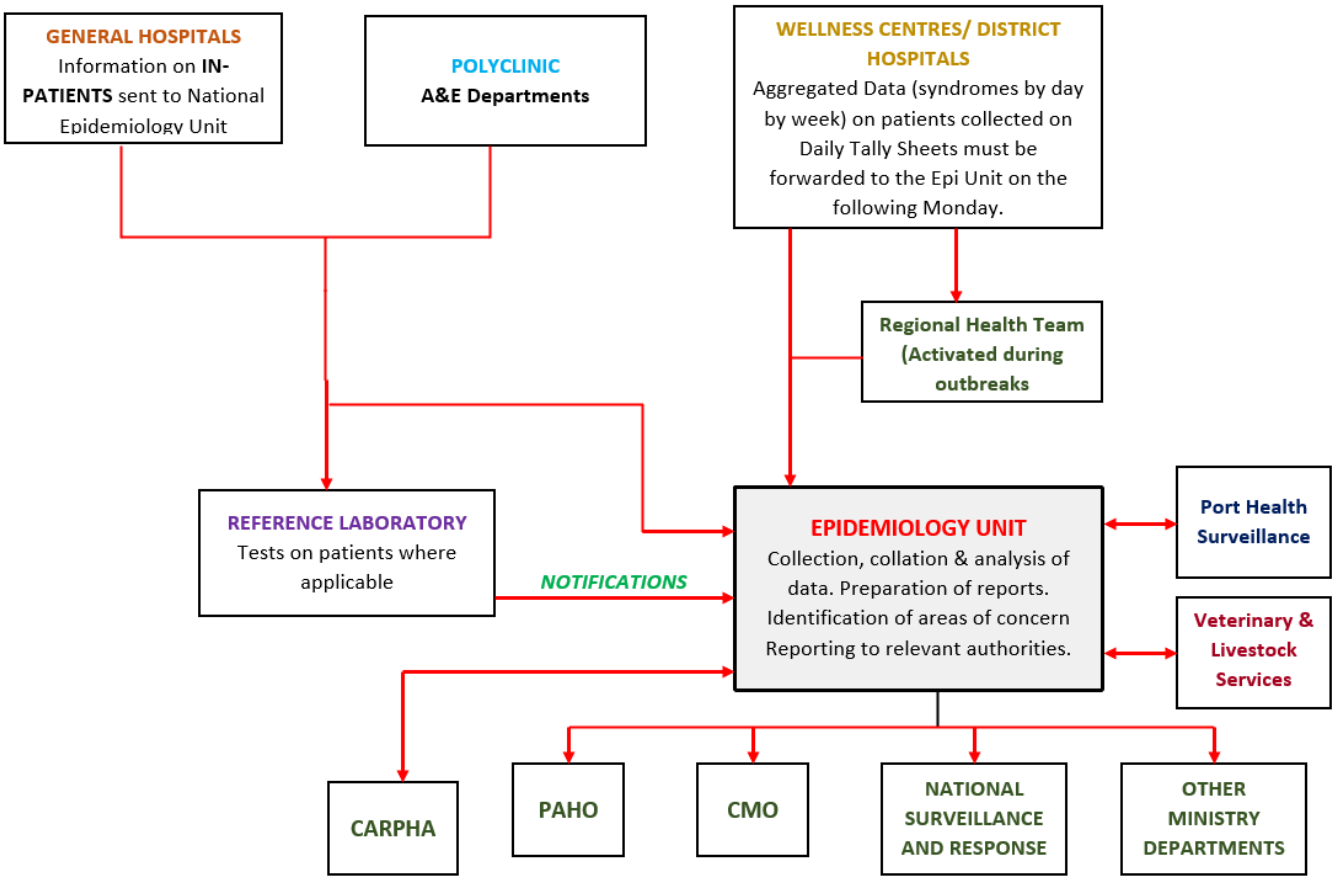
- **Verify the diagnosis and establish a case definition** using the syndromes, the distribution of cases since the beginning of the first known case by place, time, and characteristics of the patients, and possible environmental factors associated (biological, chemical, physical factors, social), lab tests or other complementary tests.
- **Confirm the existence of an outbreak**: Tables with incidence overtime that exceeds the expected numbers, if it is not a new disease in the area, the geographical distribution of the cases, the clinical and epidemiological characteristics of the cases and complications or severity.
- **Establish regular communication with the population** in the affected area and the country by MOH, for prevention and control and updates about the outbreak, causes and evolution.
- **Manage cases**, diagnostic and testing, treatments, including ICU, isolation at home or in a HCF, IPC measures, clinical and epidemiological discharges, HCW protection.
- **Active outbreak investigation, prevention, and control**: Record case histories and similar antecedents, contact tracing, quarantine at home or HCF, identify additional

