

Pan American Health Organization

World Health Organization

XXIX MEETING OF THE ADVISORY COMMITTEE ON HEALTH RESEARCH

Washington, D.C., 2-5 August 1993

ACHR/29/93.16

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REPORT TO THE DIRECTOR

**PAHO Headquarters, Washington, D.C.
2-5 August 1993**

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XXIX MEETING OF THE ADVISORY COMMITTEE ON HEALTH RESEARCH

Washington, D.C., 2-5 August 1993

ACHR 29/93.1

Original: English/Spanish

PROGRAM

Monday, 2 August

09:00 - 09:45 **INAUGURAL SESSION**

Address by the Chairman of the PAHO/WHO
Advisory Committee on Health Research
Dr. César Milstein

Address by the Chairman of the WHO Global
Advisory Committee on Health Research
Prof. M. Gabr

Address by the PAHO/WHO Director
Dr. Carlyle Guerra de Macedo

09:45 - 10:30 Report of the Global ACHR Activities
Prof. M. Gabr

10:30 - 10:45 Recess

10:45 - 12:00 Presentation and discussion of the Agenda
Dr. Alberto Pellegrini

Doc. No.

Monday, 2 August (cont.)

12:00 - 12:30	Lunch recess	
13:30 - 15:00	Regional System of Vaccines for Latin America and the Caribbean (SIREVA) - Progress Report. Dr. Akira Homma	ACHR 29/93.6
15:00 - 15:30	Recess	
15:30 - 17:00	Bases for the Formulation of Science and Technology Policies in the Health Field in Latin America Dr. Jaime Lavados	ACHR 29/93.5

Tuesday, 3 August

09:00 - 10:30	Research Project Evaluation in the Health Field Dr. Hebe Vessuri	ACHR 29/93.7
10:30 - 11:00	Recess	
11:00 - 12:00	Editorial Procedures for Evaluating Articles to be published in Health Sciences Journals. Ms. Regina Celia Figuereido Castro	ACHR 29/93.8
12:00 - 14:00	Lunch Recess	

Doc. No.

Tuesday 3 August (cont.)

14:00 - 15:30	Research Activities of the PAHO Communicable Diseases Program (89-92) Dr. Renato Guzmão	ACHR 29/93.9
15:30 - 16:00	Recess	
16:00 - 17:00	Research on AIDS in Latin America and the Caribbean Dra. Mercedes Weissenbacher	ACHR 29/93.10

Wednesday, 4 August

09:00 - 10:30	Research Activity of the PAHO Pan American Centers Dr. Rafael Flores	ACHR 29/93.14
10:30 - 11:00	Recess	
11:00 - 12:00	Discussion	
12:00 - 14:00	Lunch Recess	
14:00 - 15:30	The Impact of the PAHO Grants Program Dr. Alberto Pellegrini Mrs. Laura Nervi	ACHR 29/93.12
15:30 - 16:00	Recess	
16:00 - 17:00	Discussion	

Doc. No.

Thursday, 5 August

09:00 - 11:00	Report of PAHO Activities in the Field of Biotechnology Dra. Elsa Segura	ACHR 29/93.13
11:00 - 12:00	Evaluation of the Fellowships Program Dr. Charles Godue Dr. Maria Isabel Rodriguez	n/a
12:00 - 13:30	Lunch recess	
13:30 - 15:00	Presentation and discussion of the Final Report	ACHR 29/93.16
15:00 - 15:30	CLOSING SESSION	

Address by the Chairman of the Global
Advisory Committee on Health Research
Prof. M. Gabr

Address by the PAHO/WHO Director
Dr. Carlyle Guerra de Macedo

Address by the Chairman of PAHO/WHO
Advisory Committee on Health Research
Dr. César Milstein

REPORT TO THE DIRECTOR

I. OPENING SESSION

Addresses by Dr. Gabr, Chairman of the Global Advisory Committee on Health Research, Dr. César Milstein, Chairman of ACHR/PAHO, and Dr. Carlyle Guerra de Macedo, Director of PAHO/WHO (See Annex I).

II. REPORT OF THE ADVISORY COMMITTEE ON HEALTH RESEARCH

Dr. Gabr, Chairman of the Committee, presented the report of the Global ACHR.

DISCUSSIONS AND/OR RECOMMENDATIONS:

Dr. Gabr's presentation generated the following points of discussion:

- The Committee recognized the importance of the work that is being carried out by the Global Advisory Committee and its respective subcommittees and working groups, particularly the initiative to update the strategies for the development of health research.

- The idea was reinforced that WHO and PAHO need to assume a more active role in supporting the countries in the establishment of research policies and strategies. However, it has been emphasized that it is not enough to have well defined policies and priorities if there are no financial resources available in order to implement them. Suggestions were made for obtaining resources for research, such as:

- The Organization should work together with countries and funding agencies such as the World Bank to ensure that investment proposals include a research component. This component should consist of research that is directly related to the project, so that it has better scientific justification, and evaluations of these projects that should be carried out by outside consultants;

- The Organization should increase its own resources for research, but even more importantly, it should be an advocate for various international agencies, cooperative agencies of developed countries and governmental agencies in the

countries of the Region (not limiting itself to the Ministries of Health), so that resources are allocated for research. Without this work of advocacy, the impact of the Organization, with its own resources, will be not very significant;

- The Organization, the researchers of the Region and other actors interested in scientific activity should address the issue of the research funding as a subject of study. An understanding of the economic forces in that area would make the efforts to increase resources more fruitful;

- Another subject proposed, as a result of Dr. Gabr's presentation, was the importance of the globalization of problems and the relative scarcity of national resources which cause the countries to join together to confront their problems, thus providing more opportunities for the involvement of coordinating and cooperating agencies such as PAHO;

- Finally, there was discussion of the importance of the circulation of scientific information to the strategy of research promotion, not only through networks and publications, but also through the promotion of country/institutional exchanges among scientists.

III. PRESENTATION OF THE AGENDA

Dr. Alberto Pellegrini, Coordinator of the Program of Research and Technological Development in Health of PAHO/WHO, presented the agenda items, justifying the inclusion of each of them and pointing out the recommendations and guidelines that are expected from the Committee.

He also referred to the recommendations made during the last meeting of the ACHR in August 1991 and presented the actions taken by the Secretariat in response to them, as well as the difficulties encountered in implementing some of them. He pointed out the problems involved in implementing the recommendation on research fellowships. He indicated that the decentralization of the current fellowship program is a political and administrative fact which is practically impossible to reverse, even partially, and that the solution would be the creation of a new program of fellowships specifically for research at the doctoral or postdoctoral level. Since it would be difficult to finance this program with the Organization's own resources, he reported that a proposal is being prepared in conjunction with the Program of Human Resources Development in order to obtain extrabudgetary resources.

