

populations (i.e., proportions based on available data for the countries reporting) to the total urban and rural population figures published by the United Nations.

On the basis of these estimates, Figure 19 shows progress achieved between 1970 and 1975 in terms of the goals set for 1980 in the Ten-Year Health Plan for the Americas. According to these data, water supply services in rural Latin America have been making substantial progress. The estimated number of rural dwellers served through house connections or easy access more than doubled over the five-year period, increasing from 21.2 million in 1970 to 45.4 million in 1975. If this trend continues, it seems likely that the goal of providing potable water to at least 50 per cent of the rural population (an estimated 67 million people) by 1980 will be reached. It should be remembered, however, that the sharp increase between 1970 and 1975 may be partly due to apparent changes in the definition of rural population with water services in some countries—particularly in Brazil, where the reported number of rural dwellers served by water systems rose from 2 million (4 per cent) in 1970 to almost 20 million (53 per cent) in 1975.

The chances of reaching the goal set for Latin America's urban population are not so good. As shown in Figure 19, the estimated number of urban dwellers served through house connections was nearly 100 million in 1970 versus 126 million in 1975. At this rate of increase, by 1980 some 160 million urban dwellers are likely to be served through house connections; this

would result in roughly 67 per cent coverage of the projected 1980 urban population, a share well below the Ten-Year Health Plan's goal of 80 per cent coverage.

National Variations

Within this general framework, there are apt to be wide variations between countries—in both the proportions of urban and rural dwellers served and the rates at which these proportions are changing. Available data for 24 countries indicate that percentages of rural dwellers served through house connections or easy access in 1975 ranged from less than 1 per cent to 100 per cent, and that the percentages of urban dwellers served through house connections ranged from 20 to 98 per cent.

Between 1970 and 1975 the proportion of rural dwellers served rose by 10 or more percentage points in 9 countries and fell below the 1970 level in 6 others. If the trend observed over this five-year period continues, the goal of extending the coverage of water supply services to at least 50 per cent of the rural population by 1980 is likely to be reached in 9 countries.

In this same period (1970-1975), the proportion of urban dwellers served by house connections rose by 10 or more percentage points in 6 countries and fell below the 1970 level in 10 others. If this trend continues, 9 countries are likely to reach the goal of 80 per cent coverage by 1980; but it should also be noted that this goal had already been reached by 6 of those countries in 1975.

PAHO PROPOSALS FOR INTERNATIONAL AIR TRAVEL SURVEILLANCE

Introduction

The need for improved health surveillance of air travellers was stressed by PAHO's Directing Council (Resolution 31) at its XXIV Meeting in 1976. To help meet

that need, a small group of experts were brought together. Their aim was to discuss the subject in terms of Resolution 31 and to develop general guidelines for consideration by PAHO's Member Countries. The group met at PAHO Head-

quarters in Washington on 21-23 March 1977.

Reviewing the Directing Council's resolution, the group felt the main purposes of that resolution to be as follows:

- To help maintain and expand the system of disease surveillance and the rapid exchange of information between the Hemisphere's Member Countries;

- To urge and support Government coordination with the airlines so as to get accurate and opportune airline information regarding travellers who have been exposed to communicable diseases.

- To provide guidelines for Government use on how to prevent the spread of dangerous diseases by air travellers and how to pinpoint manpower and infrastructure resources.

- To deal not only with new problems—such as Lassa fever, Marburg virus-like infections, and arena virus disease—but also with old ones such as malaria, cholera, typhoid fever, meningococcal disease, influenza, etc.

Surveillance and Preventive Action

The group singled out one concept as being especially important for Member Governments. That concept is as follows: Diseases will continue to be imported in spite of whatever precautions are taken, and such imported diseases will only be detected by an adequate national surveillance system—not at the airport.

The group then attempted to put the extent of the problem into perspective. No documented cases of diseases subject to the International Health Regulations have been introduced through air transport. In the two known instances where infectious cases of Lassa fever were transported on commercial aircraft, and where extensive surveillance was instituted, no secondary transmission was confirmed. Malaria has caused the greatest mortality among air

travellers, and with malaria the problem has not been lack of surveillance; rather, it has been one of non-diagnosis, inappropriate therapy, or failure by the traveller to take sufficient prophylactic measures.

Adequate surveillance consists not only of collecting information, but also of sharing that information. All kinds of disease control programs are hampered by late or inaccurate international reporting of suspected or confirmed disease outbreaks. While this maxim has been stated many times, some Governments still have fears about informing international organizations. This fear has frequently led to misinformation in their own national media. In the long run, an open approach to international organizations and the media will lead to a better-informed and better educated public. In this regard, it was noted that PAHO has representatives in all the Member Countries, and part of these representatives' duties should be to encourage Government reporting.