cases, define and review periodically the population and risk based on the investigation results, and formulate hypothesis.
Distribute the cases systematically by place, time onset, demand of health care, and confirmation, and antecedents of exposure or contagion.
Take lab samples form patients or environment to explore the causes and verify hypothesis.
Design, if necessary, a case control study to explore potential causes. Define the agent, reservoir, mode of transmission and susceptibility of the (population). Use Go. Data, Epi-Info, or other for introducing data with defined variable ID for individuals and aggregate data from different sources, and integrating analysis, producing brief reports.

- Reanalyze the **prevention & control measures to stop transmission** and close the outbreak.
- **Conduct active ongoing disease surveillance** to be sure the outbreak is under control, and if can be closed after interrupted the transmission and defined the complex of causes which explained the outbreak.
- **Prepare the daily and final report and closure of the outbreak using the official MOH Forms for reporting, notification, follow up and contact tracing,** with a set of preventive and control measures and surveillance activities that should be further maintained.

## 6.5. Information flow

**SAINT LUCIA SYNDROMIC AND DISEASE REPORTING CHAIN AND DATA COLLECTION**




**Note:** Event-based surveillance for the daily signals report should be communicated immediately to Epidemiology Unit using Hotline available 24x7 hours. From the HCF to PH Nurses and District Health Officer, to Epidemiology Unit and/or HMIU, and review, analysis, and timely response (immediate or not) and feedback to National Stakeholders or to Districts, with technical support from MOH or an initial assessment and response at local level.

