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Special Program on the Acquired Immunodeficiency Syndrome of the World Health Organization

Introduction

As of 26 March 1987, 45,597 Acquired Immunodeficiency Syndrome (AIDS) cases had been reported to the World Health Organization (WHO). The current number of reported cases from many areas of the world, however, does not reflect the actual AIDS situation. A total of 130 countries

reported on AIDS, of which 101 reported cases. In Table I the figures are compared with those reported to the Thirty-ninth World Health Assembly.

The name "human immunodeficiency virus" (HIV) recommended by the International Committee on Taxonomy of Viruses for the etiological agent of AIDS — previously referred to as lymph-

Table 1. Total number of cases and number of countries reporting by continent.

Continent	26 March 1987			25 March 1986		
	Cases	Countries reporting	Countries reporting 1 or more cases	Cases	Countries reporting	Countries reporting 1 or more cases
Africa	3,531	36	22	31	5	2
Americas	36,782	45	39	19,756	43	32
Asia	112	19	12	46	10	6
Europe	4,732	27	26	2,053	23	20
Oceania	440	3	2	183	2	2
Total	45,597	130	101	22,069	83	62

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adenopathy-associated virus/human T-lymphotropic virus, type III (LAV/HTLV-III) — has been adopted by WHO.

Additional human retroviruses have been identified, principally in west Africa. A virus identified by French researchers as lymphadenopathy-associated virus, type 2 (LAV-2) was isolated from persons originating from west Africa and having clinical and immunological features typical of AIDS. A virus identified by United States researchers as human T-lymphotropic virus, type 4 (HTLV-4) was isolated from asymptomatic persons in west Africa. These two viruses appear quite similar to each other, are both distinctly different from HIV, and appear antigenically closer to the simian immunodeficiency virus (STLV-III) than to HIV. Seroepidemiological studies suggest that LAV-2 or HTLV-4 antibodies are present in a small percentage of healthy subjects in several west African countries.

The number of countries in Africa reporting on AIDS to WHO has increased substantially. National and international collaborative studies have established the basic features of AIDS and HIV epidemiology in Africa, including the knowledge that transmission occurs in the same manner as in other parts of the world (sexual, parenteral, perinatal). The primacy of bidirectional heterosexual transmission (male to female; female to male) in the epidemiology of AIDS in Africa is also accepted. Additional studies have established the importance of blood transfusions and injections with non-sterile equipment in HIV transmission. Perinatal transmission is also recognized to be important, especially in areas where 5-10% of pregnant women have been recorded as HIV seropositive. There is no epidemiological support for transmission through casual contacts (including within households), and there is considerable epidemiological evidence against the hypothesis of insect vector transmission of the disease. While the precise extent of HIV within Africa is not known, central, eastern and parts of southern Africa appear most affected, and western Africa appears less affected. The actual number of HIV-infected persons or AIDS cases is not known. An estimate of one million infected persons (with an extrapolated estimate of an annual incidence of at least 10,000 AIDS cases) has been advanced, but is considered a minimum by some scientific observers.

In the Americas (as in Europe and Australia) the basic epidemiological patterns have not changed during the past year, and cases occur mainly among young (20-49 year old) homosexual or bisexual men and intravenous drug users. However, the estimate of the proportion of cases of AIDS acquired through

heterosexual contact has increased from 1 to approximately 4%. The United States Public Health Service has estimated that 270,000 cases of AIDS will have occurred in the USA by 1991 (more than 8 times the approximate 32,000 reported cumulatively since the beginning of the epidemic); the majority are expected to occur in persons already infected with HIV. AIDS cases have been reported from 39 countries in the Americas in addition to the USA, with the largest numbers from Brazil, Canada, Haiti, Mexico, Trinidad and Tobago, and the Dominican Republic.

In Central and South America the epidemiological picture is dominated by the "western" pattern, involving homosexual/bisexual men and intravenous drug abusers. However, in Haiti an increasing number of cases apparently associated with heterosexual transmission have been reported; the male/female AIDS case ratio is currently about 3:1 (compared with ratios of 10:1 or greater in the USA, Europe and Australia). It is believed that the situation may be similar in other parts of the Caribbean area.

In Europe most countries are now considered to be facing an epidemic situation. Throughout Europe an estimated 500,000 to one million persons may be infected with HIV. The highest rates (cumulative cases of AIDS per million population) have been reported from: Switzerland (30.1), Denmark (25.6), France (22.3), and Belgium (20.9). The percentage of cases originating from Africa or the Caribbean has decreased (now about 8% of all reported cases), while that of cases associated with intravenous drug abuse is increasing rapidly (from 5% in June 1985 to 12% in October 1986). This phenomenon has been noted particularly in southern Europe. On the basis of current trends, between 25,000 and 30,000 cases of AIDS are expected to have occurred in Europe by the end of 1988.

Relatively few AIDS cases have been reported in Asia, and most of those confirmed have been associated with exposure to blood products or persons of western origin. However, serological evidence of HIV infection has been detected in male and female prostitutes in several countries and indigenous HIV transmission has been recorded. Seroepidemiological studies suggest that, so far, HIV has not widely penetrated the general population.

In Oceania the 440 cases were from Australia (407) and New Zealand (33), and were typical of the "western" epidemiological pattern.

