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# CAREC SURVEILLANCE REPORT

## Leading the Quality Assurance Journey: the EU-funded project "Strengthening Medical Laboratory Services in the Caribbean"

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### MEDICAL LABORATORY SERVICES: THE NEED FOR IMPROVEMENT

The negative impact of diseases on public well-being and on tourism markets in the Caribbean has reinforced the recognition that disease prevention and control are critical to sustainable development in this region. Without a doubt, reduction in disease outbreaks that threaten personal health and the tourism industry, a major source of economic growth, employment and foreign currency, is dependent on strong and viable health systems. It should be noted that over the past three decades, the tourism industry has become an increasingly important part of the diversification strategy of Caribbean economies and represented an overall turnover of some $20 billion US for CAREC member countries in 2000 with revenues from tourism often representing a significant percentage of national GNPs – from as high as 75% in Anguilla to 25% in Jamaica (Source: Caribbean Tourism Organisation (CTO).

## Contents

Delays in the detection and investigation of outbreaks have led to the loss of millions of dollars in cancelled visitor arrivals and increased expenditures on local health services. For example, income lost due to the 1996 outbreak of Legionnaire's disease in one country was estimated at $150,000 US. Additionally, the failure to provide accurate and early diagnosis of high-impact diseases such as cancer, AIDS and diabetes has often resulted in preventable loss of life. Health laboratories in large measure, underpin the success of disease control, elimination and prevention efforts, often being the first site of detection and confirmation of disease outbreaks. However, the quality of both public and private sector laboratory services in the Caribbean varies widely and no regional mechanism, and in many instances no national mechanisms, currently exist for standardising, monitoring or controlling the quality of medical laboratory services.

Over the past decade CAREC has observed a general lack of standards in laboratories in the region as well as a general paucity of laboratory management skills resulting in unacceptable levels of error in several instances, poor physical infrastructure, inadequate laboratory information management systems, and inefficient use of laboratory resources among other limitations. Acknowledging these realities, the Health Minister of Trinidad and Tobago, the Honourable Mr. Colm Imbert, recently stated that: "*The Ministry will be introducing legislation in keeping with the norms and standards to establish a regulatory environment for [the] unauthorized laboratories, so that the public can be assured that the test results they receive are accurate and reliable*" (Sunday Express, August 24, 2003).

## A RESPONSE: THE STRENGTHENING MEDICAL LABORATORY SERVICES PROJECT EXECUTED BY CAREC

In response, CAREC has been mandated by Caribbean countries to play a lead role in the reform of medical laboratories within the region. The project is budgeted at 9.755 million euro over a 4-year period with 7.5 million euro requested from 8$^{th}$ EDF funds and 2.255 million euro as counterpart contributions. The project implementation began in November 2002.

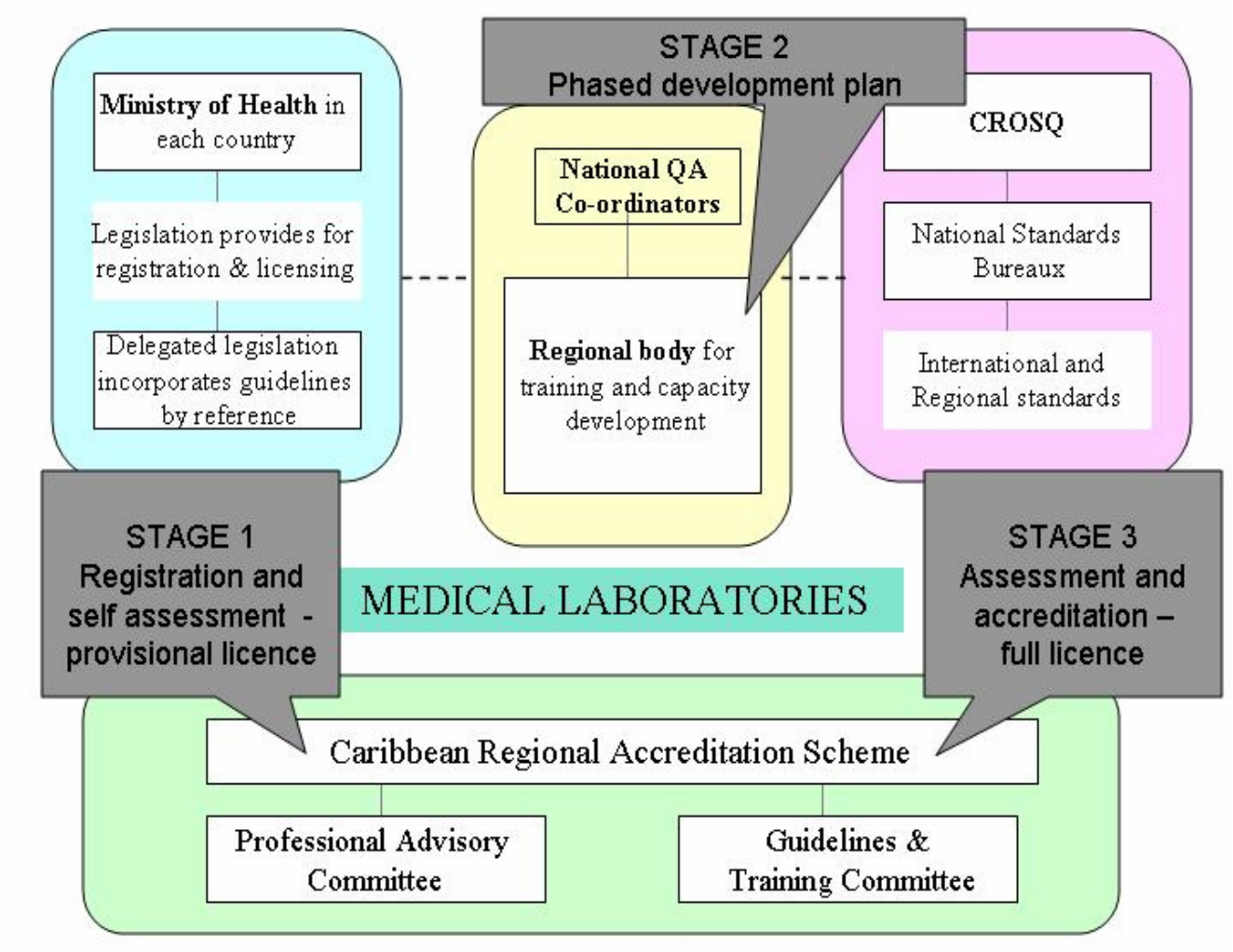
The project's overall objective is to improve patient management, disease prevention and control through improved national and regional medical laboratory information. More specifically, the project's purpose is to improve management of, and co-ordination between, public and private laboratories in the CARIFORUM region, leading to increased availability of high-quality laboratory information. The project itself is divided into five components:

## COMPONENT 1: LEGISLATION AND ACCREDITATION

The establishment of regional medical laboratory standards and an accreditation mechanism and national legislation and registration schemes are key ingredients in the project's strategy to strengthen laboratory services in the Caribbean. To that end, the project will assist the Regional Office for Standards and Quality (CROSQ) in collaboration with each country's national Bureau of Standards to establish a regional accreditation and monitoring body for medical laboratory quality assurance (QA). On-going work, initiated during the first meeting of the Legislation and Accreditation Advisory Sub-committee, held in Port-of-Spain from April 8-10 of this year, will generate a regional model for national registration and control of laboratory practices (Figure 1).

