

# Laboratory Core Functions and Support for Surveillance at the Caribbean Epidemiology Centre

## The CAREC Team

# Outline of Presentation

- ❖ **Introduction**
- ❖ **Proposed Core Functions**
- ❖ **Current Status of Implementation**
- ❖ **Conclusion**

# CAREC Mission Statement

- ❖ *‘To improve the health status of Caribbean people by advancing the capability of member countries in epidemiology, laboratory technology and related public health disciplines through Technical Cooperation, service, training, research and a well trained motivated staff.’*



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# Interface Laboratory- Epidemiology

- ❖ Major strides have been made evidenced by:
  - The joint development of the surveillance package of services
  - Manner in which both divisions participated in the response to the Influenza A H1N1 pandemic
- ❖ It is hoped that this close interfacing will continue not only in response to crises and outbreaks but also for the planning of health risk assessments in the CAREC member countries

# CAREC Laboratory

- ❖ Emphasis of the laboratory is public health surveillance
- ❖ Primary diagnostic service is provided if required
- ❖ Since 2008, the re-alignment has resulted in a shift of testing services which respond primarily to diseases of high public health impact



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# Proposed Core Functions of the CAREC Laboratory

- ❖ To ensure success the laboratory should have capability to implement the following **eight (8) core functions**:
  - **Reference, specialized and diagnostic testing**
  - **Communicable disease prevention, control, and surveillance**
  - **Outbreak and emergency response for communicable diseases**
  - **Laboratory improvement and regulation (Quality Assurance) through Public health policy development**
  - **Integrated communicable disease data management**
  - **Public health-related research**
  - **Training and education of public health professionals**
  - **Partnerships and communication**



# Core Function 1: Reference, Specialized and Diagnostic Testing

- ❖ Serve as the region's primary reference public health laboratory to:
  - test for and aid in the diagnosis of unusual pathogens (emerging and re-emerging pathogens)
  - confirm atypical laboratory test results in infections of public health importance
  - provide molecular epidemiology testing of epidemiologically significant specimens with potential public health implications
  - provide reference diagnostic testing for laboratories which do not have the capability to identify disease agents of clinical or public health importance





# Core Function 2: Communicable Disease (CD) Prevention, Control and Surveillance

- ❖ Provide accurate analytical results in a timely manner for the assessment and surveillance of communicable diseases of importance to the public health community
- ❖ Serve as a first line of defense in the rapid recognition and prevention of the spread of communicable diseases
- ❖ Serve as a centre of expertise for the detection and identification of biologic agents of significance in human disease
- ❖ Provide specialized testing for low-incidence infections or high-risk diseases such as tuberculosis, plague, and detect epidemiologic shifts





# Core Function 3: Outbreak and Emergency Response for Communicable Diseases

- ❖ Provide laboratory support as part of national and regional disaster preparedness plans for public health emergencies and natural disasters including:
  - Laboratory support for the investigation of food borne outbreaks and outbreaks of antibiotic resistant organisms
  - Rapid identification and investigative analyses of biological agents, regardless of the source of exposure
  - Assist in the coordination and development of capacity to quickly and accurately handle a substantial volume of tests during an emergency situation



# Core Function 4: Laboratory Improvement and Regulation through Public Health Policy Development

- ❖ Serve as the standard of excellence for other regional and national public health laboratory performance
- ❖ Coordinate and promote quality assurance programs for national public health laboratories through consultation; training and oversight of implementation
- ❖ Provide leadership in biosafety and biosecurity management through training programmes inclusive of Transportation of Dangerous Goods (TDG), Biorisk Management and other Biosafety training programmes.
- ❖ Participate in developing standards for all health-related laboratories including food, environmental, clinical, and research standards



# Core Function 5: Integrated Communicable Disease Data Management

- ❖ Serve as the regional repository for scientific information in support of public health programs
- ❖ Serve as a key data key link with other regional and international public health agencies for the surveillance of diseases of regional concern
- ❖ Serve the data needs of national and regional epidemiologists, other laboratories, and practitioners in identifying trends and sentinel events that indicate emerging health problems



# Core Function 6: Public Health-Related Research

- ❖ Evaluate and implement new technologies and analytical methodologies to ensure national laboratories provide cost-effective, timely diagnostic services to support the public health and health-care communities in the region, including
- ❖ Conduct applied studies into new and improved analytical methods and services that are necessary to meet changing public health surveillance requirements
- ❖ Collaborate with academic researchers and other regional/international agencies to adapt and evaluate emerging technologies for a public health laboratory



# Core Function 7: Training and Education of Public Health Professionals

- ❖ Provide or facilitate training opportunities and programmes for laboratory staff to upgrade scientific knowledge and technical skills essential for providing quality services in public health laboratories
- ❖ Provide training opportunities to prepare for careers in public health laboratory practice and facilitate continued education in management and leadership



# Core Function 8:

## Partnerships and Communication

- ❖ Develop and strengthen partnerships with regional and international counterparts in order to emphasize the role and value of public health laboratory networks in national/regional public health programs
- ❖ Participate in regional strategic policy planning and development processes
- ❖ Maintain strong communication networks among laboratory management staff; chief medical officers; national epidemiologists; health officers



# Status of Implementation

| Core Function   | Status         | Comment  |
|---|----------------|--|
| 1. Reference, specialized and diagnostic testing                                  | Partially      | Review of competencies to fulfill all types of requests is in progress                 |
| 2. Communicable disease prevention, control, and surveillance                     | Partially      | Improved capabilities needed for areas such as STI/TB, Parasitology                    |
| 3. Outbreak and emergency response  | Fully          | e.g. Influenza H1N1 Pandemic, 2010 Dengue Outbreak, preparedness for Cholera           |
| 4. Laboratory improvement and regulation through public health policy development | Initiated      | Implementation of a QMS within the laboratory  |
| 5. Integrated communicable disease data management                                | Fully          | Repository of laboratory information is used by Epidemiologists and other stakeholders |
| 6. Public health-related research   | Not being done |  |
| 7. Training and education of public health professionals                          | Partially      | Facilitate training of regional professionals through collaborations                   |
| 8. Partnerships and communication   | Partially      | Participatory role in discussions with regional and international partners             |



# CONCLUSION

Fulfillment of the core functions provides the CAREC Laboratory with the road map to enhancing its support of public health surveillance



**THANK YOU**