Earlier estimates of the rates of progression from asymptomatic HIV infection to AIDS and other AIDS-related syndromes have been revised up-

wards. On the basis of current information it appears that 10% to 30% of HIV-infected persons will develop AIDS and 25% to 50% more will develop AIDS-related syndromes during a five-year period. The annual risk of progressing from asymptomatic HIV-infected to AIDS appears to increase with time (i.e., the risk during the fifth year of infection appears greater than the risk during the second year). These current data suggest that the majority of HIV-infected persons may develop AIDS during the first 10 years after HIV infection and that the remainder may have AIDS-related syndromes.

HIV is neurotropic. The precise cellular element(s) infected are not fully understood, although mononuclear and multinuclear macrophages appear to support replication of HIV within the brain. HIV affects the neuraxis at all levels, resulting in clinical disorders involving the central and peripheral nervous systems. Approximately one-third of AIDS patients have clinical neurological findings attributable to HIV infection itself, rather than to opportunistic infections affecting the nervous system. The major clinical syndromes associated with HIV neurological infection include: subacute encephalopathy with progressive dementia, aseptic meningitis, encephalitis, and peripheral neuropathy. Given HIV's virological similarities with the lentiviruses (e.g. Visna virus), the occurrence of an epidemic of neurological disorders principally involving dementia among HIV-infected persons is considered possible during the next decade.

A recent clinical treatment trial among AIDS patients found that Zidovudine (Azidothymidine or AZT) prolonged life and was associated with clinical and immunological improvement. There were, however, side-effects, including bone marrow suppression. Longer-term benefits and risks are currently unknown. It may nevertheless represent the first major step towards the eventual development of safe and effective therapeutic agents. A pharmaceutical company has advised WHO that it is using WHO official statistics on AIDS as a basis for allocation between countries of available supplies of AZT after product registration. Analogues of Zidovudine (e.g. Dideoxycytidine) are under evaluation; it is hoped that they may offer increased antiviral efficacy with less toxicity. In addition, preliminary data suggest that the antiviral agent Ribavirin may prevent progression to AIDS among patients with lymphadenopathy syndrome.

Several prototype vaccines have reached the stage of immunogenicity and challenge testing in chimpanzees. Chimpanzees can be infected with HIV but do not demonstrate AIDS-like illnesses. Clinical

studies (phase I) for several prototype vaccine preparations will start during 1987. Current scientific consensus, however, is that no vaccine will be available for widespread human use for at least five years. In addition, since no vaccine has ever been prepared against a human retrovirus, several specialists in retrovirology have raised the possibility that the vaccines currently under development may not be protective.

WHO Special Program on AIDS

The pandemic of HIV infection poses an unprecedented and urgent challenge to international public health. In January 1987, at its seventy-ninth session, the WHO Executive Board supported the priority accorded by WHO to activities for the prevention and control of AIDS. The WHO Special Program on AIDS was formally established by the Director-General on 1 February 1987. An unprecedented and coordinated global response is urgently required, in view of:

- *The magnitude of the epidemic.* The current magnitude of the HIV pandemic and its broad impact have been seriously underestimated. Further global spread and increase in HIV infection are certain to occur, and the evolution of the HIV pandemic cannot be accurately predicted.
- *The outcome of HIV infection.* The adverse health effect of HIV infection is of profound importance to the individual, the family and society. HIV infections threaten the health gains which had been projected in the developing world.
- *The social impact of HIV.* The personal, social and economic costs of the HIV pandemic are enormous. It threatens development through its impact on those aged 20 to 40 years and its effects on infant and maternal mortality.
- *The challenge of prevention and control.* International and national HIV control will require long-term efforts and commitment. As neither a vaccine nor therapy for large populations is likely to become available for at least several years, education is the key to preventing further spread. HIV control must be part of primary health care.

Available evidence suggests that we are witnessing the beginning of a major pandemic of infection with HIV (and perhaps with related retroviruses). While each feature of HIV is not in itself unprecedented, the combination of features as well as the timing appear to be without precedent. These features include:

- infection with HIV appears to be lifelong;
- infected persons may be asymptomatic for long periods yet capable of transmitting HIV;
- the natural history of HIV infection is not yet fully known, but the “at risk” period for progression to AIDS appears long;
- specific treatment (especially for infected persons not yet ill) and vaccine are not available;
- HIV is neurotropic and the ultimate burden of neurological pathology in the HIV-infected population is unknown;
- HIV is transmitted primarily sexually, from any infected person to his or her sexual partner, but also parenterally;
- perinatal transmission occurs, and as many as 50% of babies born to infected mothers may be affected;
- HIV-induced immunosuppression can interact with already existing endemic or epidemic diseases in the environment (e.g. tuberculosis);
- HIV-related issues have major potential impact in virtually all health areas (e.g. immunization, maternal health, child health, dental care, hospital care, infection control, sexually transmitted diseases, family planning).

The HIV situation therefore calls for extraordinary energy, creativity, and resources. The potential impact of public health interventions at this phase of the HIV pandemic is considerable. A strong emphasis on primary prevention, for individuals and for societies, is warranted.

The WHO Special Program on AIDS has two major tasks:

- to support and strengthen national AIDS programs throughout the world;
- to provide global leadership, help ensure international collaboration, and pursue global activities of general value and importance.

At the national level a plan of action for AIDS control and prevention is required, including the following major aspects.

- Creation of a national AIDS committee (or the equivalent), which is a concrete expression of national commitment to confront AIDS and HIV-associated problems. The committee should include representatives from health, social services, education and other relevant sectors.
- Implementation of an initial epidemiological and resource assessment. The initial assessment can be conducted within a relatively brief (four- to eight-week) period. This assessment may involve review

and critical analysis of existing data on AIDS and HIV infection collected within the country, or it may require collection and analysis of new information (e.g. AIDS case-finding, seroprevalence surveys of selected populations). The resource/infrastructure assessment should determine the ability of the existing health system to support the epidemiological, laboratory, clinical and prevention components of the national AIDS program.

