

TERMS OF REFERENCE

REGIONAL
(RG-T4359)

Epidemiologist, Electronic Regional Integrated Surveillance System

1. BACKGROUND

The Caribbean Public Health Agency (CARPHA), as the lead regional public health agency and an expression of Caribbean Cooperation in Health, is mandated by its Inter-governmental Agreement (IGA) to support its 26 Member States in bolstering national systems and coordinating regional response to public health threats. CARPHA has established programs for pandemic prevention, preparedness and response (PPR) and coordination (Communicable Diseases, Emergency Response, Tourism and Health, Foodborne, Vector-borne, and Field Epidemiology) and serves as the Regional Reference Laboratory. The Agency works closely with regional and international agencies and uses regional mechanisms, surveillance systems, and networks for coordinating its public health response work. CARPHA is competent in all three areas of PPR and has a successful track record of the same, as demonstrated by its regional COVID-19 response. The Agency is uniquely positioned for successfully implementing PPR capacities in the region, and to leverage its coordinating ability to encourage complementarity.

The Pandemic Fund (PF), established in September 2022, is the first multilateral financing mechanism dedicated to providing multiyear grants to help low- and middle-income countries become better prepared for future pandemics. The PF's first Call for Proposals provides additional financing to strengthen PPR capabilities and address critical gaps in low- and middle-income countries through investments and technical support at the national, regional, and global levels. It is expected to support and reinforce capacity building and implementation of pandemic prevention, preparedness and response (PPR) under the IHR (2005) and other legal frameworks, consistent with the One Health approach. The three high-priority areas are:

- Comprehensive disease surveillance and early warning systems (EWS)
- Laboratory systems
- Human resources and public health and community workforce capacity.

In August 2023, the PF Governing Board announced that CARPHA's regional entity proposal, entitled '*Reducing the Public Health Impact of Pandemics in the Caribbean through Strengthened Integrated Early Warning Surveillance, Laboratory Systems and Workforce Development*' was successfully selected for the first round of financing. CARPHA is the Executing Agency and the IDB is the Implementing Entity.

The Goal of this Project is to Reduce the Public Health Impact of Pandemics in the Caribbean through Prevention, Preparedness, and Response. The Objective is to support CARPHA in reducing the public health impact of pandemics in the Caribbean region will serve to build PPR surveillance & EWS, laboratory systems and workforce capacity at CARPHA and at country levels.

The Project comprises the following five components:

- Component 1: Strengthening and Expanding Integrated EWS
- Component 2: Expansion of Laboratory Systems
- Component 3: Workforce Development
- Component 4: Regional Strategic Coordination, Collaboration & Commitment to Pandemic Response
- Component 5: Monitoring, Evaluation, and Project Management

The Consultancy is concerned with *Component 1: Strengthening and Expanding Integrated EWS* and seeks an individual to function as the **Epidemiologist (Electronic Regional Integrated Surveillance System)** in the Project's Project Execution Unit (PEU).

2. OBJECTIVE

The objective of the **Epidemiologist (Electronic Regional Integrated Surveillance System)** is to develop/expand and reinforce and operationalize CARPHA's regional electronic integrated surveillance system (EISS) to a fully integrated, multi-sectoral surveillance and EWS system, linking human, animal, environmental, laboratory and epidemiology data (One Health), for timely data collection, monitoring and reporting at CARPHA and in CARPHA Member States (CMS). This will include the operationalization of a digital integrated platform that integrates the various surveillance system at CARPHA with in-built early warning alerts. The epidemiologist will be responsible for the achievement of a key deliverable in Component 1: Strengthening and Expanding Integrated EWS.