In response to Dr. Pellegrini's presentation, the members of the Committee recognized the steps taken with regard to several of the recommendations made at the previous meeting, but expressed dissatisfaction with the failure to implement those relative to the creation of the fellowship program.

There was criticism of the way in which the current fellowship program is being administered in some countries and additional information was requested on the evaluation of this program, an item that should be included in the agenda of this meeting. It was considered important to reiterate the recommendation that part of the current PAHO fellowships be devoted to research, in addition to the creation of a new specific program of research fellowships at the doctoral or postdoctoral level. There was also a recommendation to include in the agenda for this meeting a discussion on the problem of the salaries of researchers in Latin America and the Caribbean.

IV. REGIONAL SYSTEM OF VACCINES FOR LATIN AMERICA AND THE CARIBBEAN (SIREVA) - PROGRESS REPORT

The report was presented by Dr. Akira Homma, Chief of the PAHO/WHO project on Vaccine Research and Development.

In the last meeting of the ACHR (August 1991), a presentation was made of SIREVA, together with the results of the respective feasibility study. SIREVA is a technical cooperation project organized by the countries of the Region that combines the goal of developing new vaccines with the strengthening of the scientific and technical infrastructure in this field. Its activities range from epidemiological studies of prevalence of subtypes of microorganisms up through field tests of new vaccines, including applied research, development, production at the pilot project level, and quality control. During the present meeting Dr. Homma provided an account of the principal activities carried out over the past two years in implementing the System.

The efforts made to expand the support basis of the initiative represents an important line of action. Contacts were established at the technical and scientific level and some activities were carried out in collaboration with various institutions such as the Dutch-Nordic Consortium; the Food and Drug Administration (FDA) and the National Institutes of Health (NIH) of the United States, particularly through Drs. Carl Frasch and John Robbins; and Johns Hopkins University and Dr. Nath Bhamaraprati of Mahidol University, Thailand, for the development of the dengue vaccine. SIREVA was presented in several scientific meetings at the international level, such as the various meetings organized by the Children's Vaccination Initiative

(CVI), in which its importance for the Region has been recognized on the part of the world scientific community. With respect to financial support, although several contacts have been established with various sources of financing, difficulties still persist in the acquisition of resources, particularly with regard to medium- and long-term commitments. Despite these difficulties, the Canadian International Development Agency (CIDA) is collaborating in a study of prevalence and epidemiological surveillance of S. pneumoniae, with a tentative duration of two years. In addition, the Swedish International Development Agency (SIDA) is providing support for Phase II and III field trials of a new cholera vaccine, and the Ministry of Health of Brazil has decided to fund the development of a vaccine for N. meningitidis, serogroup B. As far as political support is concerned, several authorities have expressed their interest and support for the initiative, and Mexico and Brazil have taken decisive steps toward the installation of structures to coordinate the System--the CENVACs of Cuernavaca and Rio de Janeiro.

With respect to activities already developed in the area of SIREVA during the last two years, Dr. Homma drew attention to:

- Preparation of the Master Plans for the development of vaccines to combat N. meningitidis (serotype B), S. pneumoniae, S. tify, and dengue virus, as well as the establishment of the respective steering committees. The Master Plans were prepared by recognized experts, specifically contracted for this purpose, and include a review of the epidemiological situation, the state of the art development of each of the vaccines, the steps necessary for making progress in developing the vaccines, and the potential in the Region for participating in this effort. The steering committees, made up of scientists of international prestige, mostly from the United States and Europe, met to approve the respective Master Plans. Dr. Homma made a summary of the principal aspects of each of the Plans.

- Installation of the CENVACs. CENVACs are the coordinating structures of the System, whose principal function is to define the role of participating institutions in organizing the projects. They are also in charge of analyzing the installed capacity in the Region, identifying the needs for training human resources, providing technical advisory services, ensuring collaboration among research and development (R&D) institutions, and promoting integration between these institutions and government institutions. The CENVAC in Cuernavaca, Mexico is fully operational and, through an agreement with the Mexican Foundation for Health, PAHO will pay the salaries of the Director and Technical Coordinator as well as other operating expenses during the Center's first year of activities. The Center in Rio de Janeiro, installed in FIOCRUZ, is presently in the organizational phase. The first joint meeting of both CENVACs was held in São Paulo, Brazil, on 6-8 June 1993, when the organization

and functions of the CENVACs were discussed, in addition to development activities of SIREVA and specific projects such as the epidemiological study of S. pneumoniae and the cholera vaccine field trials.

- The Canadian International Development Agency (CIDA) has transferred nearly Can\$1.5 million to PAHO/WHO for a study of the prevalence and epidemiological surveillance of S. pneumoniae with a view to develop a multivalent pneumococcal capsular polysaccharide-protein conjugated vaccine. The study has already been fully designed, the protocol has been approved by an expert committee, visits to the research groups of the six participating countries have taken place, and the data should begin to be collected in August 1993.

- Field tests of a new cholera vaccine are being developed with support provided by a contribution of approximately US\$1.2 million dollars from Sweden. The Phase II study conducted in Barranquilla, Colombia has concluded, and possible sites are currently being identified for the development of Phase III, whose protocol has already been prepared.

- The Task Force on Strategic Plans of the Child Vaccine Initiative (CVI) has decided to strengthen DPT vaccine manufacturing capacity, inasmuch as this vaccine is to be the basis for future combination vaccines. Given the existence of SIREVA, the Standing Committee of the CVI asked the Director of PAHO to organize a meeting to prepare a Regional Plan for the production of improved DPT vaccines and DPT-combination vaccines in the Region of the Americas. This meeting will be held in September at PAHO headquarters with the participation of representatives of the 11 laboratories producing DPT vaccines in the Region, representatives of the private vaccine sector at the world level, representatives of financing agencies, researchers, and staff members of the CVI. PAHO has prepared a review of the situation of DPT vaccine production in the Region that identifies the support needed for its strengthening.

- Finally, still in the area of SIREVA, Dr. Homma proposed the initiative, already in progress, to set up a quality control laboratory network of vaccines utilized in the Region, particularly those included in the Expanded Program on Immunization (EPI). In May 1991 a meeting was held with the representatives of several quality control laboratories in the Region and a project was prepared to organize the network, which has been presented to several funding agencies for support.