- Based on findings of the initial epidemiological assessment, a suitable surveillance system should be established to provide timely and useful epidemiological information regarding AIDS and HIV infection to the national committee. In addition, serosurveys may be conducted among designated sectors of the population (e.g. blood donors, prostitutes, patients attending sexually transmitted disease clinics, pregnant women), and specific serological monitoring or other epidemiological studies could be considered.

- Laboratory support is required for epidemiological, clinical and prevention activities. On the basis of the initial assessment decisions are made regarding in-country serodiagnostic needs. Laboratory capability would be strengthened in accordance with these requirements.

- Education of health care personnel at all levels is important, both for management of patients and other HIV-infected persons, and for public health education.

- The principal goal of the national AIDS program remains the prevention of HIV transmission to uninfected persons and groups. Prevention activities will vary according to national situations, but should in general include consideration of the following broad issues:

- Sexual transmission: education of identified high-risk groups as well as of the general population;
- Transmission through blood transfusions: review of existing blood transfusion policies and practices; possible implementation of donor education and notification programs, laboratory screening of donors or donated blood;
- Transmission through intravenous drug use: education of high-risk groups;
- Transmission through non-sterile injection equipment used for medical purposes by medical or paramedical personnel (including traditional practitioners): education of health providers and of the public, additional assistance in helping to ensure use of

sterile injection equipment (or other instruments that pierce the skin);

– Perinatal transmission: education/counseling approaches; possible screening programs among certain groups of pregnant women and women of child-bearing age.

• Reduction of the impact of HIV infection: the psychological, family, economic, cultural, social and political impacts of HIV infection are enormous — those who are infected, their sexual partners, members of the household and others must be assisted in dealing with the related problems.

The strategies, structure and projected needs of the WHO Special Program on AIDS are detailed in document WHO/SPA/GEN/87.1, issued in March 1987.

(Source: WHO Fortieth World Health Assembly, Provisional Agenda Item 18.2, 27 March 1987.)

Editorial Comment

This article presents a summary of the AIDS situation in the world and outlines the principal objectives and approaches of WHO's Special Program on AIDS.

The Pan American Health Organization (PAHO), as the WHO Regional Office for the Americas, fully participates in the implementation of the Special Program on AIDS in this Region. The PAHO program is currently providing technical cooperation to several national AIDS prevention programs and to date has mobilized 1.1 million dollars to this effect. The future success of the WHO/PAHO Special Program on AIDS will depend on the political will and the financial and administrative commitment of each individual Member Country to the national, regional, and global efforts needed to combat this unprecedented epidemic.

Consensus Statements on Transmission of Human Immunodeficiency Virus and Infection of Health Workers

During the Third Meeting of the WHO Collaborating Centers on AIDS held in Washington, D. C., 6 June 1987, consensus statements were prepared on two issues that are subject to widespread concern and controversy. They are transcribed below.

Transmission of Human Immunodeficiency Virus (HIV)

Epidemiological studies in Europe, the Americas, Africa and Australia repeatedly have documented only three modes of HIV transmission:

- sexual intercourse (heterosexual or homosexual);
- contact with blood, blood products, semen or transplanted organs. The vast majority of contacts with blood involve transfusion of unscreened blood or the use of unsterilized sy-

ringes and needles by IV drug abusers or in other settings;

- mother to child — mostly before, and perhaps during or shortly after birth (perinatal transmission).

There is no evidence to suggest that HIV can be transmitted by the respiratory or enteric routes or by casual, person to person contact in any setting, including household, social, work, school or prison settings.

Epidemiological and laboratory studies have established that of the "body fluids," transmission seems limited to blood, semen, and vaginal/cervical secretions. Kissing has not been documented to pose a risk of HIV transmission. While unproven, some theoretical risk from vigorous "wet" kissing (deep kissing or tongue kissing) may exist.

There is no evidence to suggest that HIV trans-

mission involves insects, food, water, toilets, swimming pools, sweat, tears, shared eating and drinking utensils or other items such as second-hand clothing or telephones.

HIV Infection and Health Workers

Reports of HIV infection of a small number of health workers have emphasized the need to adhere to existing guidelines for the prevention of blood-borne infections. Such existing guidelines refer to situations in which there is a possibility of exposure

to blood or any body fluid regardless of their source.

Available information indicates that health workers are normally at very low occupational risk of HIV infection. This very low risk can be further minimized if existing guidelines for avoiding any blood-borne infection are rigorously implemented and strictly enforced.

Routine HIV screening of patients to protect health workers should not be implemented without careful and detailed consideration of all of the HIV screening criteria developed by the World Health Organization.

Diagnosis of the Health Situation in Brazil: Conclusions of the Seminar on the Outlook for Epidemiology in the Context of the Reorganization of Health Services

Introduction

The importance of epidemiology for the development of activities in the health field has always been emphasized in theory. In practice, however, it has been shown that use of the epidemiologic method continues to be very limited in regard to program support and, especially, to the production of knowledge. In recent years training in epidemiological surveillance has been emphasized through short courses, aimed at training personnel for work in immunization and communicable disease control programs while assigning priority to program management.

Specific training in the field of epidemiology has been limited to specialization courses in schools of public health and to some master's and doctorate level courses that include this subject matter. The limited number of professionals with specific training and the difficulties that the organization of health services impose on the practice of epidemiology make the production of knowledge and the development of methods inadequate to meet the country's needs and potentials.