The epidemiologist will interact with relevant CARPHA departments (Communicable Diseases and Emergency Response, Laboratory, Tourism and Health, Foodborne, Vector-borne, Field Epidemiology & Public Health Workforce Development) and CMS in accordance with the Projects Operations Manual, including aligning to CARPHA's communication protocols with CMS; the Project's epidemiologist for Emergency Response and Early warning Systems(EWS) and other relevant persons in the Project for developing and implementing the EISS. The epidemiologist, together with the Project Director, will also interact with relevant international experts, agencies and firms for specific thematic support.

3. SPECIFIC TASKS AND EXPECTED DELIVERABLES

3.1. Assess and collaborate with CARPHA, countries and other experts and stakeholders to design, plan, strengthen integrate and implement a regional, electronic integrated surveillance systems (EISS) and EWS at CARPHA, and in CMS:

- Gather and analyse the CMS and Agency's requirements for implementing EISS, understanding the desired outcomes and objectives.
- Identify the parameters for integrating specific surveillance systems at CARPHA where EISS and EWS can provide value and align with CARPHA's and country and project's objectives.
- Sought international expertise to support the development of the EISS.
- Works closely with the epidemiologist for Emergency Response and Early warning Systems(EWS) for developing and implementing the EISS system.

3.2 Develop and implement the EISS and EWS solutions identified including:

- Operationalization of a digital integrated platform that integrates the various surveillance system at CARPHA with in-built early warning alerts to allow for immediate response.
- Document the solution design, decisions, and implementation details including its integration with existing systems and workflows.
- Support countries with implementation.

3.3 Develop and implement effective alert systems and epidemiologic reports summarizing the surveillance findings for sharing with all relevant stakeholders:

- Identify and set up the necessary processes, collaborate with IT in including computing development required to support implementation.
- Provide regular reports and immediate reports for outbreaks.

3.4 Analyse collected data from the integrated surveillance systems to identify patterns, trends, and potential outbreaks:

- Develop standard analyses and monitoring procedures for detecting and giving epidemiologic summaries on data collected through the EISS and EWS.
- Test and fine-tune the analyses using relevant data sets and algorithms.

3.5 Provide real time EISS reports:

- Works closely with the epidemiologist for Emergency Response and Early warning Systems (EWS) for EISS and EWS reports.

3.6 Providing Training and Knowledge Transfer:

- Develop training materials and conduct training sessions to educate users and stakeholders on the EISS.
- Transfer knowledge to the Agency's team, ensuring they have the necessary skills to maintain and utilise the system effectively.

3.7 Provide support for identifying Data Privacy and Security Concerns:

- Identify potential data sharing, privacy and security risks associated with EISS implementation.
- Define Data Sharing protocols to support the effective functioning of an integrated surveillance system requiring the sharing of data.

Key Outputs:

- I. Regional Electronic Integrated Information System for Surveillance and Early Warning and Response Systems (EWS) implemented – **Activities 3.1 - 3.5**
- II. Compiled Standard Operating Procedures (SOPs) for Electronic Regional Integrated Information System for Surveillance and Early Warning and Response Systems (EWS) delivered – **Activities 3.6 – 3.7**
- III. Integrated EISS and EWS Reports (weekly /immediate in the case of an outbreak).

4. QUALIFICATIONS AND EXPERIENCE

Academic Qualifications:

- At least a Post Graduate Degree (Master's or above) in Public Health/Epidemiology, International Public Health/Global Health / Field Epidemiology or equivalent training and experience.

Experience:

- At least 10 years' experience working in public health in the areas of field epidemiology, disease surveillance and infectious disease control in public health.
- Working in a regional public health setting will be an asset.
- Operating early warning surveillance systems and conducting outbreak investigations.
- Disease/risk modelling would be an asset.
- Ability to initiate, develop, maintain and leverage partnerships with key stakeholders.
- Ability to successfully apply the Agency's communication policies and strategies in interactions with key stakeholders in member states and international partners.
- Extensive knowledge of information management and data analysis issues gained from a public health, scientific or research environment.
- In-depth knowledge of electronic information systems design principles and their applications.
- Ability to think strategically, to set direction and apply a results-based approach.
- Familiarity with public health issues and trends, epidemiological theory, principles and practices and surveillance techniques, systems and procedures.
- Strong analytical and systems-thinking skills with experience of handling complex data and the ability to adapt software systems.
- Considerable experience of collecting, storing, manipulating, analysing and interpreting data from disparate sources bringing them together to provide public health intelligence.
- Ability to work under pressure and to meet tight deadlines.
- Public health leadership skills with demonstrated ability to work effectively with governments and colleagues in a team setting.
- Strong interpersonal, systems-thinking and analytical skills as well as the ability to work independently with minimal guidance in a dynamic and challenging environment.
- Knowledge of the health situation in the Caribbean.
- Proficiency in developing and implementing population-based, health security interventions reflective of public health considerations of small-island developing states (SIDS).
- Implements approaches to the practice of public health in the Caribbean.

Expert Knowledge and Skills:

- Specialized knowledge and skills in Communicable Diseases Epidemiology / Disease Outbreak Investigations.
- Experience working in communicable diseases surveillance and or outbreak response at a Country or regional level/ international.
- Experience working with a fully integrated electronic based surveillance system will be an asset.

- Demonstrated experience in being part of a team developing and/or maintaining epidemiological databases.
- Ability to communicate effectively with diverse stakeholders.
- Excellent problem-solving skills and ability for critical thinking.
- Experience working with Caribbean countries will be an asset.
- Strong competence level in Microsoft Office - Word, Excel, PowerPoint, SharePoint, MS Project, etc.
- Demonstrated ability to manage the use of web conferencing platforms such as Zoom, Webex, Microsoft Teams, etc.

Mandatory Compliance:

- **Eligibility:** as per *Policies for the Selection and Contracting of Consultants Financed by IDB-GN-2350-15 May 2019*: Section I. Clause 1.13 Eligibility. Information on Eligible Countries is at Annex 3.
- **No Conflict of Interest:** as per *Policies for the Selection and Contracting of Consultants Financed by IDB-GN-2350-15 May 2019*: Section I Clause 1.11 Conflict of Interest
- **Not Sanctioned by the Bank:** IDB's Group List of sanctioned firms and individuals – <https://www.iadb.org/en/topics/transparency/integrity-at-the-idb-group/sanctioned-firms-and-individuals%2C1293.html>

5. CHARACTERISTICS OF THE CONSULTANCY

- Type of Consultancy: Individual
- Duration: 36 months (first 6 months probationary)
- Place of Work: Caribbean Public Health Agency (CARPHA) HQ, Port of Spain, Trinidad and Tobago (in-person)
- Working Language: English

6. REPORTING REQUIREMENTS AND TIME SCHEDULE FOR DELIVERABLES

All payments will be made upon submission and acceptance of monthly invoices and timesheets by the Project Director (CARPHA Technical Lead) or designate.

7. CLIENT INPUT AND COUNTERPART PERSONNEL

CARPHA will provide the **Epidemiologist (Electronic Regional Integrated Surveillance System)** with the applicable laws and policies, Operations Manual, relevant project documentation, office space and relevant computer equipment.

8. COORDINATION

The **Epidemiologist (Electronic Regional Integrated Surveillance System)** will report to the Technical Coordinator who will in turn report to the Project Director (CARPHA Technical Lead)/designate. The Project Director will be responsible for the coordination of activities under the contract, for accepting and approving reports on behalf of CARPHA, receiving and approving invoices for payment, and preparing performance evaluation reports.

The **Epidemiologist (Electronic Regional Integrated Surveillance System)** will be required to meet regularly with the Project Steering Committee, and officials from the IDB. The Epidemiologist (Electronic Regional Integrated Surveillance System) is expected to collaborate, liaise or meet as required with specialist team members in the PEU, CARPHA's personnel, assigned subject matter experts, executives and stakeholders, and representatives of the IDB.