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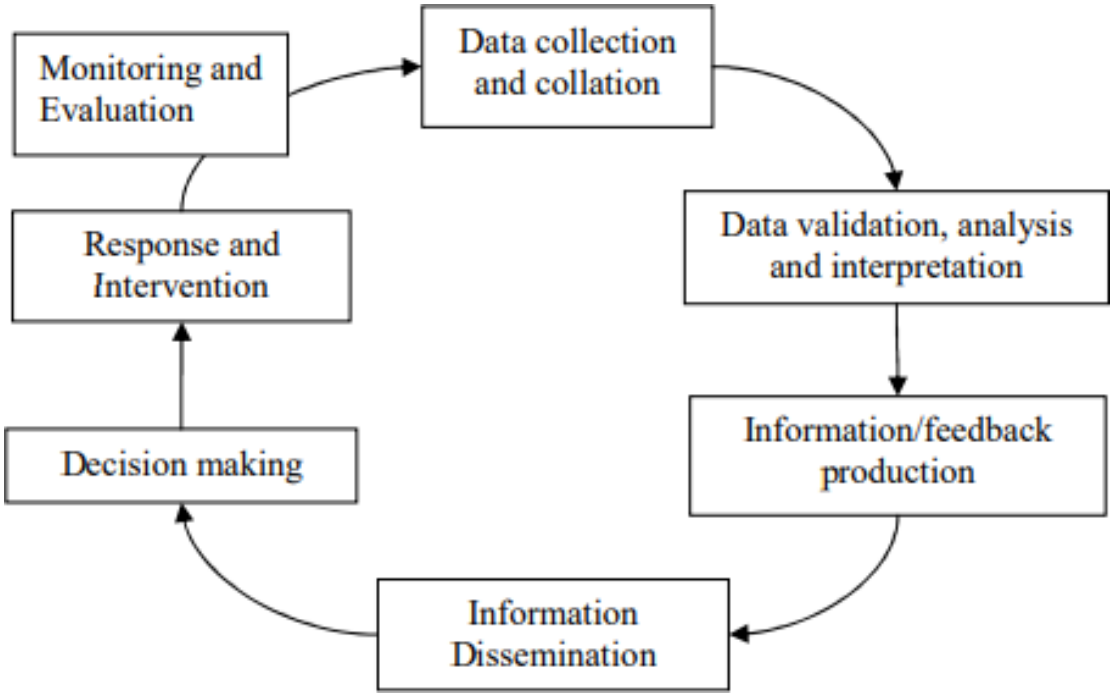
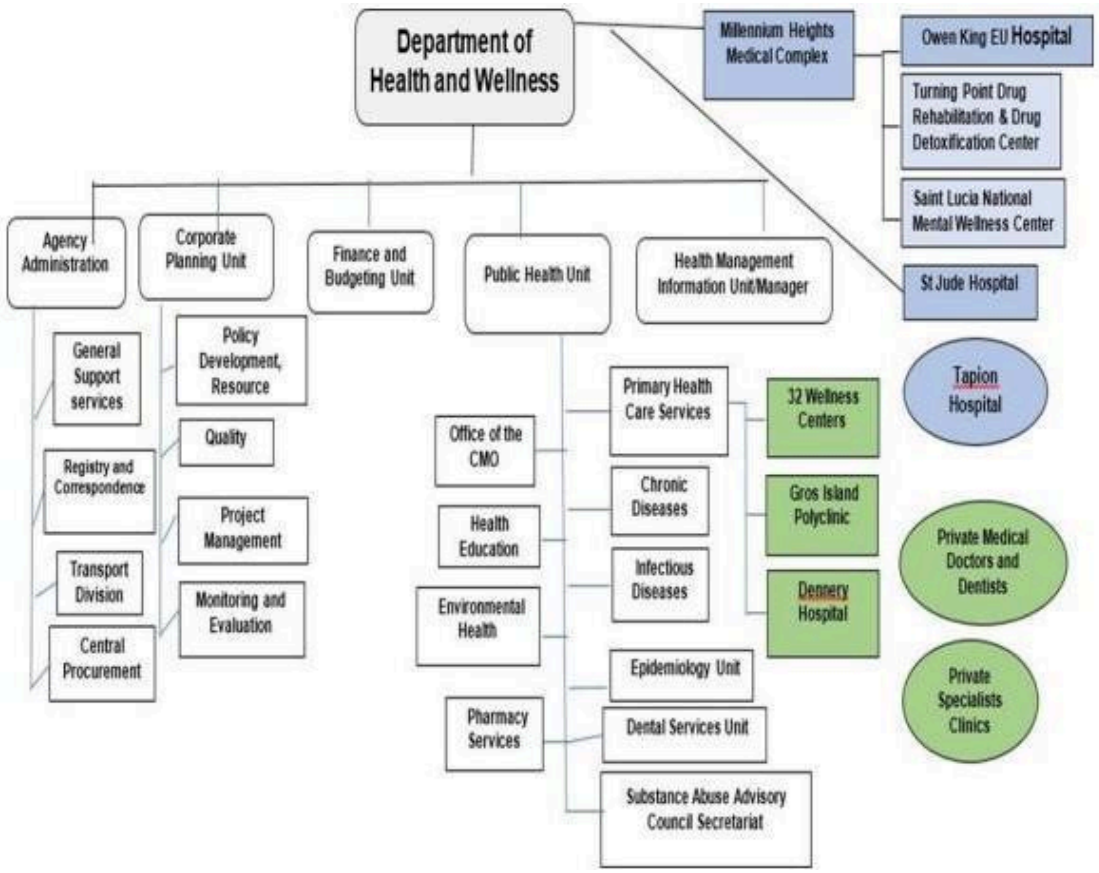
# 8. BACKGROUND TECHNICAL DOCUMENTS.

## 8.1. The Surveillance cycle




*Structure of the MOHW St. Lucia 2022*




## 8.2. Roles and responsibilities of the MOH National Surveillance and Response Team (NSRT)

**The National Surveillance and Responses Team (NSRT)** under the direction of CMO and technical coordination of the EpiU (meeting monthly), is responsible for the systematic monitoring and evaluation (M&E) of the system and ongoing surveillance of health threats, risk factors and health determinants of CD & NCD/MH and programs. The NSRT receives summary information of the international situation from PAHO/WHO and CARPHA. NSRT should keep the Minister, and by him, the Cabinet updated on the health situation (see Annex with roles and responsibilities of the NASRT).

The primary roles and responsibilities of the NSRT are (a) Analysis of data; (b) Dissemination of information for stakeholders and various professional groups and audiences; (c) Initiate, manage and evaluate preparedness and response activities to public health threats; (d) Develop collaboration with professionals and/or agencies with specific expertise to a given health problem; (e ) Follow up the course of outbreaks/epidemics and decide when to revert to routine; (f) Surveillance and public health activities; (g) Update and train the health personnel with the National Surveillance Manual and Guidelines as necessary; (h) M&E the system functioning and ongoing surveillance.