Considering Brazil's new sociopolitical context

after decades of authoritarian governments, and in view of the questioning of the entire structure of its health services, aimed at achieving a unified and more efficient system, it is essential to again discuss training of epidemiologists and their contribution to the improvement of health conditions of the population. With this purpose in mind a National Seminar was organized in Itaparica, State of Bahia, from 13 to 16 May 1986. The meeting was sponsored by the Brazilian Association of Graduates in Public Health (ABRASCO) and the Department of Preventive Medicine of the School of Medicine of the Federal University of Bahia. The Ministry of Health, the National Institute of Medical Care of the Social Welfare Organization (INAMPS), and the National Council of Scientific and Technological Development also gave their support.

Due to their current importance for other countries of the Region, the conclusions and recommendations of the Seminar, with respect to diagnosis of the health situation, are represented below.

Diagnosis of the Health Situation

Health diagnosis is considered to be an instrument for ascertaining health realities, to guide the

planning and programming of activities in the field of health and to fulfill other political and social requirements. The wide variety of diagnoses needed to satisfy different requirements were examined. Diagnosis is understood to mean not only a set of data, but rather their analysis and the conclusions drawn from them.

Despite general acceptance of the importance and multiple uses of health diagnoses, very few have been performed, and the results have not been widely utilized. The real need for health diagnosis in guiding decision-making has even been questioned, since decisions are made on the bases of other political, social, and institutional criteria. However, when it is necessary for a decision already adopted to demonstrate the need for the established objective, then information that constitutes some kind of diagnosis is used. Thus, it is recognized that health diagnosis is often carried out in the framework of preestablished ends.

Conclusions and Recommendations

With regard to information on health, a consensus was reached that available data have not been duly studied, although such study would make it possible to acquire better knowledge of health realities. It has been shown that data compiled in several institutions with administrative ends are available, and could be utilized in the field of epidemiology if adapted to that end.

It was indicated that existing methodological and theoretical bases make it possible to carry out health diagnoses and to promote the dissemination of their use. However, it is necessary to systematize knowledge and contributions in the field of epidemiology and in other disciplines in order to integrate them into health diagnosis. It is fundamental to incorporate analysis and evaluation of new health indicators and to deal with the topic from a broader viewpoint, taking into account their social and political dimension. On the other hand, as diagnoses are population-based, it is necessary to make better use of demographic indicators and, consequently, to provide epidemiologists with appropriate training so that they can better prepare that kind of information.

The field of health diagnosis has a considerable potential for improvement at both the conceptual and methodological levels. It is important to conduct studies to highlight the political and ideological commitments that historically have led to the performance or omission of health diagnoses, as well as studies aimed at formulating indicators that make it

possible to better understand social realities and the health of the population and of various social groups.

It is necessary for health service professionals to use widely the instruments required for improving health diagnosis. It is desirable that a multidisciplinary team participate in carrying out health diagnosis; this requires specific training of human resources and the definition of an institutional locus within which such professionals can develop the practice. Currently, the time devoted to that task is minimal, personnel is overloaded with other activities, and knowledge produced in the field of epidemiology is meager.

The need is recognized for a political project on epidemiology that includes, on the one hand, analysis of the population's living conditions and health in support of popular movements and demands, and on the other, the role of epidemiology in the reorganization of the health services in support of the practices of planning, administration, and critical and permanent evaluation of health services and their orientation. In that context, epidemiology, through diagnosis, can contribute to the identification of health problems which require efforts to improve the quality of care; furthermore, it can show programming options with respect to the organization of services.

It was pointed out that the kinds of primary and secondary indicators to be used (social, political-economic, on mortality and morbidity, as well as positive health indicators) will depend on the managerial level (central, regional, or local) and on the objectives of the health diagnosis. For the time being it is not possible to define a set of necessary and sufficient indicators for any diagnosis, mainly due to the great diversity among regions and municipalities, either in their current health problems or in the availability of data files and systems. However, it was indicated that general guidelines can and should be formulated. The group arrived at a consensus in regard to the need for analysis and indicators on the quality of life of the population and of various social groups, in the hope that such indicators can give expression to and follow the reproduction of the living conditions of the different social classes and population groups, as well as of morbidity and mortality profiles. In view of the scarcity of available information from mortality and morbidity registers, the validity of a process of successive approximations is recognized in which membership in certain social groups could be estimated on geographic or other bases.

In view of the current state of development of

health services in the country, as well as of the decentralization and increasing degree of involvement of municipalities, an effort must be made so that federative units have on hand published data of files classified by municipality. It would be desirable that institutions such as the Brazilian Institute of Geography and Statistics (IBGE), the INAMPS, the Ministry of Health and the state secretariats, among others, could maintain their files organized in a manner that would allow a municipality to have access to the information on its inhabitants. In addition, whenever feasible and pertinent, the data should be published broken down by municipality. It is essential to establish channels for returning information to the local level. The municipalities' task would be to examine the existing data in detail and to establish, in accordance with local needs and possibilities, specific systems for analysis or data collection, taking into account differences within the municipality.

The principal obstacles and impediments perhaps responsible for the scarcity, incompleteness, and inconclusiveness of the health diagnoses were underlined. An important limitation is the lack of human resources specialized in epidemiology in Brazil; this manifests itself both in the number of personnel with specialized training and in the level and kind of training received. Another aspect worth mentioning is the gap frequently observed in the health services, between the practice of epidemiology and planning.