It must be emphasized that until adequate public health laboratory support is available for the more common and important diseases, Governments should not attempt to develop diagnostic services for exotic viral diseases such as Lassa fever.

In this context, PAHO should disseminate information on the laboratory facilities that can safely accept such specimens, the conditions under which such specimens will be accepted, and the methods by which they should be shipped. Also, the Organization should know of the existence and availability of stocks of immune plasma or sera for specific exotic diseases.

Detailed recommendations for surveillance and prevention are given in the list of references at the end of the report, but a few general principles are worth noting:

- Patients with a known communicable disease which cannot be specifically treated or prevented should not be transported on commercial planes with other passengers.

- Patients with such diseases should

receive the best possible medical care employing the best available isolation techniques.

- Regarding diseases of this kind, hospital disinfection procedures and methods for transporting disease organisms need not differ from those employed in dealing with other known infectious diseases.

- Contact surveillance should be based on the epidemiologic situation; that is, nursing staff and family members in direct contact with the patient should receive more attention than mere casual contacts. No quarantine or isolation measures are indicated for healthy contacts.

- In general, patients should remain isolated for a week after they become asymptomatic.

The meeting emphasized that national plans should be developed rather than different local plans for different airports; general national guidelines can then be adapted to local situations. Likewise, a surveillance program must be a national program, and liaison between the air transport industry and governmental and nongovernmental organizations involved with air travellers must also be conducted at the national level.

Health authorities should sometimes take the initiative in instituting such liaison, so as to make known their specific requirements for such items as passenger lists, for example. Also, national and local meetings need to be held regularly, to ensure that all parties are attuned to changing concepts. This is especially important for interpreting changing immunization requirements, specimen handling methods, and procedures for handling ill passengers. In this latter regard, it was noted that significant illness breaks out aboard aircraft so seldom that stationing physicians at airports full-time is inappropriate. Such physicians might better be utilized to improve national surveillance programs.

On the other hand, it was suggested that

practice drills to locate arrived passengers be staged periodically by the health authorities, in collaboration with the air carriers and other parties involved. Then, in the unlikely event of a traveller becoming ill with a serious communicable disease after arrival, the health authorities will have experience in coping with this type of situation.

Technical Guides

The group drew attention to the existence of many excellent written guidelines that have been developed by WHO, the International Air Transport Association (IATA), the International Civil Aviation Organization (ICAO), and several national health authorities. It also reviewed the *Memorandum on Lassa Fever* prepared by health authorities of the United Kingdom, the WHO document "Guidelines for the Diagnosis and Care of Patients with Lassa Fever" (VIR 75.1 and VIR 73.11), and the account on management of imported Lassa fever prepared by the United States Center for Disease Control (CDC). It was recommended that these be distributed to PAHO Member Countries as examples for use in preparing national plans and guides. It was also suggested that PAHO consider preparing a synthesis of this information, translated into Spanish and Portuguese, covering those parts of the material which can be uniformly adopted. Such an overall guide should include a list of special laboratories in the Region where specimens may be sent for diagnosis of exotic diseases.

The problem of collecting and transporting specimens for laboratory diagnosis was considered extremely important. While recognizing on the one hand that routine laboratory tests for common febrile illness should not be discouraged or impeded, the group stressed the need to consider that all laboratory specimens from outbreaks with high case-fatality rates may harbor highly

infectious viral agents. Such specimens should only be handled by high-security labs, and the location of these should be widely publicized.

The group recommended that the recently published WHO *Guide to the Collection and Transport of Virological Specimens* should be translated into Spanish and Portuguese, simplified where necessary, and adopted as a basis for standard PAHO procedures. It also suggested that a list of all virus diagnostic laboratories in the Americas be added as an appendix, together with appropriate postal and telephone information.

Because many specimens will be sent to the CDC international reference centers for diagnosis, PAHO should ensure that all countries know the United States regulations for shipment of specimens containing potentially dangerous microbiological agents. The regulations of international and private air authorities, such as those of ICAO, IATA, Airline Pilots Association (ALPA), etc., should also be provided by the Organization to all national health authorities. Where routine procedures for transport of bio-hazardous material have been developed, as has been done in the Caribbean, these procedures should be disseminated to other areas for possible adoption. The group emphasized, however, that in practically all instances where successful international shipment of specimens has occurred, there has been frequent and detailed contact between the shipper and receiver by phone or cable regarding the exact procedures to be followed.

The group also called attention to the existence of excellent material dealing with international spread of malaria and the prevention thereof. In terms of the number and severity of disease cases spread by international air travellers, malaria is considered the top-priority problem. However, the group felt that what is needed is wider dissemination of the existing guidelines—as to ensure that they are read and under-

stood by travellers and those responsible for travellers' health.

In addition, the group felt that a new guide on African hemorrhagic fever might prove useful in the Americas and that such a guide should be based on material now being prepared by WHO.