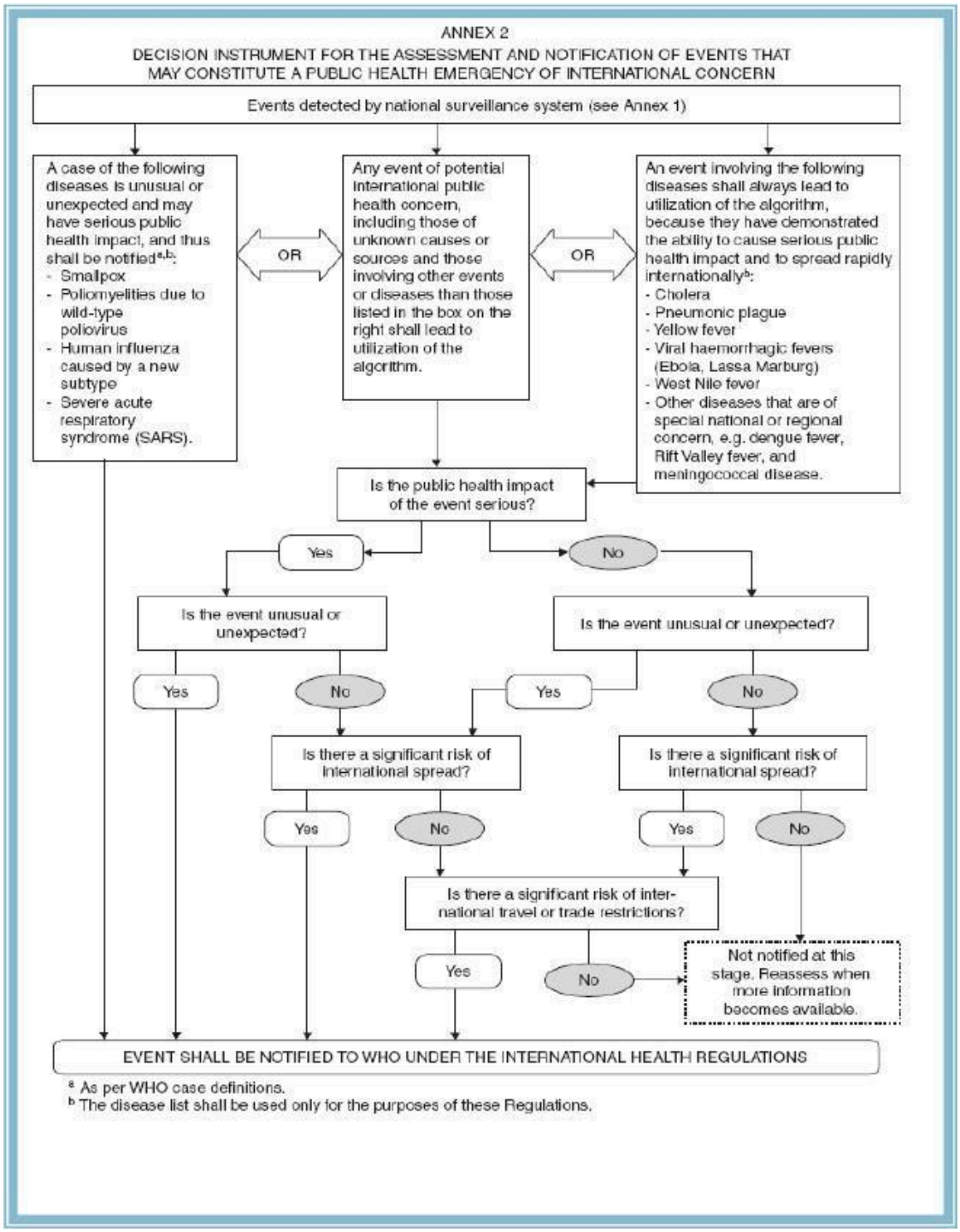
Members of the NSRT are Chief Medical Officer (Chair), National Epidemiologist (Deputy chair), Deputy Epidemiologist, Surveillance Officer, Chief Environmental Health Officer, Ezra Long (Victoria Hospital) Laboratory Director, Infection Control Nurse, Victoria Hospital $an_1d_4$
St. Jude Hospital, Principal Nursing Officer, EPI Manager, Director of Bureau of Health

Promotion, Director of National HIV/AIDS Programme, AMR NFP, Chief Veterinary Officer, NLAC Chair. Others will be co-opted when required**.**

## 8.3. COMMUNICATION TREES

*(Telephones + emails + WhatsApp + Radio of the MOH Key Stakeholders, Surveillance Officers and 24 x 7 emergency Services.)*

**IHR (2005 UPDATED)**



CONTACT LIST AND CONTACT MONITORING LIST FORMS. WHO 2018.