In relation to the university it was pointed out that the trend toward the breaking of its ties with the services results in work with such a pace and perspective which, in general terms, do not satisfy the demand for services in an appropriate or timely manner. As far as analysis of the health-disease process is concerned, professionals linked to universities devote greater effort to research and do not make important contributions to methodological and conceptual progress needed in performing diagnoses with secondary data. Nevertheless, the important role universities can play if they maintain a dynamic relation with the services was acknowledged.

The scarcity of activities related to diagnosis is perhaps also due to the shortcomings of a methodological model which does not respond to new social requirements. The relatively insignificant results obtained from diagnoses of a descriptive and general nature could lead to their being dispensed with for planning. Health diagnosis should be carried out so as to serve the needs of strategic planning. In this sense it is important that the most dynamic social sectors—which are, within the political and institutional changes, the health services and the most

affected social segments of the population—seize the instruments and results of health diagnoses. Since the importance of diagnoses depends on the social importance attributed to the health of the population, an increased interest in knowledge of health conditions may be expected in the new political and institutional juncture.

Finally, the need to establish an institutional locus allowing inclusion of epidemiological practices into a political and technical project was pointed out. Institutionalization should guarantee a space that will transcend the immediate commitment, that is, a certain autonomy for epidemiologists with respect to planners. The epidemiologist needs a place and instruments in order to quantify and evaluate health realities not yet reflected in the demand for services, thereby making it possible for such analyses to serve as elements for evaluation and questioning of health policy.

As a corollary to the previous analysis, the group formulated several proposals:

Establishment of a Network of Centers for Unified Health Information

This proposal is made within the project of the establishment of a single health system and it establishes a place for epidemiology at all stages necessary to accomplish that goal. Creation of this network would mean an effective opening of the institutional locus to epidemiological practices.

The network would have three levels:

The first level would encompass the network of unified health information centers of the different federal units of the country and would be responsible for systematizing the data bank and for routine analyses. This structure would be expanded through a broader, more extensive network in the larger regions and municipalities having the means and resources. The proposed network should be adapted to the situation in each administrative division. The state network would be linked to a unified center at the national level which would be responsible for coordination, promotion, and consolidation of the data for routine analysis. A main task of that service would be to standardize the data compiled and prepared by the various participating institutions to make them useful and comparable. An important element would be the institutional inclusion of professionals responsible for health diagnosis within the technical secretariats of the coordinating commissions for integrated health activities at various levels.

At the second level, groups of university researchers—if possible in collaboration with professionals from the network of services of the region—would carry out more detailed studies, although still of a general nature, for which contracts or financing would be obtained.

The third level would consist of a network of national reference centers for specific problems or groups of diseases.

Human Resources Development

It is essential to train intermediate-level personnel for routine tasks in the network. At the municipal level (according to their size), the health worker could be responsible for preparing health diagnoses.

It is necessary to provide adequate training to personnel at different levels (central and local), since their functions are qualitatively different. Besides acquiring knowledge of social and health policies, indicators of the quality of life, demographic aspects, and the factors that determine morbidity and mortality profiles, the personnel should study quantitative methods in depth and acquire basic knowledge of electronic data processing.

It is necessary to offer professionals concrete training possibilities so that they, in turn, can play a role in training intermediate-level personnel who will work in the network.

Eventually, a pressing need for personnel may arise; this could be satisfied by resorting to personnel trained in recent years in epidemiology specialization courses. Itinerant and summer courses could be offered; training could also be provided through programs for continuing education and supervised research.

Creation of a professional career and appropriate working conditions (preferably full-time) with adequate remuneration were considered indispensable elements for taking advantage of the efforts devoted to training of personnel and for increasing the productivity of the information network on health.

Dissemination of Knowledge

The preparation of a text on health diagnosis containing conceptual and methodological analyses was suggested. This text should also include analyses of the social reproduction processes, morbidity and mortality profiles, social indicators, quality-of-life and demographic aspects, and analysis of health-disease and death indicators. This text should also contain models or examples of health diagnoses already carried out.

Promotion of periodic regional meetings to examine methodological advances and analyze findings in the field of health diagnoses is considered important. The results of these meetings would be consolidated at a national meeting, with the participation of health institutions and representatives of society, in which the health diagnoses performed and the methodological problems in question would be presented.

There is a need to create mechanisms for broad dissemination of bibliography and works on health diagnosis. With respect to the results of diagnoses it is considered that, in addition to being utilized by the health planning and administration sectors, they should be widely disseminated among the population, especially at the municipal level, through the mass and other media.

At the local level, social and political requirements tend to make room for diagnoses more consonant with local reality and for the participation of the population, thereby setting the bases for building a participatory diagnosis.

(Source: *Estudos de saúde coletiva* No. 4, 111-117, publication of the Associação Brasileira de Pós-Graduação em Saúde Coletiva, ABRASCO, Rio de Janeiro, 1986.) The full report of the meeting may be requested from the Health Situation and Trend Assessment Program, PAHO.

Strengthening the Practice of Epidemiology in the European Community

This paper is concerned with the stage of development of epidemiology in the countries of the European Economic Community (EEC) in 1984. It describes some of the obstacles to further development and suggests some remedies. Although the study was confined to the EEC the problems described are not peculiar to the European Community and are, the author believes, to be found in many countries.