Recommendations

The group made the following specific recommendations:

- 1) Diagnosis of suspected cases should be confirmed promptly by laboratory tests performed either in the country involved or at designated international reference laboratories. Selection of the appropriate international reference laboratory should be determined by the suspected clinical diagnosis or diagnoses. At the present time the Center for Disease Control (CDC) in Atlanta, Georgia, has the only recommended high-security reference laboratory in the Americas.

- 2) Prompt and proper handling and shipment of laboratory specimens should be carried out with consideration for the safety of people who will come in contact with the package—and also for preservation of the material, so that the receiving laboratory can make a reliable diagnosis. Appropriate packaging and labeling, provision of essential case information, and compliance with Government air regulations are especially important in shipping specimens obtained from cases of highly communicable and fatal diseases. The shipping laboratory should be responsible for cabling the date of shipment, flight number, and airway bill number to the receiving laboratory. Telephone or cable consultation between laboratories prior to shipment is frequently necessary and should be encouraged.

- 3) Two types of contacts (high-risk and low-risk) can be defined for epidemiologic purposes. The high-risk contact has had intimate exposure to the patient; the low-risk contact has had only casual expo-

sure to the patient. The epidemiology of the individual diseases will determine the precise definition of what constitutes a high-risk or low-risk contact. Experience to date has shown that productive and efficient surveillance efforts have concentrated on high-risk contacts.

4) Effective observation of both high-risk and low-risk contacts can be maintained through daily clinical surveillance, without interfering with the contacts' normal activities. Where feasible, this may involve a daily telephone call from health authorities. There is no need for physical or laboratory examination of asymptomatic contacts, except in a few special cases. However, clinical surveillance should commence as soon as a case becomes suspect, while confirmatory laboratory tests are still pending; and it must last at least as long as the longest documented incubation period of the suspect disease(s).

5) The primary responsibility for these public health problems rests with the national health authorities. However, collaboration with the airlines, other government authorities at the airport, and tour

organizers is essential in order to obtain passengers' names, addresses, and telephone numbers. The sooner this collaboration begins, the better the chances for reconstructing a complete passenger list. As a general rule, this information is difficult to obtain one week after flight arrival.

6) Member Governments should give airport and national health personnel sufficient authority to carry out their international surveillance duties.

7) General experience indicates that medical officers are not needed at airports for effective international surveillance. Several countries have made good use of health personnel previously assigned to airports in conducting surveillance activities elsewhere in the country.

8) PAHO should continue to advise Member Governments on further developments in the international surveillance of highly communicable and fatal diseases. As soon as possible, recommendations and manuals should be developed to provide the technical basis for national guidelines which will take into account the actual surveillance situation in each country.

Bibliography

(1) Madeley, C. R. *Guide to the Collection and Transport of Virological Specimens*. World Health Organization, Geneva, 1977.

(2) Mark, Richard S. "Disinfection Methods and Procedures in International Air Transport." World Health Organization, working document WHO/SSH/70.2, Geneva, 1970.

(3) Monath, T. P. "Lassa Fever and Marburg Virus Disease: Guide to their Diagnosis, Management and Control in Africa." World Health Organization, working document WHO/VIR/73.11, Geneva, 1973.

(4) Monath, T. P., and Jordi Casals. "Guidelines for the Diagnosis and Care of Patients with Lassa Fever." World Health Organization,

working document WHO/VIR/75.1, Geneva, 1975.

(5) Pan American Health Organization. "Treatment of Severe Cases of Falciparum Malaria." PAHO/WHO Technical Document D-DC/ME-N, 3 March 1976, Washington, D.C., 1976.

(6) Périn, M. *Le Transport en Avion commercial des Malades contagieux*. World Health Organization, working document 98-18, Geneva, 1976.

(7) United Kingdom, Department of Health and Social Security. *Memorandum on Lassa Fever*. United Kingdom, London, 1976.

(8) United States, Department of Health,

Education, and Welfare. *Comprehensive Action in a Smallpox Emergency*. Washington, D.C., 1974.

(9) United States, Department of Health, Education, and Welfare. *Collection, Handling, and Shipment of Microbiological Specimens*. Pub. DHEW (CDC) 75-8263, Washington, D.C., revised July 1974.

(10) World Health Organization. "WHO/NIH Consultation on Facilitation and Safety in the International Transfer of Research Materials." Working document CDS/SMM/76.1, Rev. 1, Geneva, 1976.

(11) World Health Organization. "Report of the Informal Consultation on Marburg Virus-like Disease." Working document WHO/VIR/77.1, Rev. 1, Geneva, 1976.

(12) World Health Organization. Information on Malaria Risk for International Travellers. *WHO Weekly Epidemiological Record* 48(3), 1973.

(13) World Health Organization. Information on the World Malaria Situation, January-December 1975. *WHO Weekly Epidemiological Record* 52(3), 1977.