The Sub-Committee for Standards development met in October and agreed to adopt the international standard, *ISO 15189:2003, "Medical Laboratories – Particular requirements for quality and competence*" as the regional standard for medical laboratories in the Caribbean. The Sub-Committee drafted guidelines for implementation of this standard based on the Clinical Pathology Accreditation (UK) Ltd standards (which were developed to be consistent with the ISO 15189:2003 standard). These draft guidelines will be circulated regionally for input and discussion by December, 2003.

**Figure 1. Recommendation for a regional framework for regulation of medical laboratories**



## COMPONENT 2: HUMAN RESOURCE DEVELOPMENT

The human resource development component will focus on increasing the training capacity at the national and regional levels in the area of medical laboratory technology and building of laboratory quality management skills among Caribbean technologists. Public and private sector laboratory staff will be trained in medical laboratory Quality Management in the 15 CARIFORUM countries. The project will train regional assessors, national QA coordinators, laboratory directors, and QA trainers through both regional workshops and residential internships in overseas laboratories. These key actors will then train all laboratory technologists within their respective countries. Through modification and retooling of existing curricula, upgraded capacities in training institutions will also strengthen the training of new recruits to the profession. Improvements in facilities for regional continuing education and distance learning programmes will facilitate lifelong learning among laboratory technologists. This component also includes the establishment of twinning programmes between Caribbean labs and selected labs in more industrialised countries. In this respect, initial discussions were held with the CDC (Atlanta), the Michener Institute (Toronto) and Mohawk College (Toronto).

The project's Curriculum Advisory Sub-Committee will specifically address issues related to the review, modification and/or reform of curricula used by Caribbean institutions to train medical technologists. It has undertaken the redefining of competencies for medical laboratory technologists during its first meeting in Trinidad, from March 10-12, 2003, as well as a review of Caribbean curricula and the identification of gaps. A follow-up Curriculum Competency workshop was conducted in October.

The first module of an eight module 3-year training programme for Laboratory and QA Managers was conducted in Port-of-Spain from June 15-20, 2003 and gathered 60 participants from CARIFORUM, CAREC and Dutch & United Kingdom Overseas Territories. This training programme utilises a combination of seminars & presentations, live lectures, interactive discussions, case studies, written assignments, practical hands-on projects or action-learning, mentoring and individual development planning. The Michener Institute in Canada has agreed to credential this programme and participants who meet all course requirements will receive a Michener/CAREC Post-graduate Certificate in Quality and Laboratory Management. The second module of the programme is to be held in Trinidad & Tobago in December.

## COMPONENT 3: LABORATORY MANAGEMENT

The laboratory management component will be aimed at improving management systems at both public and private laboratories to ensure that the infrastructure is in place to allow trained personnel to deliver quality lab services. The project will improve public and private laboratory management through the support for implementation of Quality Assurance Programmes. Each country is expected to appoint a QA Coordinator and a National Committee, whose tasks include the development and implementation of national lab strategic plans and annual plans as well as the development of databases and monitoring mechanisms for tracking national project implementation. The goal is that laboratories will implement standards utilising phased objectives for quality improvement, and with support from training and other programmes. National Strategic Plans have been developed or initiated in Jamaica, Haiti, the Bahamas, Dominican Republic, Belize, St. Kitts & Nevis and Cayman Islands.

Emphasis will be also be placed on training laboratory managers (from the public and private sectors) in good laboratory management practices with respect to human resource management, maintenance of equipment, procurement systems, inventory management, financing arrangements, cost effectiveness and efficiency of methods, equity and safety standards.

Baseline evaluations will form the basis for measuring project implementation. All countries have completed a baseline self assessment of laboratory operations in at least the national laboratory, with several of theses assessments already validated by project staff. Needs assessments for laboratory information systems have also been initiated.

## COMPONENT 4: REGIONAL COORDINATION AND INTEGRATION

The Regional Coordination component will address the need for greater coordination and integration of Caribbean laboratories through the establishment of laboratory networks to facilitate sharing of expertise, services and information. This will consist of the development of databases on many aspects of laboratory services, sharing of timely information on new developments in laboratory science, regional proficiency testing, establishment of a network of regional reference nodes, and the development of "chatrooms" and electronic discussion fora for regional laboratorians. An agreement has been reached with CAREC laboratories to support all aspects of the proficiency-testing program on a cost-recovery basis.

## COMPONENT 5: OPERATIONAL RESEARCH

Eventually, the project will conduct operational research into key issues, including the mix of public and private laboratories, financing strategies, maintenance and procurement systems, personnel management and laboratory information systems. The findings will influence strategies to estimate costs, finance laboratory services and generally improve lab efficiency and effectiveness. They will also influence the content of training courses, policy dialogue, advocacy and laboratory QA. The project will also allow for the sharing of best practices within the region.

## CHALLENGES & STRATEGIES FOR SUCCESS

A highly skilled Project Management Unit (PMU) is required for implementing the project. To date the PMU consists of a Project Manager, Training Manager, Laboratory Information Systems Specialist, Laboratory Systems Specialist, Financial Controller/Office Administrator and Administrative support. Recruitment for the position of Laboratory Technical Specialist (Microbiology) is underway. In order to more effectively utilise expertise and resources, the Project management unit has established a number of Advisory Committees. A Steering Committee that meets annually is more specifically in charge of the endorsement and review of yearly work-plans.

Three Technical Advisory Committees have been created: Standards, Accreditation and Legislation; Human Resource Development; and Laboratory Management, Systems Development and Research. Those committees allow for a wide involvement of key stakeholders, facilitate ownership of the project outcomes, and are a way of obtaining valuable technical expertise, inputs and knowledge in the project implementation.

They will ensure that a realistic view of the issues is presented, and thus relevant solutions formulated and applied, that will in the final analysis support sustainability of project outcomes.

In a four-year time period, the following outcomes are expected:

- A regional medical laboratory standards and accreditation and monitoring mechanism
- Laboratory personnel trained to provide high quality services
- Improved training curricula and trainers sensitised to the need for curricula to sustain quality management improvements
- Creative continuing education mechanisms
- Efficient laboratory information management systems
- A regional laboratory network and referral centres
- Reliable laboratory testing.
- In the final analysis, these outcomes will support improved public well-being and tourism markets.

The PMU is cognisant of the several assumptions underpinning the project and the potential risks involved in implementation. These include an assumption that regional governments will introduce the agreed legislation and accreditation models developed by the project and will seek to provide a minimum package of services to meet the needs of the poor. A significant assumption is that the private laboratory sector will also seek to improve standards, seek accreditation-related services at a fee and reduce their services charges. Among the several risks or potential barriers to successfully achieving the Project's expected results are the fragility of economies in some CARIFORUM countries and the current practice of under-financing public sector laboratories. However, the PMU has developed several strategies to minimise these risks, including the encouragement of the wide involvement of key stakeholders through the above-described layered committee structure and advocacy initiative that will allow for intensive discussion, feedback and recommendations from both regional and international experts.