Undergraduate Courses

In most medical schools in the EEC epidemiology is taught as part of the undergraduate course in public health.¹ This course is usually obligatory and in most schools there is a compulsory examination. In a minority of medical faculties there are separate departments of epidemiology which have developed under new and innovative leadership. They bear titles such as epidemiology and statistics, biostatistics and information, or applied health sciences. Clinicians are increasingly regarding epidemiology, like pathology, as a basic science for clinical medicine and they seem to be more likely to consult the staff of a department of epidemiology and medical statistics for collaboration and advice in some research problem than go to a traditional department of public health. This has helped to stimulate the development of epidemiology and medical statistics.

Methods and content of undergraduate public health teaching have been updated in various other ways. In the new medical school in Maastricht, Netherlands, for example, much reliance is placed on the problem-solving approach. Departments are less clearly defined and epidemiology is included among various so-called "capacity" groups such as health economics, general practice, medical sociology, occupational epidemiology and health education. The medical student may consult these "capacity" groups for solving the medical social problem he is working on.

In the UK, epidemiology, medical statistics and health service studies have to a large extent replaced

traditional public health in the undergraduate curriculum. The name of the specialty has changed from public health to community medicine or community health and the specialist who works in this field is now called a community physician instead of a public health medical officer. The undergraduate courses in the UK consist mainly of epidemiology, with as much or more emphasis on non-communicable disease as on infectious disease, together with medical statistics and health service studies.

Many UK medical schools provide elective periods in the undergraduate course during which the student studies a problem of his own choice in depth. Students quite often select medical social problems for these elective periods. This provides an opportunity to encourage a few students to choose epidemiology as a field for future research or employment.

Obstacles to Improving the Teaching of Epidemiology to Medical Undergraduates

- Very large classes, up to 500 in some EEC countries, and shortage of staff make it very difficult to organize tutorial teaching and project work.
- There is a shortage of textbooks of epidemiology in languages other than English.
- In most EEC countries medical education is controlled by the Ministry of Education and in some cases what must be taught is set out in considerable detail. It may be difficult to introduce a new subject such as epidemiology or health service studies, especially if it is necessary to pass new legislation and obtain the agreement of all the universities concerned and sometimes also the agreement of regional governments.

Postgraduate Training

There are still a good many traditional postgraduate courses in public health of six months or a year provided largely for doctors already in public health posts. These courses contain some epidemiology, much of which is related to communicable disease.

There is a serious shortage of facilities for training medical postgraduates who wish to specialize in epidemiology and for clinicians and research

¹Public health is used here as a synonym for public health and hygiene, social medicine, or community medicine.

workers who wish to acquire knowledge and skill in modern epidemiology but do not want to make a career in medical administration. Attempts have been made to remedy this deficiency by seconding doctors to the USA to short courses in epidemiology of a few weeks duration, at Amherst, Chapel Hill, Minnesota School of Public Health, Johns Hopkins or the University of California, Los Angeles. Similar short courses have been organized in the Ministry for Youth, Family and Health of Germany (FRG), employing visiting epidemiologists from the USA to help in the teaching. Intensive three-week summer courses in epidemiology are held at the London School of Hygiene and Tropical Medicine (LSHTM). Longer courses (six months) in epidemiology and a one-year Master of Science course are also given at the LSHTM and one week courses are held at Southampton University. Postgraduates from EEC countries and elsewhere are welcomed to all of the above courses.

The main reason that there are so few substantial postgraduate training courses in epidemiology is because it has not been recognized as a medical specialty with its own career structure. The in-service training courses in the UK leading to the Membership of the Faculty of Community Medicine (MFCM) of the Royal Colleges of Physicians, do, however, lead to a career in which epidemiology plays an important part. These courses normally consist of a period of one and a half to two years paid practical work in the National Health Service (NHS) administrative centers, interspersed with short (1-2 week) academic courses in universities totalling about 22 weeks. This training contains a large element of epidemiology and statistics and one of the three papers in the examination is devoted to these two subjects. About one-third of the course is devoted to sociological and psychological aspects of community medicine and one-third to health service studies. A young doctor in the UK who wishes to specialize in epidemiology and have a good chance of a career in which he can practice it, must therefore also become competent in these other disciplines.

Obstacles to the Development of Postgraduate Training in Epidemiology

- Recruitment in the field of epidemiology is made difficult by the absence of jobs in this specialty and perhaps also because it is associated with work in public health, insurance medicine and school medicine. Appointments in these fields are less highly esteemed than those in clinical medicine, they carry a lower rate of remuneration and do not nor-

mally include the possibility of increasing income through private medical practice.

- There are too few postgraduate courses giving theoretical and practical training in epidemiology.
- There is a shortage of trained epidemiologists in university departments of public health or social medicine.

Epidemiological Research

A good deal of epidemiological research is being carried out in universities, research institutes and other centers in the EEC but the full potential for this type of research is nowhere near to being fulfilled.

This is primarily due to the lack of trained epidemiologists and supporting staff and because ministries of health and regional health authorities do not employ enough epidemiologists to carry out investigations and to advise on health and health services at national, regional, county and large city level.

A special problem is that epidemiological research is difficult for a single worker to carry out because it usually involves collecting and analyzing large amounts of data. It typically requires an epidemiologist to plan, organize and report the research, field workers to collect data, data processors and computer operators to arrange and analyze the data and statisticians to advise on the design of the research and on the significance of the findings.

In spite of these difficulties in most university departments of public health or community medicine, etc., epidemiological research is carried out, though often on too small a scale and with insufficient staff. It is impossible to tackle important problems on a national scale with such limited resources.

In some countries, for example in France and the UK, well-staffed and well-equipped government funded medical research units (Institut National de la Santé et de la Recherche Médicale and Medical Research Council Units) have been created to cover a wide field of medical research including epidemiology.