DISCUSSION AND/OR RECOMMENDATIONS:

The presentation of Dr. Homma gave rise to the following observations:

- The Committee congratulated the Organization for the timeliness of the initiative and for the progress made in the implementation of the System. The following aspects were singled out as being especially noteworthy: the timely foresight of the application of biotechnology advances in vaccine development; the emphasis on strengthening quality control; the promotion of cooperation between scientists and institutions of the Region; the integrated approach of all stages of vaccine development; the selection of conjugate technology as a basis for the innovations;

- There were comments on the priorities adopted, recognizing that, although investments in water and sewage systems contribute a more definitive solution for water-borne diseases, in addition to the improvement in the quality of life, the development of vaccines such as those for cholera and typhoid fever respond to an urgent need and have a very low cost/effectiveness ratio;

- It was recommended to continue with new studies for the evaluation of already existing vaccines and those developed in the region, such as those for meningitis B and hepatitis B;

- It was recognized that a greater clarity of purposes and objectives of the Program, as well as concrete projects such as those presented today, should help obtain funds from both cooperative/collaborative agencies and the member countries themselves;

- The progress of EPI in the Region was recognized, despite the need for overcoming some deficits of coverage that still exist, which will be done gradually through the strengthening of research and services. It was concluded that both SIREVA and EPI deserve to receive full support and priority from the Organization.

V. BASES FOR THE FORMULATION OF SCIENCE AND TECHNOLOGY POLICIES IN THE HEALTH FIELD IN LATIN AMERICA

During the last meeting of the ACHR, in August 1991, a situational analysis of health research was made in Latin America based on a survey carried out in six countries of the Region. On that occasion the ACHR recommended that an ad hoc subcommittee be formed to explore the preparation of a document on science and technology policies to assist in solving the problems identified. Dr. Jaime Lavados,

a member of the ACHR, was assigned the task of presiding over the subcommittee, and during the present meeting he made a presentation of the work it had performed.

Despite the efforts carried out by the countries of Latin America--particularly in the last three decades--to create a scientific and technical infrastructure in several sectors, it has never been possible to set up a true science and technology system that would permit the free flow of knowledge and technologies among diverse entities in the areas of research, development, and production of goods and services. The state is practically the only entity responsible for the execution, financing, and demand with regard to scientific production. This dependency makes the system quite vulnerable, and indeed, particularly since the mid-1980s, with the reduction in public spending, the survival of the scientific and technical infrastructure that was established in previous years has been threatened, and this may undermine the future possibilities of the countries of Latin America from entering a period of renewed development.

Given the importance of preserving the initial infrastructure already constructed, and recognizing the prominent role that science and technology should play in improving the Region's socioeconomic situation, debate on the course of policies in this sector is more necessary and urgent than ever. The document prepared by the Ad Hoc Subcommittee seeks to contribute to this debate.

The definition of science and technology policies cannot ignore the major contextual changes that have taken place in recent years, both at the global level and in the Region. The document outlines the principal elements of this new context. Among them, at the global level, it points out the phenomena of the globalization and "dematerialization" of production, as well as the changes that have taken place in the political context in the aftermath of the Cold War. At the regional level, new models of development based on the market economy are evolving, combined with a reformulation of the role of the state and a strengthening of democratic structures. More specifically, with respect to the health situation, and despite the degenerating socio-economic situation, an aging of the population may be discerned, together with a reduction in the prevalence of infectious-contagious diseases in mortality profiles and a growth in the relative importance of chronic degenerative diseases and accidents. However, despite this general trend toward "modernization" of the demographic and mortality structures, certain elements that point to a deterioration of living conditions are encroaching upon this trend, such as the epidemic of cholera, the increase in deaths caused by violence, and the stable or increasing differentials in the morbidity and mortality profiles of different social groups. The organization of health care delivery systems is also characterized by significant changes, such as the accelerated processes of decentralization and privatization of health services.

With regard to the situation of science and technology in the Region, the document also outlines certain general features, pointing out the gaps in the flow of production, distribution, and utilization of knowledge, the exaggerated dependency on the state, the increase in the brain drain, and the limitations and concentration of scientific production. However, this general picture appears to indicate new phenomena in some countries of the Region, such as the diversification of financing sources, the growth of university-business consortiums, and the proliferation of nongovernmental organizations, all of whose magnitude it is difficult to evaluate given the rapidity of the transformations, the heterogeneous situations in the countries, and the fragility of the information systems that make it possible to monitor changes of this nature.

After a presentation of the general features of the context, the document devotes itself more specifically to science and technology policies in the health field, beginning with an enumeration of the principal conceptual bases that should underlie these policies. Science and technology in the health field long ago stopped being restricted to research basically carried out by physicians in health institutions. The demedicalization of health research has been accompanied by the expansion of its universe of subjects and problems and the diversification of disciplines, approaches, types of research, professions of the researchers, and the institutional settings to conduct research, among others. In the same manner, the processes of dissemination and utilization of knowledge have also been subject to greater complexity. These transformations in the field require new bases for the formulation of policies to guide their development, such as:

- Regional integration, since the difficulties existing for the production and development of the knowledge needed can only be overcome by a few isolated countries and cooperation among all of them is consequently required;

- Integration between production and utilization of knowledge and technologies, which implies the development of an institutional organization that will make it possible for the progress achieved through the research and development to circulate freely to the entities that are in a position to apply them for the social benefit; and finally,

- Elimination of the false dichotomies that were dominating the debate on science and technology policies, such as: prioritization versus lack of prioritization; development of indigenous knowledge versus imported knowledge; prioritization of basic, applied, or development research; and development of science and technology based on basic research or development research (push versus pull)--all of which were

revealed to be false in the face of recent advances of science and technology and the experiences of the developed countries.

The document then presents the principal components of a science and technology policy for the health field. First of all, it proposes the need for a formulation of priorities--that is, formulation of the principal problems related to the health field that require new knowledge for their solutions and which, as a result, should be the focus of research efforts and resources. The task of identifying these priorities is eminently social in nature and involves various agents with varied interests and perceptions. This participatory process notwithstanding, there is a substantial technical dimension to the formulation of priorities that, in the matter of health, should be based on the one hand on the characteristics assumed by the health/disease process in a specific society and, on the other, on development trends in science itself. The problems located at the crossroads between those generated by the health/disease process and those generated by developing the most dynamic areas of science are precisely the problems which should be given priority in research.

The document then refers to certain elements in the process of defining priorities, emphasizing, however, that a science and technology policy for the health field must not be confused with a list of priorities. In order for these priorities to be implemented, a number of other considerations related to the dynamics of scientific activity should be taken into account. Elements such as the expansion and diversification of funding sources and mechanisms, the strengthening of science and technology management, human resource development for research, and the strengthening of scientific and technical information systems are mentioned, and the principal characteristics they should assume in a science and technology policy that seeks to respond to new challenges are outlined.

Finally, the document presented by Dr. Lavados concludes by reiterating the need to incorporate new agents in scientific endeavors. In the recent past, this activity was for all practical purposes limited to researchers and the state, which has contributed to its isolation and threatened its social legitimacy. The shrinking role of the state as the principal force behind development, the democratic movement, the strengthening of participatory mechanisms, and the demedicalization of health research are some of the forces that have contributed to the participation of new agents, which is not a foregone conclusion; rather, their involvement is the result of the actual process of carrying out this activity. In the case of science and technology for health, in addition to the participation of new agents, changes are being proposed in the behavior of traditional agents, such as the state, researchers, health professionals, and others accustomed to relations of power that are being overcome. The state, without renouncing its important role as financing agent and promoter of

scientific activity, should assume the responsibility of promoting forums in which a variety of interests can be expressed and the courses to be followed can be defined, thereby making it possible for science and technology in the health field to be consolidated in the form of public policies.