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# West Nile Virus Cases and Surveillance Activities in the Bahamas

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## INTRODUCTION

On July 20, 2003, the Bahamas Ministry of Health was informed by the US Centers for Disease Control and Prevention (CDC) that a suspected case of West Nile Virus (WNV) was being investigated. This case was a resident of one of the privately owned Cays in the Bahamas. The suspected case, an 84 year old foreign national who resides on Cornish Cay in Abaco, had presented to a private physician in Marsh Harbour, Abaco. He had been stung by jellyfish, and then developed a rash. He also complained of fever, fatigue, malaise, anorexia, and generalized weakness. When his mental status started to deteriorate, he was referred to a hospital in West Palm Beach, Florida. The initial laboratory test (IgM capture ELISA) suggested an infection with WNV. Subsequent neutralization tests provided stronger evidence of WNV infection. Prior to July 20, 2003, there had not been any cases of WNV reported in the Bahamas.

In 2002, due to the presence of WNV in South Florida, the Bahamas Ministry of Health issued a Press Release to alert the public to WNV and its prevention. Since WNV has been circulating in the USA for the past 4 years and confirmed in Florida, it was expected that cases would start occurring in the Bahamas. Given the implication for health and tourism, the Ministry of Health needed to develop a plan of action for WNV Surveillance in the Bahamas.

### CASE INVESTIGATION ACTIVITIES

On July 24, 2003, in response to the suspected WNV case in the Bahamas, a team was assembled by the Ministry of Health. A conference call was held with CAREC and the Pan American Health Organization (PAHO) Headquarters to discuss a plan of action for the investigation, and assistance from CAREC and PAHO was sought.

On August 1, 2003, a team comprising of CAREC consultants and Ministries of Health and Agriculture staff visited Cornish Cay, Abaco and its environs to conduct an epidemiological investigation. Serum samples were collected from humans and dogs resident on the Private Cay. Samples were also collected from horses, chickens and Eurasian doves in areas close to the reported suspected case. Other activities done at the Cay and environs included an inspection of the Cay for mosquito breeding sites and adult mosquito trappings, and a visit to a chicken farm and Abaco Citrus Orchard. The Community Clinic in Marsh Harbour and Hope Town were visited and a meeting was held with key staff members to discuss the suspected case and relevant surveillance activities for the area. The Private Clinic where the suspected case was initially treated was also visited and the private physician was interviewed about the case and other possible cases.

The findings of the investigation in Abaco suggested strongly that there had been recent primary or secondary infection with either WNV or St. Louis Encephalitis.

## FOLLOW-UP ACTIVITIES

Since the first suspected case of WNV, two other suspected cases were identified and investigated for WNV. One was a tourist who stayed in Abaco for couple of days and the second was a resident of one of the family islands. A case history and review of medical records for the second case showed that he contracted the disease outside of the Bahamas.

Although, there is strong evidence to suggest that at least two of the three suspected cases contracted their WNV infection outside of the Bahamas, results of the sero-survey conducted on animals showed that the virus is present in the Bahamas and more persons could become infected and diagnosed with WNV.

One of the follow-up activities conducted after the investigation was the completion of a retrospective review of records for viral encephalitis, Guillan Barrie syndrome and meningitis. This review could not be done at the time of the investigation due to difficulties with retrieving the paper records. However, between January-July 2003, only three cases had been investigated for viral encephalitis.

Surveillance for acute fever with neurological symptoms in humans is now occurring in the Bahamas. A continuing medical education session on WNV was conducted for physicians in Accident and Emergency departments as well as for some other physicians. A comprehensive WNV surveillance plan with human, veterinary and entomological components has been developed. The surveillance of sick, dying and dead birds is now occurring with a hotline established within the Ministry of Agriculture for the public to report sightings of dead birds.

Entomological surveillance is focused on vector control, public awareness of WNV prevention activities and capacity building among vector control staff. Veterinary surveillance is focused on early detection of WNV activities in sentinel birds by conducting regular sero-surveillance at local chicken farms and timely reporting of sick and dying birds by the public and bird watching organizations. The human surveillance component of the plan is aimed at early detection of WNV infections and raising awareness of WNV disease among physicians and the public. At this time a final draft of the plan is available.

## CONCLUSION

The suspected WNV case reported on July 20, 2003 has highlighted the need for effective WNV surveillance in the Bahamas and the rest of the Caribbean. Although, vector control activities were already occurring in the Bahamas, the development of an action plan resulted in better coordination of all related activities.

Among physicians in the Bahamas, there was increased awareness and understanding about WNV surveillance as it pertains to their evaluation of cases with sudden onset of fever and neurological symptoms. Press releases by the Ministry of Health on WNV helped to inform the public of their role in assisting in the detection and prevention of the disease. However, more public health education information needs to be disseminated. The Bahamas WNV surveillance plan of action, when fully implemented is aimed at strengthening surveillance of this disease and other vector borne diseases.

**Acknowledgement**

On behalf of the Ministry of Health, Bahamas, we sincerely thank Dr. Frederickson and Dr. Salas for coming to the Bahamas at short notice to participate in the investigation, and CAREC for guiding the process and providing technical and financial assistance.

# OUTBREAK CORNER

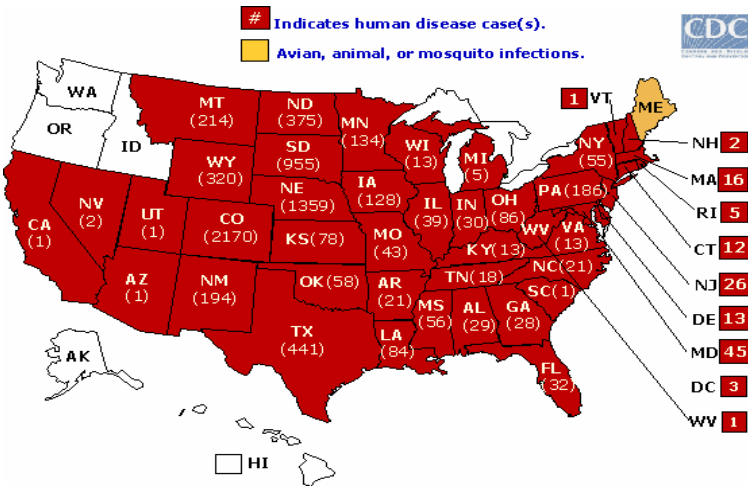
## WEST NILE VIRUS (WNV)

BAHAMAS: During the period under review, there were three suspected cases of WNV reported from the Bahamas, as described in the second article in this issue of CSR.

GUADELOUPE: In 2003, the Center for International Co-operation in Agronomic Research for Development (CIRAD) conducted a serological survey among selected horses and poultry farms in Guadeloupe. All the West Nile positive results from this survey were confirmed at the laboratory of arbovirus diseases in Lyon (CNR) in March 2003. 50% of the horses and 55% of the chicken samples were seropositive for West Nile virus. There have been no reports of human West Nile cases.