There are also a few large government funded institutes such as the Institute for Cancer Epidemiology in Copenhagen, the Medical Social Research Board in Dublin and the National Institute of Health in Rome which are well-staffed and equipped and where large scale epidemiological research is carried out. Problems amenable to epidemiological research are referred by health ministers to these large institutes and research units and sometimes to health service research units within university

departments of community medicine. WHO is promoting some large-scale epidemiological research in the EEC such as the MONICA project on the etiology of coronary artery disease using local resources.

A much needed extension of information is the development of record linkage now made feasible by the computerization of medical records. The records to be linked include at least birth data, all hospital admissions, death data and census data. The use of such information on a large scale would increase the knowledge of the natural history of disease and prognosis. It would also help in the prediction and perhaps therefore in the prevention of a number of conditions.

Obstacles

- The most serious obstacle to epidemiological research in the EEC is the lack of trained epidemiologists referred to above.

- Epidemiologists cannot always obtain access to basic health and social data for research purposes. These include access to medical certificates of the cause of death, access to hospital data, and the various morbidity registers, to sickness insurance data and to birth and census data. These are the basic tools of epidemiology which are essential for much epidemiological research.

- There has been much concern about maintaining the confidentiality of medical records. Normally the identity of an individual is only needed by the epidemiologist to avoid duplication of cases. The use of a unique number for every individual as in Denmark could largely overcome this difficulty. In some countries legislation may be needed to ensure necessary access to records for the bona fide research worker.

Epidemiology and Health Policy at National, Regional and Local Level

During the last four decades EEC governments have increasingly accepted responsibility for providing health services on a national scale. The costly advances in diagnosis and treatment, the increasing proportion of the elderly in the population, and rising standards of medical and nursing care have resulted in great increases in the cost of health services. Governments must attempt to contain these expanding costs and are therefore concerned that the services provided should be effective and efficient. All member states recognize that there is a

need for precise information on the incidence and distribution of disease and on the effectiveness of health services. This has led to the development of a new branch of medical research—health services research—to which epidemiology has much to contribute.

The need for competent epidemiologists and medical statisticians in the ministry of health or in close association with it is now accepted in most EEC countries. The German Ministry for Youth, Family and Health, for example, wishes to see epidemiology developed for the further prevention of disease and to increase the effectiveness and efficiency of the health services. In the Netherlands the Ministry of Welfare, Health and Culture has explicitly recognized the need for health services research as a tool for health policy development(1).

Nevertheless, the career prospects for a young doctor wishing to specialize in epidemiology in the EEC are poor. The establishment of Observatoires Régionaux de la Santé in each of the 22 regions of France should increase the demand for doctors trained in epidemiology. In Italy, there are 20 regions each with a regional ministry of health which has, or will have, an epidemiological unit. In all the EEC countries, there is a need for an enlarged cadre of trained epidemiologists to work at regional level.

Their work consists of, or will consist of:

- the ascertainment of the state of health of the population in their region, identification of inequalities in the health of populations within the region and the reasons for those inequalities;
- the ascertainment of the effectiveness and efficiency of health services in the region and the identification of needs to be satisfied in the development of those services;
- giving advice to regional health authorities on ways in which health and health services in the region can be improved.

Communications

One way to accelerate the development of epidemiology in the EEC is to increase communications between the epidemiologists of member states. The International Epidemiological Association (IEA) has done much to promote epidemiology in the EEC through its ten international scientific meetings, six of which have been held in Europe and it is well represented in the EEC.

International meetings of epidemiologists are also

organized by other groups in the EEC and neighboring countries, for example, L'Association des Epidemiologistes de la Langue Française (ADELF-France, Belgium, etc.), The All-Ireland Social Medicine Meetings (Northern Ireland and the Irish Republic), The Anglo-French Meetings and the Nordic Association of Social Medicine.

There are national professional scientific associations in most of the EEC countries to which epidemiologists belong but only a few are devoted exclusively or even largely to epidemiology.

In most of the EEC countries there is at least one journal of public health or social medicine but few are devoted mainly to epidemiology.

Only a few general textbooks of epidemiology were available in EEC languages other than English in 1984. It is important for the development of epidemiology that there should be more than one good textbook in the language of that country using the national and regional data of the country. Descriptions of the health and health services of the country concerned will be of much greater interest to the undergraduate and postgraduate student than those from elsewhere.

It has long been recognized that visits to foreign centers of excellence form an important part of the training of specialists. This is particularly important in a relatively new field such as epidemiology where local opportunities for postgraduate training may be limited. WHO has provided fellowships to enable prospective epidemiologists to spend some months or longer in established centers overseas. The Rockefeller and other foundations have also played an important part in making such visits possible. Visits may vary in duration from six months to a year for the young epidemiologist who needs training and practice or may be quite short, a few days to a few weeks for the established epidemiologist who wishes to acquire a new technique or to become acquainted with current thinking and research methods in a particular field.

At present there are too few available fellowships within the EEC to enable postgraduates to obtain training overseas.

An EEC Center for Epidemiology

The countries of the EEC have similar health problems. Progress towards their solution might be hastened if information were pooled and comparisons made of morbidity and mortality rates in the different countries. Member states adhere to certain international conventions such as the use of the

International Medical Certificate of Cause of Death and the *International Classification of Diseases* and WHO publishes limited mortality data. Studies of the comparability of mortality data between countries have shown that such comparisons are possible (2,3), but more needs to be done to standardize diagnostic terms and to make reliable international and interregional comparisons. For this to succeed epidemiologists must be involved.

