was isolated during this period. One case of seroconversion to influenza A in January and another to influenza B in September, were seen in patients from Barbados.

Most influenza A (H3N2) strains isolated in Rio de Janeiro, São Paulo, and Bogotá in 1982 were similar to A/Oregon/4/80 virus, but strains related to A/Arizona/2/80 and A/Texas/1/77 were also found in São Paulo. One sporadic H3N2 virus recovered in Rio de Janeiro in September was found to be similar to A/Bangkok/2/79. One H1N1 strain similar to A/England/333/80 was isolated in Rio de Janeiro and another (A/India/6263/80-like) was recovered in Belém. A single H1N1 virus identified as A/England/333/80-like was recovered in Peru in October 1981. Several B viruses related to B/Illinois/1/79 or to B/Singapore/222/79 were obtained in Rio de Janeiro and São Paulo during the first half of 1982. Influenza A(H1N1) viruses recovered in Ecuador in 1981-1982 appeared very similar to A/Brazil/11/78 or else exhibited drift away from A/Brazil/11/78. Several of these isolates (e.g., A/Ecuador/8128/82), were determined to be a low-avid A/England/333/80-like strain. A 1981 H3N2 Ecuadorian isolate proved to be intermediate between A/Texas/77 and A/Bangkok/1/79.

The only influenza activity detected in Chile up to November was one seroconversion to A(H1N1) virus, observed late in September. No activity was reported from Argentina.

In Jamaica influenza A (H1N1) virus circulation among young persons was confirmed at the end of 1982 by serologic diagnosis and virus isolation. The strains were related to A/England/333/80.

Note:
The above findings illustrate the role played by the network of National Influenza Centers in disease surveillance in the Americas. The function of this network is to monitor outbreaks, report them directly to WHO, and isolate and identify influenza strains for which antigenic relationships to other known strains are subsequently investigated in more detail at the WHO Collaborating Centers for Reference and Research on Influenza. This approach allows the detection of new variants like the A/Brazil/11/78 (H1N1) isolate from Belém, Brazil, recovered in 1978. This strain was incorporated in the influenza vaccines formulated since 1979-1980. Moreover, the network periodically surveys the status of immunity to influenza in populations of different age groups and assesses the serologic response to vaccination.

(Source: Epidemiology Unit, Health Programs Development, PAHO.)

The Caribbean Epidemiology Center (CAREC)

During 1971 and 1972, Trinidad experienced major poliomyelitis and typhoid fever epidemics at the same time that cholera continued its spread westward reaching Portugal. Because of these developments, English-speaking countries and territories of the Caribbean were especially conscious of communicable diseases—not only the direct threat posed to their inhabitants but also the potential threat to tourism, their major industry. It became evident, however, that little accurate information existed on communicable disease patterns in the Caribbean.

The consequent need for good epidemiological surveillance and back-up laboratories was first stated by Dr. Eric Williams, Prime Minister of Trinidad and Tobago; his call for action was endorsed by the V Caribbean Health Ministers Conference (Dominica 1973). In this same vein, Dr. Williams had approached PAHO in 1972 to see if the Organization would be interested in establishing a disease surveillance center based in Trinidad that would incorporate the activities of the existing Trinidad Regional Virus Laboratory. This laboratory, situated near the center of Port-of-Spain, was used by the Rockefeller Foundation for arbovirus studies from 1952 to 1968, during which time it was affiliated with the Department of Microbiology of the University of the West Indies. In 1968 the Rockefeller Foundation withdrew its funding, but the University kept the laboratory in operation with contributions from the Governments of Barbados, Guyana, Jamaica, Trinidad and Tobago, United Kingdom, and
Special Program on Research and Training in Tropical Diseases (TDR)

This program was planned and initiated by the World Health Organization with the assistance and joint sponsorship of the United Nations Development Program (UNDP) and the World Bank to stimulate and coordinate research for the acquisition and application of new methods for the control of tropical diseases and for refining those already available.