DISCUSSION AND/OR RECOMMENDATIONS:

The following observations were made regarding Dr. Lavados' presentation:

- The document presents important bases, principles and guidelines for the definition of policies, and it includes innovative approaches. The next step should be the application of these guidelines to a concrete reality to examine the establishment of the policies themselves. In this regard, it was recommended that the Ad Hoc Sub-Committee be responsible for promoting this new phase and continue to enhance and monitor the changes in this field;

- Despite the recognition of the importance of the document, it was recommended that some possibly ambiguous aspects be dealt with in greater depth and enhanced. One of these is the role of the State. While it is recognized that the State should withdraw from certain areas where its involvement is not appropriate, it should concentrate its resources on areas such as science and technology, not necessarily as the direct executing agency, but in a substantive supporting role;

- The Committee pointed out the importance of recognizing difficulties such as the scarcity of resources, the privatization of knowledge and consequent barriers for its access, etc., but added that we must be willing to face them pragmatically. Measures such as a program to recycle obsolete equipment in developed countries, which can be very beneficial in the developing countries, was cited as an example. Another example would be the reinforcement of the participation of the Region's researchers in electronic networks to exchange information;

- The subject of research funding was discussed once more, pointing out the great opportunity provided by the World Bank's recognition of the need for investment in health in order to promote development. This opportunity represents the convergence of the agenda of the health sector with that of the economic sector. A clearer understanding of the burden that disease places on economic development efforts will help to obtain resources for health and health research, provided that it is coupled with sufficient advocacy activities;

- Although the objective of the document is not to formulate policies but rather to provide bases for their formulation by the countries, the Committee drew attention to certain areas and types of research that should be considered with greater care, such as the varying realities of the countries. Among them are: the importance of research applied to decision-making; the importance of "new" subjects derived from epidemiological transition, such as accidents and violent acts; the importance of studying and monitoring the accelerated changes taking place in epidemiological profiles; and the evaluation of the impact and costs and benefits of interventions;

- It was recommended that the Subcommittee, as an exercise, apply the document guidelines by summoning the various actors involved in scientific activity in the health field, in a specific country, in order to identify points of consensus on the courses to be followed in this area that are based on the varied and legitimate interests of all. The committee should also continue to examine the topic, including promoting studies on it, such as, for example, an analysis of how the policies are formulated and how scientific activity is organized in countries of the Region.

VI. EVALUATION OF RESEARCH PROJECTS WITH SPECIAL REFERENCE TO THE BIOMEDICAL, CLINICAL, AND HEALTH FIELDS

This topic was presented by Dr. Hebe Vessuri, of the Science Studies Department of the Venezuelan Scientific Research Institute (IVIC).

Dr. Vessuri began her presentation by referring to the changes taking place in the institutional context of research funding in the Region and drawing attention to the fact that a restructuring process of research systems is under way in most of the countries, with a conviction to ensure that research achievements will increase the competitive nature of national economies. This process consequently places greater emphasis on selectivity and concentration, the first, by focusing on those areas in which the country has better possibilities for cultivating knowledge, and the second by supporting groups or teams with better response capacity.

This situation emphasizes the evaluation of scientific activity, and should take its intrinsic and extrinsic values into account. Intrinsic value lies in the ideal of the search for truth and the acquisition of knowledge, while extrinsic value lies in the services that research institutions provide to national development needs. Extrinsic value should be given high priority in the less developed countries, together with the need for promoting endogenous capacities. Intrinsic value in these countries is usually associated with the concept of internationalism; that is, internationalism

normally appears as the standard for measuring the intrinsic value of science. Despite the recent interest in the subject, a paradox has been detected in that evaluation activities have made less headway precisely in the countries in which the scarcity of material and human resources is the greatest.

An important consideration in this context is the definition of priorities. This is a political process, since priorities vary in accordance with who establishes them and for what population groups, what voices are listened to, what visions prevail and, as a result, what interests are given special importance in the health field.

With regard to evaluation criteria, the use of conventional performance indicators, such as the number of published articles and citations associated with comparisons at the international level, are not always sufficient to evaluate research activity in the less developed countries and to formulate policies. What is important is the development of national data bases that systematically collect the scientific production of a given country, which should be evaluated through a combination of national indicators related to specific economic and social development objectives and global indicators that make it possible to arrive at comparative parameters of the qualitative levels attained.

Peer review, a mechanism widely utilized by most of the countries, has recently been subjected to increased criticism of the different ways in which it is taking place. In this respect the "opacity" of the process may be pointed out, strongly imbued with the values and interests of the participants. It seems that peer review produces more reliable results in relatively closed scientific fields and research specialties, where there is a high degree of consensus and where the intrinsic objectives of research alone are deemed important. In areas where there is diversity of thought, or where interdisciplinary problems exist, these mechanisms leave much to be desired, often limiting the development of innovative approaches.

The problems connected with peer review have been exacerbated in recent years by budgetary restrictions and the increased bureaucratization of science. A common criticism is that funding agencies tend to be oriented toward standards, criteria, and strict regulations that suffocate creativity. The basic scientists have succeeded, at times quite rigidly, in setting the general review standards used by research funding agencies for all areas of research, not just basic research. The problem is that when the conventional protective shield of excellence is abandoned, the doors may be opened to opportunism and incompetency. The need is more clearly manifest in the less developed countries for imaginative and heterodox approaches to overcome difficulties, which imposes the search for evaluation criteria and mechanisms that will permit a balance between safety and creativity.

Several possibilities exist for enhancing peer review, among them careful selection of the experts in order to avoid personal and "paradigmatic" biases, an increase in the number of reviewers, the use of standard rating forms, and the preservation of anonymity. When scientific groups at the national level are too small, a commonly adopted solution is to submit projects to the international scientific community, although foreign experts usually lack information on the context of the research activity and function better in a limited number of specialized fields. A combination of all these possibilities can improve the use of peer review in making decisions on project quality.

Another important element is the need to provide constructive criticism of rejected funding requests. In cases where research needs to be expanded and enhanced, this component of project review should be aimed at providing the applicant with the information he needs and mitigate discouragement. Various surveys carried out both in developed countries and in the countries of the Region revealed the candidates' disappointment with the feedback received from funding agencies when their projects are rejected.