USA : As of October 20, 2003, a total of 7,328 human cases of WNV including 153 deaths have been reported from 45 states in the USA. Detailed information is available for 7211 cases as follows: 4753 cases (66%) were reported as West Nile Fever (milder disease), 2076 (29%) were reported as West Nile meningitis or encephalitis (severe disease) and 382 (5%) were clinically unspecified.

**West Nile Virus in the United States as of Oct. 20, 2003**




(Source: CDC website—www.cdc.gov)

CANADA: As of October 17, 2003 Health Canada reported from 8 provinces, 842 probable human West Nile cases (requiring additional testing before they could be confirmed), of which 398 were confirmed cases. Most (63%) of the confirmed cases were from Alberta province and 21% of the cases were from Ontario. There were 1,616 West Nile positive dead birds reported from 13 provinces, of which 52% were in Quebec and 15% were in Ontario.

(Source: Health Canada website - www.hc-sc-gc-ca)

## TYPHOID FEVER - ST. LUCIA

During the period July 30 to August 20, 2003 eight (8) laboratory confirmed cases of typhoid fever were reported to the Ministry of Health, St. Lucia. *Salmonella* typhi isolated from all the cases were sensitive to Ampicillin, Chloramphenical, Cephataxime, Diprofloxin, Gentamycin and Septrin.

An investigation was conducted and all the cases were found to be linked to a party on July 6, 2003, in Babonneau. On the day of the party there was an intermittent water supply. Of approximately 100 persons who attended the party, 60 were traced and investigated. Of the eight reported cases two had been cooks for the party and were symptomatic for typhoid fever. These two persons had also travelled out of St. Lucia after the event and one person was diagnosed in Martinique and the other in New York.

Several control measures were implemented during the outbreak, including:

- The dissemination of a letter from the Chief Medical Officer alerting all health workers of the signs and symptoms of the disease and other relevant information
- Community surveillance was implemented
- Surveillance in schools in Babonneau was initiated
- Food handlers in the area were tested for Salmonella
- Health care workers provided health education to the general community during investigation and interviews
- Food establishments in Babonneau were evaluated.

The last case was identified through community surveillance on September 8, 2003. This case had been diagnosed in early August and treated at home, but not properly monitored.

Since this last case was identified the following further control measures have been implemented:

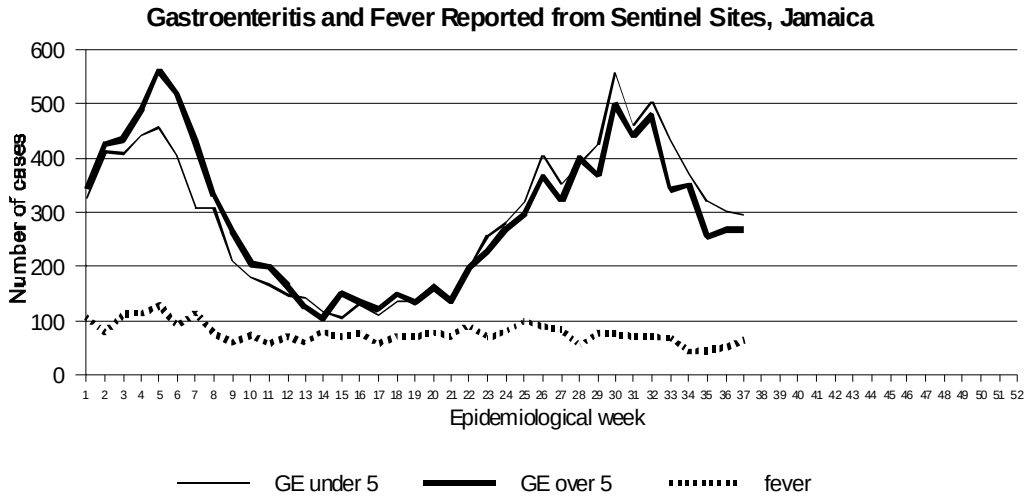
- Reinforcement and expansion of surveillance activities in the region.
- A detailed document on procedures for dealing with typhoid fever cases was distributed to relevant health staff
- Continuous health education in the community
- Screening at school and tracing and investigating contacts of a student who was one of the cases of typhoid fever
- A request that confirmed cases should be reported to the Epidemiology Division within 24 hours.

This outbreak has now been declared over. However, surveillance activities are continuing.

(Source of information: Summary Report of the National Epidemiologist of St. Lucia, Dr. Alina Jaime).

## GASTROENTERITIS – JAMAICA

Beginning the last week of May 2003, the national surveillance unit in the Ministry of Health, Jamaica, noted an increase in the number of acute gastroenteritis (AGE) cases in both the under and over 5 years old age groups (figure 1). On a weekly basis the surveillance unit receives reports on the number of gastroenteritis cases in both the under 5 and over 5 age groups from fifty five sentinel sites across the island. The increase in AGE was noted initially at hospital sites in the South East region however all four health regions across the island did report an increase in cases when compared with historical data. In addition to this, there was a rise in admissions to Bustamante Hospital for Children and Spanish Town Hospital, (two main hospitals in the South East region), as well as reports of 12 deaths due to AGE in children in June and July. A team comprising of the Ministry of Health, the Pan American Health Organization (PAHO) and US Centers for Disease Control and Prevention (CDC) representatives led an investigation to determine the aetiology of the outbreak, the risk factors contributing to the pattern of the illness and deaths, and to identify appropriate control measures.




Prior to the investigation stool samples submitted in June and July to three laboratories in Jamaica, had been tested using Latex agglutination. Rotavirus was identified in 21 (43%) of 43 stool samples. Of samples collected during the investigation, preliminary testing revealed that 47% of 72 stool samples were positive for rotavirus. Sixty six of these samples were collected from children <5 years old (33 positive for rotavirus). Strain characterization of 7 rotavirus samples identified 3 common serotypes. Results from bacterial testing are outstanding.

Investigation of AGE-associated deaths included interviews with the primary caregivers of these children. Eight of the 12 deaths were attributable to diarrhoea, and occurred in children between the ages of 4 months and 3 years. The mean age was 17 months. All children had been seen by a health care provider, the mean number of visits was 2. Children had been treated with oral rehydration salts (5), antidiarrhoeal (2), antiemetics (3) and antibiotics (3).

Knowledge, attitudes and practices surveys were conducted among health care providers and caregivers. Prevention and control measures have included media events relaying to the public messages on the appropriate prevention and management of diarrhoeal illness, updating and distributing the management protocol for AGE to health care providers island wide, preparation of educational material for caregivers and health care workers and training of primary health care providers.

(Source of information: Summary Report of the National Epidemiologist of Jamaica, Dr. Erica Reynolds-Hedmann).