## CONTACT LIST FORM

**Contact list form filled in by:**

Case name _____ Case ID if assigned _____
Case neighbourhood/village _____ Chief or Community Leader _____
District/town _____ Province/region _____

| CONTACT SURNAME | FIRST NAME | RELATIONSHIP TO CASE | AGE (YEARS) | SEX | VILLAGE OR NEIGHBOURHOOD | DISTRICT OR TOWN | TYPE OF CONTACT* | DATE OF LAST CONTACT | LAST DATE FOR FOLLOW-UP | ASSIGNED CONTACT ID | DATE OF FIRST VISIT | CONTACT OUTCOME |
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## CONTACT MONITORING FORM

**Name of monitoring staff:**
**Contact phone of monitoring staff:**

| CONTACT ID | SURNAME | FIRST NAME | AGE | SEX | DATE OF LAST CONTACT WITH CASE | DATE OF LAST MONITORING VISIT TO CONTACT | FINDINGS ON DAILY FOLLOW-UP* | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
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## 8.4. Proposed MOH Saint Lucia Event Based Surveillance Reporting Form

1. **Unique identifier**: (YYYY- region/district – facility code/ facility name - sequential event number[1])_____

2. **Event type** (multiple checks as applicable):
   a. Human [ ]
   b. Non-human [ ]
   c. Biological [ ]
   d. Radio nuclear [ ]
   e. Chemical [ ]
   f. Zoonotic [ ]
   g. Disaster [ ]
   h. Environmental [ ]
   i. Health services [ ]
   j. Other risks [ ]

3. **Data source**:
   a. Name of reporting person_____

   b. Institution of reporting person (if applicable)_____

   c. Phone number of reporting person_____

   d. E-mail of reporting person_____

4. **Date of report** (DD-MM-YYYY):_____
5. **Date of onset of the event** (or detection of the event if onset is not known)

   (DD-MM-YYYY):_____

6. **Time of onset of the event if applicable** (24-hour clock):_____

7. **Geographic area** (to be identified by country, e.g., region, towns, wards, etc.):

8. **Description of the event** (e.g., number of cases, number of deaths, actions taken so far and the outcome/result), as well as demographics (Sex & age distribution, etc. as applicable):

[1] Start sequential numbering from 1 at the start of each year. E.g. the unique identifier for the first event of 2023 would be 2023-.-.-1; for the second event it would be 2023-.-.-2. The sequential number is the same a1s8 the number for the primary reporting person.

9. Which **criteria** under Annex 2 did the event meet (check all that applies)? (MOH use only)

   a) The public health impact of the event is serious [ ]
   b) The event is unusual or unexpected [ ]
   c) There is a significant risk of international spread [ ]
   d) There is a significant risk of international trade or travel restrictions [ ]

10. **Laboratory Test conducted**: Yes [ ] No [ ]

11. If yes, date(DD-MM-YY):

12. **Brief description of lab results**:

13. **Risk Assessment conducted (describe** : Yes [ ] No [ ]

14. **Declared event**: Yes [ ] No [ ]

**15. Actions taken (if it is an event):**

**Report received by: ____**

## 8.5. Proposed MOH Saint Lucia Event Based Surveillance reporting form dictionary.

| VARIABLE | DEFINITION |
|---|---|
| **1. Unique identifier:** | The unique identifier refers to a group of characters formed with: (a) year (YYYY), (b) region/district using the 2-digit format (00), (c) facility code/ facility name and (d) sequential event number where the possible event is referred. Start sequential numbering from 1 at the start of each year.<br>E.g. The unique identifier for the first event of 2023 would be 2023 -region-facility code and facility name -1; for the second event it would be 2023 - region and facility code/ facility name - 2. The sequential number is the same as the number for the primary reporting person. If the same event is reported more than once, is registered and after compared, and one of them completed and remains in the register. |
| | |
| **2. Event type (check as applicable):** | Refers to the type of event (Human, non-human, biological, radio nuclear, chemical, zoonotic, disaster, hazards - natural or man-made -, and other) as identified by the reporter. Check as many as applicable. |
| **3. Data Source** | |
| a. Name of reporting person | Full name (first and last name) of the person reporting the event. |
| b. Institution of reporting person | Name of the institution (health facility, ministries, non-organizations etc) of the person reporting the event if applicable. |
| c. Phone number - reporting person | Mobile or land line number of the person reporting the event. |
| d. E-mail of reporting person | E-mail address of the person reporting the event. |
| **4. Date of report** | Refers to the date the event is reported using the DD-MM-YYYY format. |
| | |
| **5. Date of onset of the event** | Refers to the date of onset of the even reported (DD-MM-YYYY). The date of detection (DD-MM-YYYY) of the event can be entered if the date of onset is not known. |
| | |
| **6. Time of onset of the event** | Refers to the time the event started, if applicable, using the 24 hour clock. |