In the health area, in public health and in biomedical and clinical research--perhaps more in the latter two--a tension may be observed between the demands of politicians for greater regulation, accountability, and response capacity of science on the one hand, and the demands of scientists concerning their freedom and autonomy on the other. In principle, this is a healthy tension that does not need to be defused since it maintains a balance between freedom and responsibility in science. A common criticism on the part of government is that peer review removes decision-making power from the hands of elected officials and their subordinates, placing it in the hands of people who are not answerable to the public.

Alternatives to peer review have been proposed, particularly in the United States, such as the allocation of research funds in the form of block, lump-sum grants, ongoing support for individuals with good research histories, or simply placing projects considered to be technically sound in a lottery, since resources are available usually only to 30% of the projects submitted.

Lastly, Dr. Vessuri referred to the general contextual conditions that should be changed in order to improve the quality of research and enhance specific evaluation mechanisms. In this regard, she referred to the importance of the institutional site of the research activity. Just as flexible administrative and decentralized mechanisms favor the process of research, highly bureaucratized and centralized institutions impede this process, discourage researchers, and diminish productivity.

The quality of science should be sustained by a solid, three-point base made up of individual scientists, organized scientific activity, and national and international science policy. Each of these components is a dependent variable in the quality equation. The respective actors--in particular the scientific community--should accept the integration of other social patterns into their own values and contribute to the efforts to raise the sophistication of society as a whole. Indeed, in the long run, wise decisions concerning the quality and direction of science will only be possible when society as a whole is able to participate in an informed manner.

DISCUSSION AND/OR RECOMMENDATIONS:

Dr. Vessuri's presentation elicited the following comments by the Committee:

- The work was highly valued and Dr. Vessuri was encouraged to continue collecting and analyzing data on the evaluation processes at the level of the Science and Technology Councils (STC). Among the various points discussed in the paper, special mention was made of those referring to the reinterpretations made in the Region of the evaluation criteria employed at the international level, such as the application of too narrow criteria that do not provide room for innovation, exaggerated formalism without the experience required to justify it, and the "manipulation" of the evaluation process on the part of the managers through the selection of reviewers and other means;

- Also, the importance of strengthening and enhancing the mechanism of peer review was pointed out, for example, through the increased use of international evaluators with some knowledge of the regional reality. Peer review, despite its imperfections, allows room for autonomy in science, which in the Region is particularly important in view of the generally political criteria of the managers of S&T and their rapid turnover;

- The importance of clearly defining criteria was also mentioned, the absence of which may lead to extreme proposals, such as the proposal for a project lottery. It is recognized that these criteria may vary according to the interests of the various funding sources. A balance must be sought between traditional criteria, such as the number of articles published by the principal researcher versus the usefulness of the research proposed, between the certainty of a known methodology versus the risk of innovation, and between the support for a few groups of excellence versus increasing the critical mass of researchers;

- Other problems mentioned were the differentiated criteria that are usually employed for directed projects, which may give rise to a sacrifice of quality. Given the scarcity of resources, the objectives of many projects are mutilated, which limits their impact and discourages researchers. The "diversion" of projects to less rigorous agencies or entities is an expedient frequently utilized that penalizes the search for quality improvement;

- Finally, with respect to the role of PAHO in this area, it was recommended that further exploration of the mechanisms employed in the Region be continued and cooperation be provided to enhance them. However, despite the importance of enhancing these mechanisms, it was considered more important for the Organization to contribute to the creation of evaluation criteria in the Region.

VII. EDITORIAL PROCEDURES FOR THE EVALUATION OF ARTICLES FOR PUBLICATION IN LATIN AMERICAN AND CARIBBEAN HEALTH SCIENCE JOURNALS

Dr. Regina Celia Figueiredo Castro, a BIREME official, presented the results of a survey designed to identify the prevailing trends and existing mechanisms to evaluate articles for publication that are employed by the journals indicated in BIREME's LILACS data base.

Before presenting the results of the survey, Dr. Castro made a presentation of the Regional System of Scientific Documentation in Health, coordinated by BIREME, with regard to its objectives, forms of organization, and activities. She also referred to the LILACS data base, which contains all the literature published by Latin American and Caribbean authors in the countries of the Region since 1982. It contains 140,000 records, including theses, books, annals of congresses, etc., in addition to periodic journals. These journals, which already numbered 600 titles, presently number 507 titles, concentrated mainly in six countries that account for 80% of them. The objective of the data base is to collect the scientific production of the Region, which tends to be underrepresented in international data bases.

The survey was carried out by means of a questionnaire mailed to 507 journals. For the purposes of analysis, the journals were divided into two groups: those indicated in MEDLINE (RMDL), Group 1, with 48 titles; and those not indicated in MEDLINE (RNMDL), Group 2, with 459 titles. A total of about 30% of the journals responded to the questionnaire, with a response rate of 27% for the RNMDLs and 50% for the RMDLs.

After a review of the literature on similar studies, Dr. Figueiredo Castro presented the principal findings:

- Journals are, to a large extent, published by scientific associations (mainly the RMDLs), with private organizations predominating over governmental agencies. They frequently have different funding sources: 41.4% have governmental resources, 48.7% receive income from subscriptions, and some publications also receive funds from their own establishment, laboratories, advertisements, etc. Fifty percent of the journals have a circulation of more than 1,500 copies per issue.

- Generally speaking, 53% of the pages are devoted to original articles, 20% to literature reviews, 17% to case studies, and 12% to summaries/briefs and editorial comments. The great majority of the journals are published in the language of the country, with an insignificant number of publications (4.1%) appearing in English. An average of 54.2 manuscripts are submitted for publication each year to a journal, and this figure reaches 84 in the case of the RMDL group.

- Manuscripts are rarely published without previous review, except when they consist of literature reviews or are written by the editor. Originality is the most important criterion for acceptance of a manuscript. Initial evaluation of a manuscript as to whether it merits review is performed mostly by the editor. In most of the journals, subsequent evaluation is performed by members of the editorial board and by external reviewers (mostly by the former in the case of the RNMDL and mainly by external reviewers in the case of the RMDL). The journals employ an average of 31 reviewers a year, a figure that rises to 75.2 in the case of the RMDL. The number of reviewers per manuscript, 2.1, is equivalent to that common in American publications. Around 70% of the manuscripts received are accepted for publication.

- The editorial boards are usually appointed by the editor, and only 7% of the journals include international members on the boards. The members of the boards basically review articles and rarely participate in other functions, normally attributed to the editor, such as the designation of external reviewers. Consultation with the Science Citation Index of 1991 (SCI) confirmed that around 30% of the editorial board members, chosen at random from publications, were cited at least once during the year.

In the case of the RNMDL, external reviewers are usually selected on the basis of personal acquaintance or from a list of reviewers, while in the case of the RMDL group, which uses a larger number of reviewers, the first option is the use of a list of reviewers, followed by personal acquaintance.