## ACUTE HAEMORRHAGIC CONJUNCTIVITIS (RED-EYE) IN THE CARIBBEAN, 2003

A number of countries in the Caribbean have reported increased reports of acute haemorrhagic conjunctivitis (AHC) in the second and/or third quarters of 2003. Similar increases have also been reported from a number of countries in Central and South America, Asia and Northern Africa. The last outbreak of AHC in the Caribbean occurred in 1998 when some 20,150 cases were reported from 11 CAREC member countries, namely Antigua and Barbuda, Bahamas, British Virgin Islands, Dominica, Grenada, Montserrat, Jamaica, St. Kitts and Nevis, Suriname, Trinidad and Tobago and Turks and Caicos. The causative agent in this outbreak was identified as Coxsackievirus type A24.

While many countries are continuing to report AHC cases, this interim report compiled from CARISURVNET postings and direct reports to CAREC provides country specific information to date. A regional total was not compiled as some countries do not routinely report AHC, the totals given may relate only to the outbreak period. A preliminary review of the data indicates a regional outbreak larger, both in terms of number of cases and countries affected, than the outbreak of 1998. Below is a summary of country specific reports regarding AHC.

**Anguilla** indicated several cases of AHC in late October (week 43). The exact number of cases is unknown at this point in time.

**Antigua and Barbuda** reported 860 cases of AHC for 2003. The outbreak began during week 31 and reached a peak during week 40.

**Aruba** reported 61 cases of AHC. An increase in the number of AHC cases was noted in week 26 and peaked in week 29. Of the 61 cases, 1.6% were infants (0-11 months), 11.5% young children (1-4 years), 72.2% children and adults (5-65 years) and 14.7% above 65 years. The number of cases by week are as follows:

| Week | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 |
|---|---|---|---|---|---|---|---|---|
| Cases | 11 | 6 | 0 | 15 | 14 | 9 | 5 | 1 |

**Bahamas** reported having had an outbreak of AHC beginning in week 19 and rising to a peak in week 25. There were a total of 6123 cases of conjunctivitis from weeks 1-41. The number of cases from weeks 17-41 are as follows:

| Week | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases | 10 | 12 | 66 | 30 | 60 | 181 | 194 | 692 | 1419 | 644 | 831 | 836 | 319 | 167 | 136 | 92 |
| Week | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | | | | | | | |
| Cases | 67 | 60 | 53 | 21 | 30 | 25 | 9 | 19 | 9 | | | | | | | |

**Barbados** was in the midst of an outbreak of AHC when data was reported for week 42. The number of cases from weeks 31-42 are as follows:

| Week | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases | 5 | 11 | 19 | 9 | 19 | 11 | 23 | 30 | 80 | 122 | 219 | 283 |

**Belize** reported an outbreak of AHC from weeks 31-37 during which time a total of 1800 cases were reported.

**Bermuda** reported no cases as of October 17, 2003.

The **British Virgin Islands** reported a total of 294 AHC cases for the year (weeks 1-39). They observed an increase in the number of cases in week 30 and, following a decline, a second increase in week 37. The number of cases from week 29 to 39 are as follows:

| Week | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases | 7 | 36 | 12 | 5 | 17 | 6 | 12 | 5 | 35 | 36 | 32 |

The **Cayman Islands** reported 331 cases of AHC with an increase above what was expected beginning in week 27 and reaching a peak in week 36 (36 cases). Based on 279 cases (84% of total reports), 3.6% were infants (0-11 months), 24.0% young children (1-4 years), 69.9% children and adults (5-65 years) and 2.5% above 65 years.

At the end of August, **Curaçao and Bonaire** reported having outbreaks of AHC. Cultures taken were negative on bacteriology and Enterovirus was identified in one sample by virus isolation. The total number of cases was not reported.

**Dominica** reported 359 cases with an outbreak beginning during week 32 and coming to a peak during week 39 . The number of cases by month are as follows:

| Month | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Cases | 2 | 15 | 10 | 7 | 37 | 64 | 54 | 70 | 41 | 59 |

**French Guyana** reported an outbreak of AHC, starting early in week 23 and ending in week 29. The total number of cases is unknown. Enterovirus, coxsackie A24 variant, was identified in 10 samples.

**Grenada** reported 1125 cases for 2003 (682 cases in September alone). An increase in the number of cases occurred in August 2003 following carnival. The epidemic peaked in week 39. Of the 1,125 cases, 2.0% were infants (0-11 months), 10.4% young children (1-4 years), 84.9% children and adults (5-65 years) and 2.7% above 65 years. The number of cases by month are as follows:

| Month | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Cases | 12 | 9 | 6 | 16 | 11 | 8 | 5 | 87 | 682 | 289 |

**Guadeloupe** reported an outbreak of AHC, starting early in July. The outbreak peaked in August, but was still occurring in the middle of September, at which time 1000 cases had been reported.

**Guyana** reported cases of AHC during 2003, however, the number of cases and whether an outbreak exists is not known at this time.

In the middle of August, **Jamaica** reported an island wide outbreak of AHC. Jamaica reported 13,127 cases of AHC during weeks 1-43. Prior to week 29, the average number of cases per week was 39. The number of cases by week are as follows

| Week | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases | 94 | 284 | 569 | 1056 | 2038 | 1708 | 1295 | 1402 | 1241 | 636 | 557 | 730 | 152 | 160 | 117 |

**Martinique** reported an outbreak of AHC involving 1200 cases, starting in the second week of August (week 32). The outbreak peaked in the middle of August and was still continuing in the middle of September. It was thought to be a viral conjunctivitis, possibly Enterovirus.

**Montserrat** reported no cases of AHC as of November 6, 2003.

**St. Kitts and Nevis** reported a total of 157 cases from week 1 to 42 of 2003. The increase in the number of cases was noted in week 39 and peaked in week 41. The following are the number of cases by week for weeks 37-42:

| Week | 37 | 38 | 39 | 40 | 41 | 42 |
|---|---|---|---|---|---|---|
| Cases | 2 | 8 | 14 | 41 | 56 | 31 |

**St. Lucia** reported 2085 cases of AHC in 2003. An increase above what was expected was reported in week 30 and the outbreak peaked in week 38. Of 2062 cases, 3.0% were infants (0-11 months), 14.3% young children (1-4 years), 82.5% children and adults (5-65 years) and <1% above 65 years. The number of cases by week are as follows:

| Week | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cases | 5 | 8 | 26 | 18 | 19 | 55 | 92 | 244 | 642 | 625 | 307 |

**St. Vincent and the Grenadines** reported an increase in the number of AHC cases above what was expected beginning in week 37. From weeks 1-44, there were a total of 3453. The number of cases reported from weeks 35-44 are as follows:

| Week | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 |
|---|---|---|---|---|---|---|---|---|---|---|
| Cases | 10 | 13 | 42 | 227 | 647 | 809 | 638 | 419 | 84 | 34 |

**Suriname** reported having an outbreak of AHC starting the second week of June in Paramaribo. The outbreak spread to the other coastal districts and in the second week of September it was in the district of Nickerie on the border with Guyana. It was thought to be a viral conjunctivitis, possibly Enterovirus.