Consideration should be given to setting up an epidemiological and health statistics unit within the EEC which would publish reports on health and health services covering the whole Community.

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(Source: John Pemberton, Department of Community Medicine, The University of Sheffield Medical School, Sheffield, UK.

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Editorial Comment

This paper is an abbreviated version of a report on "Upgrading in epidemiology," prepared at the request of a committee of the Commission of the European Communities. To prepare it the author visited all the countries of the EEC except Luxembourg; he thus talked to 73 epidemiologists in nine countries and an additional 21 wrote to him. The paper describes some main features and some of the obstacles in the organization of undergraduate and postgraduate education, and research in epidemiology in the EEC, as well as the application of epidemiological knowledge at national, regional and local level, and the communications between epidemiologists.

It is reprinted here to show how strikingly similar the findings and conclusions concerning the practice of epidemiology in Europe are to those reached in regard to the countries of Latin America and the

Caribbean at the Seminar on the Uses and Perspectives on Epidemiology, held in Buenos Aires, November 7-10, 1983 (see also *Epidemiological Bulletin*, Vol. 5, No. 1, 1984).

Letter to the Editor

December 12, 1986

Recent reports of 12 confirmed cases of acquired immunodeficiency syndrome (AIDS) in Costa Rica have generated interest in the extent of spread of human T-lymphotropic virus type III/LAV (HTLV-III) in Latin America (1). To date, all cases of AIDS in Costa Rica have occurred in members of previously identified, high-risk groups, chiefly hemophiliacs. To examine the possibility of heterosexual transmission in Costa Rica, we utilized sera collected in a population-based case-control study of cervical cancer, conducted by the Costa Rican Demographic Association and other institutions. Eligible cases consisted of all women 25-59 years of age with invasive or *in situ* (CIS) cervical cancer diagnosed between January 1982 and March 1984. Controls constituted a national sample of women 25-59 years of age and were selected in a household survey based on the 1984 census sampling frame.

Between September 1984 and January 1985, trained interviewers administered to both cases and controls a standard questionnaire on reproductive and sexual risk factors. During the survey, sera were collected from 765 controls, 183 invasive cervical cancer cases, and 492 CIS cases. We decided to test for HIV in two phases: initial testing of women at high risk of sexually transmitted disease, followed by complete testing of all sera, if any positives were

detected in the initial phase. We selected 81 women in the control group who had either a history of four or more sexual partners during their life, or a positive serological test for syphilis by MHA-TP. We also tested sera from 15 CIS cases and 5 invasive cases who had a history of 10 or more sex partners during the woman's lifetime. Of these sera, only three were weakly reactive for HTLV-III/LAV antibody by the ELISA test (Abbott Laboratories, North Chicago, Illinois). These three were Western Blot negative (2) and therefore are probably false-positives.

Since HIV infection was not confirmed in any of these 101 women at high risk of acquiring sexually transmitted disease, further testing was abandoned. We conclude that HIV infection in the general population of Costa Rica is rare.

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Rica. A relatively simple study design utilizing previously collected sera and appropriate control groups served for a rapid determination that the disease was not as widespread as assumed during the early stage of the epidemic. Similar studies using small samples of selected population groups with varying levels of risk, such as pregnant women and hospitalized patients as well as prostitutes, intravenous drug addicts and homosexual/bisexual men, often serve to establish the magnitude of a particular infectious disease problem and contribute to understanding the mechanisms of transmission. Many countries in the Americas have initiated such studies.

The Global WHO Special Program on AIDS emphasizes the need for rapid initial assessment through specific seroprevalence studies as a first step in the development of the national program for the prevention and control of AIDS. The Pan American Health Organization/WHO Special Program on AIDS is prepared to assist countries with similar initial assessments.

Editor's Response

Although the data reported in the letter to the editor regarding the spread of AIDS in Costa Rica are from a study carried out between 1982 and 1984, they are presented here as an example of the type of rapid assessment which was carried out to determine the extent of the initial epidemic of AIDS and human immunodeficiency virus infection (HIV, formerly referred to as HTLV-III/LAV) in Costa

To our Readers

We regret the delays experienced in publication of recent issues of the *Epidemiological Bulletin* which have been largely due to logistic problems. In order to bring the publication up to date, Volume 8 will consist of a total of only three issues; we trust this will facilitate our bringing the *Bulletin* to you in a more timely manner.

Diseases Subject to the International Health Regulations

Cholera, yellow fever, and plague cases and deaths reported in the Region of the Americas up to 30 June 1987.

Country and administrative subdivision	Cholera cases	Yellow fever		Plague cases
		Cases	Deaths	
BOLIVIA	-	15	11	-
La Paz	-	15	11	-
BRAZIL	-	5	4	3
Bahia	-	-	-	3
Goiás	-	5	4	-
COLOMBIA	-	2	2	-
Santander	-	2	2	-
PERU	-	112	108	-
Ayacucho	-	14	14	-
Cuzco	-	14	14	-
Huánuco	-	29	29	-
Junín	-	21	19	-
Madre de Dios	-	15	15	-
Pasco	-	1	1	-
San Martín	-	16	14	-
Ucayali	-	2	2	-
UNITED STATES OF AMERICA	1	-	-	6
Arizona	-	-	-	1
Colorado	-	-	-	1
Idaho	-	-	-	1 ^a
Louisiana	1	-	-	-
New Mexico	-	-	-	3 ^b

^aSuspected case.

^bIncludes two suspected cases.



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