In concluding her presentation, Dr. Figueiredo Castro emphasized the importance of continuing this line of study, which can contribute significantly to improve the journals in the Region. She suggested some subjects for new studies, such as the causes of irregular publication of journals and the performance of journals in the same discipline, as a means of avoiding the dispersion of resources. In view of the importance of editor's function with regard to the review and general administration of journals, it is necessary to promote meetings and seminars of editors to discuss common problems. Another important support activity is the formulation of directives and basic procedures for the journals, including forms for the evaluation of articles, standardization of terminology, guidelines on administration and management, financial control, distribution, automated registries of reviewers and evaluations, etc.

DISCUSSION AND/OR RECOMMENDATIONS:

The Committee congratulated Dr. Castro for her work and agreed with the recommendations that she presented on the actions that PAHO should carry out in order to enhance the evaluation mechanisms employed by the journals. With regard to these future actions, reference was made to the studies proposed, among them the evaluation of existing journals in various areas in order to select those meriting support. The use of stricter criteria for the inclusion of journals in the LILACS data base was also mentioned as a means of promoting improvement of the journals and of the data base.

VIII. RESEARCH ACTIVITIES OF PAHO'S COMMUNICABLE DISEASE PROGRAM (1989-1992)

This topic was presented by Dr. Renato Gusmão of the PAHO/WHO Communicable Disease Program (HCT).

The principal objective of HCT is to strengthen the capacity of countries to implement technically feasible, economically viable, and socially acceptable programs to control and prevent communicable diseases.

The cooperation in research provided by HCT necessarily reflects the needs and organizational status of individual prevention and control programs at the country level. Despite the fact that there are known techniques to reduce transmission of diseases targeted by the Program, practical methodologies for implementing control and prevention programs at a realistic cost are still inadequate. This is all the more

serious in consideration of the economic conditions that prevail in the Region, where most of the national governments and the international funding agencies are no longer willing or able to sponsor expensive vertical programs based on the use of chemical products. Reasons for additional concern are the environmental pollution resulting from the use of chemical products and the resistance of vectors to insecticides. These factors have prompted the abandonment of control strategies based on a single method in favor of integrated approaches that incorporate appropriate technologies of environmental management, biological control, health education, and epidemiological stratification in order to make better use of the limited available resources.

The advancement of research which provides a scientific basis for these new, integrated prevention and control approaches is the principal objective of HCT's technical cooperation activities with regard to research. Its strategic orientation and programming are provided by the strategic orientations and program priorities as defined by the Governing Bodies of PAHO/WHO. Among the strategic orientations are: reorganization of the health sector, which proposes the need for research to support decentralization of prevention and control activities, integration with the activities of general health services, and strengthening of the local health services with respect to the management of the diseases included in the Program; targeting high-risk groups, which requires research development based on the concept of epidemiological stratification; the use of mass communication in health, an essential tool for promoting community participation, which is the basis for integrated control of the vector-borne diseases, and the need for operations research that combines mass communication, health education, and integrated biological control of vector-borne diseases; health promotion, which includes inter alia interventions aimed at protecting the environment, improving living conditions, and changing the lifestyles of high-risk population groups, indicating the need for research in order to improve housing and the knowledge, attitudes, and practices of the population; management of knowledge, which is the strategic orientation of cooperation for the collection, analysis, and dissemination of knowledge, in addition to support for its production through assistance in preparing and monitoring research projects; and mobilization of resources, which is a strategy that implies the search for resources among several financial sources for the funding of research. Dr. Gusmão provided a series of research examples being carried out with regard to each one of the strategies mentioned and described the financial resources mobilized in order to support them.

With respect to HCT's program priorities concerning research, Dr. Gusmão described the projects currently in progress and supported by the Program with the vision to generate the knowledge required to eradicate/eliminate certain selected diseases and to fully evolve diagnostic technologies and treatment. He described the

following projects: Aedes/dengue, Chagas' disease, leprosy and other dermatological disorders, malaria, and Argentine hemorrhagic fever.

The funds managed by the Program allocated to research activities (excluding personnel expenditures) for the period 1989-1992 amount to US\$3,461,190, 67% of which consisted of extrabudgetary funds; that is, not part of the regular PAHO/WHO budget. Ninety-one percent of these funds was spent for direct support to projects at the country level.

Finally, Dr. Gusmão noted that despite the epidemiological transition observed in the Region, communicable diseases continue to be major health problems that require various kinds of efforts to combat them, among them, research on new approaches to solve the problems. Given the current financial limitations, a significant increase in resources for these activities cannot be expected. PAHO, in this context of limitations, will continue to emphasize applied research, directed to filling specific gaps in knowledge necessary to improve prevention and control programs, testing of interventions, and the evaluation of forms of treatment and diagnostic tools.

Immediately following the presentation given by Dr. Gusmão, Dr. Briceño-León, a member of the ACHR and Coordinator of the Committee on Small Research Grants for Tropical Disease Research (TDR) for the Region of the Americas, presented a report on the development of this grants program.

The objective is to promote research on the social and economic aspects of the diseases of Tropical Disease Research (TDR). The participating agencies are TDR, PAHO and the Laboratory of Social Sciences of the UCV.

The program is evolving as recognition that research on communicable diseases has made great progress insofar as knowledge of the vectors and parasites is concerned; however, there is a lack of knowledge of people and society, particularly in a time of accelerated change. The program is aimed at young researchers and provides small grants of US\$5,000 per project per year for a maximum of two years.

The reviewing Committee, made up of scientists from the Region, has been meeting twice a year since December 1989, when the Program was initiated. To date, 173 proposals have been received, 60% of which are from researchers between the ages of 25 and 35. Dr. Briceño-León also presented the distribution of proposals by country, subregion, topic, profession of the principal researcher, etc.

So far, 55 projects have been approved and 45 rejected. In addition to methodological quality, the age of the researcher, the country, and the disease are also considered as evaluation criteria. Twenty-two final reports have already been received. The projects gave rise to three publications, two master's theses, and two doctoral dissertations.

The program is entering a new phase, placing greater emphasis on operations research, attention to gender, and the search for new donors. Difficulties are being faced with regard to the achievement of interdisciplinary balance, the improvement of methodological problems, the complications in publishing results, and the relative reluctance to assume risks in supporting innovative proposals.

DISCUSSION AND/OR RECOMMENDATIONS:

The principal points of discussion and the recommendations of the Committee on this subject were the following:

- The Committee drew attention to the decline in resources allocated by HCT for research in 1992, and the fear was expressed that this may represent a trend. Mention was made of the importance of the HCT resources to sensitize the governments and other organizations as to the need for providing funds, and a strong recommendation was made that PAHO funds should be maintained for the promotion of research in this area.

- Recognition was given to the importance of the initiative of the Small Grants Program, particularly in order to assist young researchers and promote social research. In this regard it was recommended that the possibility be considered of extending this initiative to other areas, such as, research on health services.