**Trinidad and Tobago** noted an increase in the expected number of AHC cases beginning in week 38. Trinidad and Tobago reported 2,264 cases of AHC during weeks 1-40. The number of cases reported from week 36 to 40 are as follows:

| Week | 36 | 37 | 38 | 39 | 40 |
|---|---|---|---|---|---|
| Cases | 27 | 32 | 144 | 309 | 542 |

**Turks and Caicos** had periodic cases of AHC throughout the year. There was a significant increase in the number of cases reported from 5 sentinel sites (71% of reporting sites) during week 23 with the number of cases reaching a peak in week 26. The number of cases from June to August were 335, 291 and 167 respectively.

- - - - - - - - - - - - - - - - - - - - - - - - - -

To date, CAREC received 37 eye swabs from AHC cases in four member countries, St. Lucia, St. Vincent and the Grenadines, Suriname and Belize. Enterovirus was isolated from 17 of the 37 samples. The enterovirus was not found to be any of the viruses in the groups Echovirus types 1-34 or Coxsackie B 1-6. CAREC is trying to locate antisera for Coxsackie A 1- 24 and Enterovirus 70 and primers for the final identification of isolated enterovirus.

Conjunctivitis can be a transient clinical manifestation of several viral infections. However, some enteroviruses such as coxsackievirus type B2 and echoviruses types 7 and 11 have been associated with sporadic outbreaks of acute conjunctivitis. Widespread epidemics of mild conjunctivitis to AHC have been associated with Coxsackie A24. A pandemic of AHC caused by enterovirus type 70 took place from 1969 to 1971 and this enterovirus has reappeared after several years causing widespread disease in Asia, Africa and the American regions.

The symptoms of AHC are redness, swelling and pain, often in both eyes for 1-2 weeks. Red-eye is highly contagious and is mainly spread through contact with the discharge from the infected eye(s).

There is no treatment or vaccine for the disease, however, painkillers and management for secondary bacterial infection may be needed. Many countries have engaged in public awareness campaigns to assist in the control of the outbreak. Key disease control strategies include:

- Washing hands frequently
- Avoid sharing washrags, pillows, towels, eye-make up etc.
- Restrict contact with cases. It is recommended that persons with AHC should remain at home until it resolves (1-2 weeks)
- Reduce overcrowding wherever possible.

CAREC thanks countries for completing and submitting AHC outbreak reports.

## SEVERE ACUTE RESPIRATORY SYNDROME (SARS) OUTBREAK
## A GLOBAL UPDATE

As of September 26, 2003, WHO received reports of 8,098 probable SARS cases including 774 deaths from 26 countries. There were no SARS cases reported from the Caribbean. No countries are currently having local transmission of SARS.

**Please note that SARS remains a reportable disease and countries are required to immediately report all SARS cases to CAREC.**

A laboratory confirmed SARS case was reported from Singapore on September 8, 2003. A full investigation conducted by experts from Singapore, WHO Western Pacific Regional Office and the US Centers for Disease Control and Prevention revealed that the patient, a 27 year old researcher, most likely acquired the infection in a laboratory as a result of accidental cross-contamination of West Nile virus samples with the SARS virus in the laboratory. The investigation found no evidence of further transmission and no reason to regard this single isolated case as an international public health concern.

On October 17, 2003, WHO issued a 35-page report summarizing international research on the epidemiology of the SARS outbreak. The summary of this report is available at: http://www.who.int/csr/sars/archive/epiconsensus/en/ and the full document is available at: http://www.who.int/csr/sars/en/WHOconsensus.pdf

The report, which represents the views of experts in public health, epidemiology, and clinical virology, draws on experiences from all the main outbreak sites as well as a large number of recently published studies and unpublished documents. Some main conclusions from the report are as follows:

The report found no evidence that SARS is an airborne disease

At all outbreak sites, the main route of transmission was direct contact, via the eyes, nose, and mouth, with infectious respiratory droplets. The finding that each patient infected on average 3 others is consistent with a disease spread by direct contact with virus-laden droplets rather than with airborne particles. For diseases where the causative agent is airborne, such as influenza and measles, a single person can infect an entire room by coughing. There is no evidence that this occurred with SARS. For this reason, simple infection control techniques, such as frequent hand washing, can go a long way toward slowing the spread of disease.

Health care workers were at special risk

Health care workers, especially those involved in procedures generating aerosols, accounted for 21% of all cases, ranging from 3% of reported probable cases in the USA to 43% in Canada. In some cases, transmission to health care workers occurred despite the fact that staff were wearing masks, eye protection, gowns and gloves. In a few other cases, transmission occurred following brief exposure to patients with mild symptoms.

The risk of transmission is greatest at around day 10 of illness

Maximum virus excretion from the respiratory tract occurs on about day 10 of illness and then declines. The efficiency of transmission appears to be greatest following exposure to severely ill patients or those experiencing rapid clinical deterioration, usually during the second week of illness. When symptomatic cases were isolated within 5 days following onset of illness, few cases of secondary transmission occurred. However, there are some exceptions in which transmission occurred following exposure to a patient in the earliest days of infection.

The report found no evidence that patients transmit infection 10 days after fever has resolved

This finding supports present WHO recommendations for the management of contacts and for hospital discharge policies.

Children are rarely affected by SARS

To date, there have been two reported cases of transmission from children to adults and no reports of transmission from children to other children. Three separate epidemiological investigations have found no evidence of SARS transmission in schools. Furthermore, no evidence of SARS has been found in infants of mothers who were infected during pregnancy. Further investigation is required to determine whether children may have asymptomatic or mild infections.

The implications of the Metropole Hotel outbreak are not yet fully understood

Intensive investigations of circumstances surrounding the late-February outbreak in the Metropole Hotel, Hong Kong, which seeded the international spread of SARS, have not yet answered all questions. During this incident, the virus was transmitted to at least 16 guests and visitors, all linked to the 9th floor of the hotel. The results of environmental sampling on the carpet outside room 911, where the index case resided, and elevator areas show a hot zone (possibly vomitus or respiratory secretions). Samples were PCR positive for the virus 3 months after the index case spent a single night at the hotel. Although tests demonstrated the presence of SARS coronavirus RNA and not viable virus, this finding may have implications for the persistence of the virus in the environment.

The Metropole Hotel outbreak is recognized as a "superspreading event". However, the index case did not have an unusually high viral load when tested on days 9 and 11 of illness.

Risk of in-flight transmission

Five international flights have been associated with the transmission of SARS from symptomatic probable cases to passengers or crew. Further information on these flights is detailed in the report. The report found no evidence of confirmed transmission on flights after the 27 March travel advisory in which WHO recommended exit screening and other measures to reduce opportunities for further international spread associated with air travel.

On October 22, 2003, an informal SARS Laboratory Workshop was held at WHO, Geneva, to discuss aspects of the laboratory diagnosis of SARS coronavirus (CoV) infection. The summary of the discussion and recommendations of this workshop can be found on the WHO website: http://www.who.int/csr/sars/guidelines/en/SARSLabmeeting.pdf.

(Source: WHO website: www.who.int/csr/sars/).