The Program concentrates on research into and the development of better means of controlling tropical diseases, and on the personnel training and institutional strengthening needed to augment research capabilities in tropical countries. These goals take into consideration the repercussions of a disease as a public health problem, the unavailability of satisfactory methods for combating it in the typical conditions of tropical countries, and the existence of avenues of research for improving the methods for its control. The Program has been targeted at research on malaria, schistosomiasis, filariasis, African and American trypanosomiasis, leishmaniasis, and leprosy.

The Special Program also has epidemiology, operations, vector control, and socioeconomic and biomedical research components. Each activity is carried out by multidisciplinary groups of specialists organized in different scientific working groups, each of which is responsible for the guidance of research in specific areas.

The program can provide financial assistance to researchers who undertake to study different aspects of the diseases mentioned, provided the topic has priority and the project scientific merit. The scientific working groups, made up of members of the world scientific community with experience in this field, have approved the Program’s financing.

The search for new control methods relates to the training of personnel and the strengthening of the institutions performing research in countries where tropical diseases are endemic. The institutional strengthening activities revolve around the creation of a network of collaborating centers in the tropical countries. These centers will coordinate the upgrading of the research potential of the countries concerned, and will house the researcher training activities.

In the area of training, the purpose of the Program is to train both researchers and auxiliary personnel for laboratory work, ambulatory care, and field activities, in keeping with the decisions and needs of the countries concerned. Financing is provided for institutions that direct their research efforts toward finding means of controlling any of the six diseases.

Between 1975 and January 1982 the Program provided financial support totalling US$22,932,231 for 474 projects in the Region of the Americas.

For more information about this Program, contact: Director TDR, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland, or: Coordinator, Special Program on Tropical Diseases (TDR), Pan American Health Organization, 525 Twenty-third Street, N.W., Washington, D.C. 20037, USA.

(Source: WHO Special Program on Research and Training in Tropical Diseases (TDR), Health Programs Development, PAHO.)

Influenza in Latin America and the Caribbean, 1981-1982

In general, the 1981-1982 influenza season in Latin America and the Caribbean was moderate. The Trinidad outbreak due to H3N2 viruses observed in the second half of 1981 was associated with strains related to A/Texas/1/77 and with the A/Shangai/31/80-like variant of A/Bangkok/1/79, but one strain was similar to A/Oregon/4/80. Ten additional H3N2 viruses were isolated in Trinidad during January/February 1982. Influenza B activity began to be detected in April and lasted until November; a total of 20 influenza B viruses...
serial grants from the Medical Research Council (United Kingdom) and the National Institutes of Health (United States).

In response to Dr. Williams' request, PAHO sent a team of scientists to examine surveillance requirements in the area. This team presented a report in 1973 confirming the need for a disease surveillance center. Subsequently, a pan-Caribbean conference (Jamaica, 1974) endorsed plans for performing disease surveillance work based at the Trinidad Regional Virus Laboratory. As a result, PAHO and the Government of Trinidad and Tobago signed a bilateral agreement which granted the lands and facilities of the Trinidad Regional Virus Laboratory to PAHO for 10 years; in October 1974 PAHO signed an additional multilateral agreement with the governments of the Commonwealth Caribbean. Together, these agreements provided the structure of what was to become the Caribbean Epidemiology Center (CAREC), established for a 10-year period beginning 1 January 1975.

CAREC currently has 19 members: Anguilla, Antigua and Barbuda, Bahamas, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Dominica, Grenada, Guyana, Jamaica, Montserrat, St. Kitts/Nevis, Saint Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, and the Turks and Caicos Islands (Figure 1).

The basic objectives of CAREC set down clearly in the multilateral agreement, may be summarized as follows:

- Establish and consolidate disease surveillance in the Caribbean area, first for communicable diseases and later for noncommunicable diseases.
- Provide diagnostic laboratory facilities for virology and supportive and referral laboratory facilities for bacteriology and parasitology.
- Provide laboratory and epidemiological surveillance training for Caribbean area personnel.
- Conduct research relevant to the core programs of communicable disease surveillance and laboratory work.