IX. RESEARCH ON AIDS IN LATIN AMERICA AND THE CARIBBEAN

This topic was presented by Dr. Mercedes Weissenbacher, Chief of the Research Unit of the PAHO/WHO AIDS Program.

The rapidity of the response of biomedical and epidemiological research to the AIDS pandemic throughout the world is unprecedented. Over a period of 12 years' time (1981-1993) the causative agent was isolated and characterized, and methodologies for its diagnosis were developed, the means of transmission of HIV was described, in addition to the factors that influence its infectivity and susceptibility to

the virus, and certain physiopathological aspects of the disease and the natural history of HIV infection. Opportunistic infections were described and the mechanisms for preventing or curing them, specific chemotherapeutic agents and vaccine antigens were developed, which are currently being tested, and social and behavioral considerations were studied to identify behaviors or risk factors conducive to its transmission, as well as strategies for its prevention.

Despite these advances, the AIDS pandemic continues to spread more rapidly in the developing countries than in the developed countries. As of March 1993, more than 600,000 cases of AIDS have been reported in the world; however, it is estimated that the true figure is approximately four times higher. At the present time, WHO estimates that there are 13 million people infected with HIV in the world and that by the year 2000 this figure will reach 40 million. PAHO estimates that 2.5 million people in the Americas are HIV-infected, of whom 1 million are in the United States and Canada and 1.5 million in Latin America and the Caribbean.

Although the advances in knowledge of the epidemiology of HIV infection in the world have been substantial and of inestimable value for the Region, research efforts in Latin America and the Caribbean will no doubt help to provide the specific information needed for evaluating the magnitude of the problem, setting targets for the programs, and improving the efficiency and effectiveness of the interventions undertaken. In addition, biomedical knowledge generated in the most developed countries is perhaps not always applicable to the Latin American countries by virtue of variations in the virus and in the behavior associated with its transmission.

PAHO/WHO promotes research on AIDS mainly through the Research Unit of the Program on AIDS and the Program on Health Technology Policies and Development. The latter administers the Research Grants Program, which has supported projects such as the development of reagents for the diagnosis of HIV infection with recombinant antigens in Cuba; the development of sets of reference sera in Argentina and Brazil; the isolation and characterization of HIV in Venezuela, Brazil, and Mexico; and a multicenter project for the development of a diagnostic kit in Argentina, Brazil, and Mexico. The Research Unit of the Program on AIDS supported several projects in Latin America and the Caribbean with resources provided through a contract with the National Institutes of Health (NIH) in the United States and, on a smaller scale, with resources from PAHO and the Global Program on AIDS. Dr. Weissenbacher described these projects, which are particularly related to epidemiological, clinical, and socio-behavioral aspects and the evaluation of drugs.

Between March and September 1991 the Research Unit of the Program on AIDS compiled an inventory in order to identify AIDS/HIV-related research projects, either concluded or under way, in Latin America and the Caribbean. The inventory identified 652 projects, of which 561 constituted the sample size analyzed. The first project identified was initiated in 1983, whereas most of them (73%) began in 1989 or later, and only approximately one third (35%) had been concluded when the inventory was prepared. Brazil and Mexico, with 143 and 135 projects, respectively, are responsible for half of the projects. Another 20% were carried out in the Caribbean countries, 11% in the Andean subregion, 10% in the Southern Cone, and 9% in Central America. A total of 1,630 researchers participated in these projects. More than one third or 38% were carried out in academic institutions, 32% in public health institutions as local or national epidemiology services, 20% in health services, and 10% in nongovernmental organizations (NGOs).

Of the 561 projects, 38% were classified as epidemiological, 30% as social-behavioral interventions, and 24% as clinical. The topics studied with least frequency were diagnostic procedures (5%) and basic sciences (3%), including studies of genetic variability of HIV. In the area of epidemiology, topics typically studied were the seroprevalence of HIV and descriptions of the AIDS situation, usually based on epidemiological surveillance sources. Studies of seroprevalence, together with surveys on knowledge, attitudes, and practices (KAPs), are the topics most frequently studied, each representing 19% of the research projects. In the clinical and drug area, 17% of the projects were studies on clinical manifestations of HIV infection, classified by apparatus and system or by specific opportunistic infection agent. Data were also presented relative to the design of the studies and characteristics of the samples.

All 561 projects add up to a total expenditure of US\$27 million, of which 59% came from international sources, indicating that research on AIDS in Latin America and the Caribbean depends more than other health areas on international resources, since it is estimated that for these other areas only 18% of the resources come from external sources. The projects in Brazil, Mexico, and the Caribbean account for 90% of the funds. The total of US\$27 million, although probably underestimated since it did not include infrastructure and personnel expenditures, is a relatively small amount, considering that countries such as Canada, with 10 times fewer cases than Latin America and the Caribbean, contributed US\$30 million between 1988 and 1991. Between 1982 and 1991, worldwide spending on AIDS research amounted to US\$5,600 million, and consequently the US\$27 million invested in Latin America and the Caribbean represents only 0.5% of this total in a geographical area that houses nearly 12% of the world's population infected with HIV.

The results of one fourth of the projects were disseminated through scientific meetings, 8% gave rise to articles in national journals, and 5% in journals outside Latin America and the Caribbean. Another 61% had not published their results, largely because the projects had not been concluded. The fact that 73% of the projects had begun two to two and a half years before the inventory indicates that research on AIDS in Latin America and the Caribbean is in its initial stages and is, accordingly, attempting to respond to the most pressing needs of prevention and patient-care programs. Major research gaps remain, such as elucidation of the pathogenesis of the virus, the formulation and evaluation of preventive strategies, and the performance of clinical tests of treatments and vaccines.

Dr. Weissenbacher concluded her presentation by reporting that in March 1993, updating of the inventory was begun, and that in July the phase for data collection (obtained, as previously, by means of a questionnaire), was completed.

DISCUSSION AND/OR RECOMMENDATIONS:

Discussion of this topic pointed out once again the importance of financial resources for research. Emphasis was given once more to the importance of taking advantage of opportunities for the mobilization of resources, such as investment proposals. It was recognized, however, that the inclusion of a research component in these projects as a matter of principle is not very effective and that it should be proposed in a more pragmatic manner, for example, as an evaluation component for these projects or as resources for institutional support. It was also recognized that direct action on the part of PAHO together with the banks would not be very effective and that the initiative should come from the countries. The role of PAHO, particularly through the PWRs, would be to convince the countries to include resources for these activities in their requests for loans.

In view of the reiterated concern of the Committee for financial resources in discussing the various topics, it was recommended that the next meeting of the ACHR include the subject of financing per se, subsequent to the study of already existing mechanisms in the Region for financing research, what the sources are, how they operate, and how they may be expanded.