# Report on Communicable Diseases

## DENGUE FEVER

During epidemiological weeks 27-39, 2003, 1,000 cases of dengue fever and 44 cases of dengue haemorrhagic fever were reported to CAREC, compared to 4,076 cases of dengue fever and 155 cases of dengue haemorrhagic fever reported during the corresponding period last year. While all countries with reported dengue cases had reduced numbers of dengue cases during this reporting period compared to the same period last year, the four-fold decrease in reported cases overall was mostly due to reduced numbers of cases reported from Trinidad and Tobago, where a dengue outbreak occurred in 2002.

As of November 6, 2003, dengue virus types 1, 2 and 3 have been reported from some member countries. Dengue virus type 3 was reported from Anguilla, Barbados, St. Vincent and the Grenadines and Trinidad and Tobago. Dengue virus type 1 was also reported from Barbados and dengue virus type 2 was reported from Suriname.

## TYPHOID FEVER

During the period under review, St. Lucia reported seven cases of typhoid fever, which were related to an outbreak as described in the Outbreak Corner of this issue of the CSR.

During the period under review, Dominica reported two cases of typhoid fever. These cases were from the same area, Grandbay Health District and were both aged less than 11 years. *Salmonella* typhi was isolated from a blood specimen from the index case and a stool sample from the second case. An investigation of all possible contacts was conducted by the health team during which interviews were done and stool samples were taken. A total of 26 samples were cultured for *Salmonella* typhi and they were all negative. Environmental sampling (water sources) was also done and all samples were negative for *Salmonella*. Since the identification of these two cases, training sessions were conducted with the health team and surveillance for typhoid fever was enhanced, however no new cases have been identified. Extensive health education was conducted, which focussed on personal hygiene and food handling practices in the relevant village. A project to address sanitation problems in the village is being drafted by the Environmental Health Department in collaboration with community officials.

## GASTRO-ENTERITIS (< 5 YEARS OLD)

During the period under review there was an increase in the number of reported cases of gastro-enteritis among the under 5 year olds (6,342 cases) compared to the corresponding period last year (4,139 cases). This increase was mostly due a rotavirus outbreak in Jamaica as described in the Outbreak Corner of this issue of the CSR. Belize, Grenada, Montserrat and St. Vincent and the Grenadines all also reported at least a two-fold increase in cases during weeks 27-39, 2003 compared to the corresponding period last year. However it is not known whether these increases were due to outbreaks.

## INFLUENZA

There was nearly a four-fold decrease in the reported number of cases of influenza during the period under review (4,847 cases) compared to the corresponding period last year (15,783 cases). However, this was mostly due to Trinidad and Tobago having only submitted reports for the first week of the reporting period. Three countries, Grenada, Jamaica and St. Lucia, reported increased numbers of influenza during the period under review compared to the corresponding period last year.

Influenza activity was detected in Suriname during June and July 2003 and an influenza virus strain was isolated and typed similar to strain A/Panama/2007/99 (H3N2), which was probably associated with the influenza season in the southern hemisphere. However, since the last week of October, CAREC has also been receiving laboratory requests from patients clinically presenting Acute Respiratory Syndrome, which may be an indication of influenza virus activity in the Caribbean. It is important to enhance surveillance and diagnosis mechanisms in order to identify the causative agent of Acute Respiratory Syndromes in the Caribbean as early as possible.

## TABLE 1: DISEASES OF INTEREST IN THE CARIBBEAN

| COUNTRY | LAST REPORTING WEEK IN 2003 | MENINGOCCOCAL INFECTION | | | LEPROSY | | | DENGUE FEVER | | | DENGUE HAEMORRHAGIC FEVER/SHOCK SYNDROME | | | SALMONELLOSIS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Weeks 27 - 39 2003 | Weeks 27 - 39 2002 | Weeks 1 - 39 2003 | Weeks 27 - 39 2003 | Weeks 27 - 39 2002 | Weeks 1 - 39 2003 | Weeks 27 - 39 2003 | Weeks 27 - 39 2002 | Weeks 1 - 39 2003 | Weeks 27 - 39 2003 | Weeks 27 - 39 2002 | Weeks 1 - 39 2003 | Weeks 27 - 39 2003 | Weeks 27 - 39 2002 | Weeks 1 - 39 2003 |
| ANGUILLA | 38 | - | - | - | 0 | 0 | 0 | 0 | 0 | 2 | - | - | - | 0 | 0 | 0 |
| ANTIGUA & BARBUDA | 28 | - | - | - | - | - | - | 0 | 0 | 0 | - | - | - | 0 | 12 | 9 |
| BAHAMAS | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | 3 | 3 | 11 |
| BARBADOS | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 96 | 198 | - | - | - | 1 | 27 | 27 |
| BELIZE | 34 | 0 | 0 | 0 | - | - | - | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| BERMUDA | 39 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 26 | 59 |
| BR. VIRGIN ISLANDS | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CAYMAN ISLANDS | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 6 | 13 |
| DOMINICA | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - |
| GRENADA | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | - | - | - |
| GUYANA | 21 | - | 0 | 0 | - | 1 | 0 | - | 17 | 30 | - | 0 | 0 | - | 29 | 0 |
| JAMAICA | 39 | 1 | 0 | 1 | 0 | 0 | 2 | 6 | 27 | 36 | - | - | - | 0 | 0 | 0 |
| MONTSERRAT | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| SAINT LUCIA | 39 | - | - | - | 0 | 3 | 3 | 0 | 3 | 4 | 0 | 0 | 0 | 6 | 1 | 11 |
| ST. KITTS/NEVIS | 35 | - | - | - | - | - | - | 0 | 0 | 2 | - | - | - | 0 | 1 | 0 |
| ST. VINCENT & GRENADINES | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 20 | 4 | 0 | 0 | 0 | 1 | 0 | 2 |
| SURINAME | 34 | 0 | 0 | 0 | - | - | - | 31 | 213 | 215 | 0 | 3 | 1 | 17 | 13 | 54 |
| TRINIDAD & TOBAGO[a] | 27 | 0 | 2 | 0 | 0 | 12 | 14 | 946 | 3654 | 1559 | 44 | 152 | 74 | 0 | 10 | 33 |
| TURKS & CAICOS IS. | 35 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | - | - | - | 0 | - | 3 |
| TOTAL | | 3 | 3 | 3 | 0 | 17 | 20 | 1000 | 4076 | 2052 | 44 | 155 | 75 | 66 | 128 | 223 |

Source: Weekly Communicable Disease Reports submitted to the CAREC Epidemiology Division as of October 10th, 2003.

Notes

- = No reports received

[a] = The Weekly Dengue Report issued by the National Surveillance Unit of the Ministry of Health.