The CAREC service and research program is reviewed in depth annually by a Scientific Advisory Committee (SAC) and the CAREC Council. SAC is composed of five scientists nominated by the Director of the PASB, three medical faculty members and one agricultural faculty member from the University of the West Indies, and three representatives nominated by the Conference of Ministers Responsible for Health in the Caribbean. The committee advises the CAREC Council which in turn advises PASB's Director, and through him the Caribbean Health Ministers, about the Center's program and budget needs. The Council consists of three
representatives nominated by the Conference of Ministers Responsible for Health in the Caribbean: one representative each from the University of the West Indies, the Caribbean Community (CARICOM), the Commonwealth Caribbean Medical Research Council, the Overseas Development Ministry of the United Kingdom, PAHO, and the chairman of the Scientific Advisory Committee.

A grant to support surveillance activities and train health workers to carry them out was initially awarded by the U.S. Centers for Disease Control (CDC) and after three years continued by the U.S. Agency for International Development (USAID). The principal part of the USAID-funded program consists of training activities conducted by the CAREC staff.

By coincidence, the Trinidad Public Health Laboratory was situated in the same building as CAREC, facilitating the arrangement whereby the Director of that laboratory also became the Assistant Director of CAREC. Very strong and essential ties were thus created between the Trinidad Public Health Laboratory and CAREC—ties which have continued to develop. The close relationship established between CAREC and the governments of the Commonwealth Caribbean (through their health ministries and the Caribbean Health Ministers Conference) is particularly important to the structure of CAREC, as defined by the aforementioned multilateral agreement.

A novel feature of the original recommendation was that each country should appoint one physician to work closely with the Center as the designated epidemiologist. Although the link provided by these designees has proved invaluable, it also became clear early on that travelling and the multiple duties of these persons (particularly in the smaller countries), did not allow them enough time for epidemiology. As a result, the Center has responded to a request by the health ministers to develop a cadre of deputy-designated epidemiologists who are public health inspectors and public health nurses. The Center has also sought commitments from the larger countries to organize surveillance units; full-time medical officers have been assigned to such surveillance units in Barbados, Guyana, Jamaica, Suriname, and Trinidad and Tobago.

A major problem in controlling communicable diseases in the Caribbean has been the difficulty small island governments face in attracting and retaining highly trained pathologists, microbiologists, and senior laboratory staff. Special care is taken to design CAREC’s training program in such a way as to encourage its graduating technicians to remain in the Caribbean and not contribute to the already severe brain drain.

The Center also publishes the CAREC Surveillance Report monthly which is distributed to 2,500 health workers throughout the Region. The report presents information on communicable disease activity in the Caribbean and includes epidemiological analyses by CAREC personnel.

(Source: Epidemiology Unit, Health Programs Development, PAHO.)

Reports on Meetings and Seminars

Workshop on Epidemiology and Control of *P. falciparum* Malaria in the Americas

The workshop was held in Albuquerque, New Mexico from 26-29 October 1982, under the auspices of the University of New Mexico with the financial support of the Special Program for Research and Training in Tropical Diseases (WHO/UNDP/World Bank), the U.S. Agency for International Development (USAID), and the technical cooperation of PAHO/WHO.

The meeting consisted of three major segments:

- a review by a representative of each of 12 American countries of the current situation relative to *Plasmodium falciparum* malaria, especially drug-resistant *P. falciparum*;
  - a review of the current situation as it relates to therapy and prophylaxis of drug-resistant *P. falciparum* malaria, and to the current technology for detecting and monitoring drug resistance; and
  - a discussion of the management of *P. falciparum* malaria in three types of situations: (1) where resistance has not yet emerged; (2) where isolated foci of resistance occur; and (3) where there is already widespread resistance.

Three working groups developed general recommendations for management of the resistance problem which included: standardization and optimization of