| | |
|---|---|
| **7. Geographic area** | Refers to the geographic divisions within the country, e.g. region, district, sub-district, towns, villages, wards, etc. using the geopolitical division of Guyana. |
| **VARIABLE** | **DEFINITION** |

| | |
|---|---|
| **8. Description of the event** | This refers to the number of cases, number of deaths, symptomatology, actions taken so far and the outcome/result, as well as demographics (sex & age distribution, etc.) as applicable. It can also include the description of a risk that has not caused disease yet, i.e. possible food or water contamination, accidents in different settings like schools or workplace, potential risk for human health, consequences of natural disasters or accidents, animal<br>diseases, situation at Point of Entry or in borders, problems that seriously affect health services in a hospital, any health – related event, etc. |
| **9. Which criteria under Annex 2 did the event meet (check all that applies)?** | Refers to the criteria for assessment and notification of events that may constitute a public health emergency of international concern. The criteria are as follows:<br>a) The public health impact of the event was or can be serious<br>d) The event is unusual or unexpected in the region or country<br>c) There a significant risk of international spread<br>d) There a significant risk of international trade or travel restrictions |
| **10. Laboratory Test conducted:** | Check Yes [ ] or No [ ] if laboratory test was conducted or not. |
| **11. If yes, date** | If No. 10 was answered YES, this refers to the date (DD-MM-YY) the laboratory test was conducted. |
| **12. Description of lab results:** | This refers to the description of the results of the laboratory analysis (can be known or not because takes time for processing). |
| **13. Declared event:** | This refers to the consensus of the regional team on whether the situation is an event or not (after which MOPH will review). Check Yes [ ] or No [ ] |
| **14. Risk Assessment conducted:** | Refers to the rapid risk assessment conducted by the Regional-District or any local team using Annex - Rapid Risk Assessment WHO EBS 2008. MOPH may or may not participate due to the nature of the event. Check Yes [ ] or No [ ] |
| **15. Actions taken, if it is an event** | Describe |
| **16. Report received by:** | Full name (first and last name) of the staff at Regional level or Ministry of Public Health receiving the report from the Region. |

## 8.6. Rapid Risk Assessment - If an event report meets one of the following criteria, a response is triggered (WHO EBS 2008).

| | ASSESSMENT QUESTION | YES | NO |
|---|---|---|---|
| **Human heath events** | Does the event involve a notifiable disease or syndrome (i.e diphtheria, watery diarrhoea)? | | |
| | Can the suspected disease cause outbreaks with a high potential for spread (i.e. cholera, measles)? | | |
| | Is there a higher than expected mortality or morbidity from the disease? | | |
| | Is the disease unusual/unexpected in the community? | | |
| | Is there a cluster of cases or deaths with similar symptoms (i.e. bloody diarrhoea, haemorrhagic signs and symptoms)? | | |
| | Could the disease be caused by a contaminated, commercially available product (i.e. food item)? | | |
| | Does the disease have possible consequences for trade or travel (i.e. SARS)? | | |
| | Is there suspected nosocomial spread of the infection (i.e. is the infection being transmitted within a health care setting)? | | |
| **Non-human health events** | Does the event have a **known** consequence for human health (i.e. chemical spill, suspected Nipah outbreak in animals, unexplained deaths in animals)? | | |
| | Does the event have a **possible** consequence for human health (i.e. suspected zoontic disease outbreak in animals)? | | |

# 9. STANDARD OPERATING PROCEDURES (SOPs)

1. Dengue
2. Respiratory Illnesses
3. Sexually Transmitted Diseases
4. Vaccine Preventable Diseases (including Vaccine Safety − ESAVI)
5. Mental Health
6. National Disaster – Plan
7. Specific SOPS −

Outbreaks Schools

Health Center

Grocery store

8. Foodborne outbreaks
9. Leprosy – algorithm
10. Tropical Diseases
11. Oral Diseases
12. Port Health
13. Health Care associated diseases
14. Exposure to toxic substance

## 10. Case Definitions

# 11. Job Aids