TABLE 1: DISEASES OF INTEREST IN THE CARIBBEAN (cont'd)

| COUNTRY | LAST REPORTING WEEK IN 2003 | SHIGELLOSIS | | | TYPHOID | | | TB ALL FORMS | | | GASTRO-ENTERITIS [<5yrs. old] | | | VIRAL HEPATITIS A | | | VIRAL HEPATITIS B | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Weeks 27 - 39 2003 | Weeks 27 - 39 2002 | Weeks 1 - 39 2003 | Weeks 27 - 39 2003 | Weeks 27 - 39 2002 | Weeks 1 - 39 2003 | Weeks 27 - 39 2003 | Weeks 27 - 39 2002 | Weeks 1 - 39 2003 | Weeks 27 - 39 2003 | Weeks 27 - 39 2002 | Weeks 1 - 39 2003 | Weeks 27 - 39 2003 | Weeks 27 - 39 2002 | Weeks 1 - 39 2003 | Weeks 27 - 39 2003 | Weeks 27 - 39 2002 | Weeks 1 - 39 2003 |
| ANGUILLA | 38 | - | - | - | 0 | 0 | 0 | - | - | - | 7 | 0 | 60 | - | - | - | 0 | 0 | 0 |
| ANTIGUA & BARBUDA | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 81 | 504 | - | - | - | 0 | 4 | 0 |
| BAHAMAS | 37 | 5 | 2 | 10 | 0 | 0 | 0 | 0 | 3 | 0 | 83 | 197 | 607 | 0 | 1 | 1 | 0 | 1 | 1 |
| BARBADOS | 29 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 9 | 7 | - | - | - | - | - | - |
| BELIZE | 34 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 36 | 19 | 51 | 4 | 176 | 4 | 0 | 8 | 1 | 0 | 4 |
| BERMUDA | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 (i) | 31 | 33 | 120 | 0 | 0 | 1 | 2 | 1 | 4 |
| BR. VIRGIN ISLANDS | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 36 | 47 | 317 | 0 | 0 | 0 | 0 | 0 | 0 |
| CAYMAN ISLANDS | 39 | 6 | 4 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 66 | 66 | 387 | 1 | 0 | 2 | 0 | 0 | 0 |
| DOMINICA | 39 | 0 | 1 | 1 | 2 | 0 | 2 | 2 | 1 | 2 | 6 | 45 | 89 | - | - | - | 0 | 0 | 0 |
| GRENADA | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 166 | 80 | 569 | 0 | 0 | 0 | 0 | 0 | 3 |
| GUYANA | 21 | - | 7 | 0 | - | 13 | 200 | - | 55 | 116 | - | 438 | 2933 | - | 0 | 1 | - | 8 | 8 |
| JAMAICA | 39 | 0 | 1 | 1 | 0 | 0 | 0 | 5 | 14 | 46 | 5028 | 1983 | 11426 | 0 | 0 | 0 | 8 | 10 | 21 |
| MONTSERRAT | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 5 | 1 | 27 | 0 | 0 | 0 | 2 | 0 | 9 |
| SAINT LUCIA | 39 | 2 | 0 | 4 | 7 | 0 | 7 | 0 | 0 | 3 | 95 | 87 | 686 | 0 | 0 | 0 | 0 | 2 | 0 |
| ST. KITTS/NEVIS | 35 | 0 | 0 | 0 | - | - | - | 0 | 0 | 1 | 2 | 15 | 71 | - | - | - | - | - | - |
| ST. VINCENT & GRENADINES | 37 | 1 | 1 | 1 | 0 | 0 | 0 | 4 | 2 | 11 | 386 | 121 | 1227 | - | - | - | 7 | 16 | 30 |
| SURINAME | 34 | 30 | 26 | 86 | 0 | 0 | 0 | 26 | 24 | 50 | 342 | 915 | 591 | 2 | 1 | 10 | 10 | 32 | 77 |
| TRINIDAD & TOBAGO | 27 | 0 | 5 | 6 | 0 | 0 | 0 | 0 | 47 | 25 | - | - | - | 0 | 0 | 0 | 0 | 5 | 11 |
| TURKS & CAICOS IS. | 35 | 0 | - | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 4 | 17 | 123 | 0 | - | 1 | 1 | 1 | 2 |
| TOTAL | | 44 | 50 | 124 | 9 | 13 | 211 | 38 | 183 | 282 | 6342 | 4139 | 19920 | 7 | 2 | 24 | 31 | 80 | 170 |

Source: Weekly Communicable Disease Reports submitted to the CAREC Epidemiology Division as of October 10th, 2003.

Notes

- = No reports received

(i) - Imported

## Table 2: DISEASES UNDER INTERNATIONAL SURVEILLANCE

| COUNTRY | LAST REPORTING WEEK IN 2003 | AIDS | | | MALARIA INDIGENOUS | | | INFLUENZA | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Weeks 27 - 39 2003 | Weeks 27 - 39 2002 | Weeks 1 - 39 2003 | Weeks 27 - 39 2003 | Weeks 27 - 39 2002 | Weeks 1 - 39 2003 | Weeks 27 - 39 2003 | Weeks 27 - 39 2002 | Weeks 1 - 39 2003 |
| ANGUILLA | 38 | - | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| ANTIGUA & BARBUDA | 28 | - | - | - | 0 | 0 | 0 | 1 | 4 | 197 |
| BAHAMAS | 37 | - | 64 | - | 0 | 0 | 0 | 18 | 43 | 312 |
| BARBADOS | 29 | - | - | - | 0 | 0 | 0 | - | - | - |
| BELIZE | 34 | - | 36 | - | 0 | 269 | 0 | 37 | 132 | 66 |
| BERMUDA | 39 | - | 4 | - | 0 | 0 | 0 | 7 | 16 | 413 |
| BR. VIRGIN ISLANDS | 35 | - | 2 | 0 | 0 | 0 | 0 | 72 | 135 | 377 |
| CAYMAN ISLANDS | 39 | - | 0 | - | 0 | 0 | 0 | 48 | 64 | 317 |
| DOMINICA | 39 | - | 3 | - | 0 | 0 | 0 | 0 | 90 | 310 |
| GRENADA | 39 | - | - | - | 0 | 0 | 0 | 77 | 64 | 211 |
| GUYANA | 21 | - | - | - | - | 624 | 4249 | - | 561 | 886 |
| JAMAICA | 39 | - | 97 | - | 0 | 0 | 0 | 63 | 6 | 120 |
| MONTSERRAT | 39 | - | 0 | 0 | 0 | 0 | 0 | 35 | 40 | 110 |
| SAINT LUCIA | 39 | - | 2 | 6 | 0 | 0 | 0 | 64 | 37 | 270 |
| ST. KITTS/NEVIS | 35 | - | 1 | 11 | 0 | 0 | 0 | 0 | 1 | 17 |
| ST. VINCENT & GRENADINES | 37 | - | 15 | 19 | 0 | 0 | 0 | 618 | 1535 | 2632 |
| SURINAME | 34 | - | - | - | 5644 | 6918 | 13668 | 3012 | 4580 | 9544 |
| TRINIDAD & TOBAGO | 27 | - | - | - | 0 | 2 | 3 | 782 | 8411 | 22654 |
| TURKS & CAICOS IS. | 35 | - | - | - | 0 | 1 | 1 | 13 | 64 | 556 |
| TOTAL | | 0 | 224 | 37 | 5644 | 7814 | 17921 | 4847 | 15783 | 38992 |

Source: Weekly Communicable Disease Reports submitted to the CAREC Epidemiology Division as of October 10th, 2003.

Notes

During the period under review in 2003 and the corresponding period in 2002, there were zero cases of Plague, Cholera and Yellow Fever reported to CAREC

- = No reports received

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