X. THE RESEARCH ACTIVITIES OF THE PAN AMERICAN CENTERS OF PAHO/WHO

This topic was presented by Dr. Rafael Flores, in charge of the Science and Technology Transfer Program, Institute of Nutrition of Central America and Panama (INCAP).

Dr. Flores presented the results of a survey carried out in seven of the nine PAHO/WHO Pan American Centers, the objective being to describe and analyze certain aspects of the research activities carried out. The elements analyzed were: management of science and technology, particularly with regard to the policies, objectives, strategies, priorities, and plans concerning research executed by the Centers or in cooperation with the Member Countries; potential for the production of science and technology, particularly human resources, infrastructure, support systems, and sources of financing; and scientific-technological production, including current activities concerning research, publications, and produced technologies. The seven Centers--ECO, CFNI, CAREC, PANAFTOSA, CLAP, CEPIS, and INCAP--were visited in March and April 1993, which provided the occasion to hold interviews with directors and staff members and to collect documents and other related materials.

After a review of specific aspects of each of the Centers with regard to the three areas studied (management, potential, and production), Dr. Flores summarized the principal common points observed, as follows:

- Only one of the Centers has research policies, objectives, strategies, and priorities explicitly defined and approved by their Governing Bodies. It is considered that this shortfall limits the development of clearly oriented research activities geared to the needs of the Member Countries;
- All the Centers engage in activities to train human resources; however, none of them has visible coordination between training and research activities;
- Three Centers have External Scientific Advisory Committees (ESACs), which met in 1992 and early 1993. The reports of these meetings were highly useful for this work, despite the great diversity in their formats, which has made it difficult to glean specific data on the development of science and technology activities. Furthermore, only three of the seven Centers have research ethics committees, and the other four rely directly on the Ethics Committee of PAHO.

- The control and monitoring of research projects funded by both regular and extrabudgetary sources is weak in the Centers, and only one of them has an office responsible for such monitoring;

- The Centers do not usually have a human resource development policy for their personnel. Two of the seven Centers offer their professionals the possibility of taking short training courses, and one of them offers the opportunity to continue with master's or doctoral studies. The different contracting formats for similar work was mentioned as a problem with regard to job stability and the possibilities for career development. Five Centers encourage the participation of undergraduate, master's, and doctoral students in research projects, which permits the preparation of theses or dissertations;

- Three of the Centers have already subscribed to BITNET and/or INTERNET, and one of them is currently making arrangements for hook-up; the other three have not yet begun to take actions in order to obtain access to these systems;

- The Centers have launched a more active search for extrabudgetary funds for specific projects and institutional strengthening, which requires staff skilled in writing attractive proposals and, in the case of institutional strengthening, of strategic plans that define the courses of action to be followed in the medium- and long-term. Three of the Centers sell services and have set up revolving funds to support science and technology activities;

- In the last five years, the Centers have produced 653 scientific publications, and since 1985, 335 articles by staff members of the Centers have been registered in the MEDLINE data base. Unlike the situation of publications, there is no inventory of technologies developed by the Centers. Two of them are seeking to document the work they are performing in this area.

After presenting this general information on the research activities of the seven Centers, Dr. Flores made some recommendations as to how the deficiencies observed might be overcome, as follows:

- There is a need for formulating explicit science and technology policies approved by their authorities and setting up a system for implementing and monitoring them;

- ESACs should be set up in all the Centers;

- a standardized format should be used for the Centers' annual reports that provides a clear explanation of their research activities;

- every research project developed by a Center or in which a Center has been involved should be based on a research protocol that has been subjected to scientific and technical review and, if necessary, ethical review;

- the Centers should prepare a plan for their own human resource development, including solutions to the problems generated by the different types of contracting;

- support should be given to the Centers' initiative to prepare institutional development proposals and seek extrabudgetary financing, in addition to market developed technologies; and

- the Centers should strengthen their participation and leadership to prepare and develop proposals for multicenter and collaborative studies.

Immediately following the presentation by Dr. Flores, the Center Directors attending the meeting were given the opportunity to comment on the report and present additional information relative to their respective Centers:

Dr. Ricardo Schwartz, Director of CLAP, pointed out that the Centers' research areas should be established in accordance with the health problems and needs of the countries in the corresponding areas, which are in constant flux. This made it difficult to prepare long-term strategic plans. He noted that there can be no technical cooperation without research, since if no research is carried out there will be nothing to report to the countries, where groups of excellence in the various fields are increasingly emerging. The Center's potential for cooperation is intimately linked to its capacity for research. He mentioned, in addition, the need to strengthen ethical review of the Centers' projects. Although it is difficult to estimate the quantity of resources allotted to research, it is certain that almost all of it is derived from extrabudgetary resources. Since 1974, CLAP has been offering courses in clinical and operational research methodology. This year, it is going to initiate holding workshops to prepare protocols in order to promote and train young researchers with good ideas and semi-prepared proposals.

Dr. Vicente Astudillo, Director of PANAFTOSA, initially pointed out the great economic importance of disease. He also noted the need to respect the various decision-making entities to establish research policies and priorities. The principal objectives of research developed by the Center directly or in collaboration with national institutions are the development and adaptation of technologies and

methodologies. The four principal areas of research are diagnosis, vaccines, epidemiology, and research on services. The most significant achievements in these areas are the development of a more effective vaccine at a lower cost, diagnostic methods, and studies to support the establishment of surveillance systems. This research, which employs approximately 9% of the Center's resources, comes entirely from extrabudgetary funds. The scientific production of the Center concentrates on journals outside the health sector, and as a result, is underrepresented in MEDLINE.

Dr. Raúl Londoño, Director of INPPAZ, reported that the new Center had inherited most of the mandates from CEPANZO, in addition to the area of food protection. Research is aimed at solving problems related to food-borne diseases, such as risk analysis, vaccine field tests, development of operational models of services, etc. The Center has great potential for research, particularly in the form of human resources, laboratories, libraries, and animal facilities of high quality. The total budget for 1994-1995 is US\$9 million, and the most important achievement in research was the improvement of the rabies vaccine.

Dr. David Brandling-Bennett, Director of the Division of Communicable Disease Control, presented the data relative to CAREC. He deemed it difficult to adopt a standardized format for the reports of the Centers, given their diversity, but he considered it essential to produce a report on research activities, even if separately, that makes it possible to evaluate them. The fact that most of the resources for research in all the Centers comes from extrabudgetary resources indicates the scant importance given to research in the decisions on the regular budget, and opens the way to the possibility of the research agenda being defined by the donors. He noted in this connection the clear-cut need for a strategic plan of research.

DISCUSSION AND/OR RECOMMENDATIONS:

The Committee began discussion of the subject by referring to the recommendations presented by Dr. Flores. After considering each, it concluded by adopting them in their entirety. In addition, the ACHR emphasized the following points:

- Despite the heterogeneity of areas and objectives, there are common areas between the Centers that should be taken better advantage of to achieve coordination between them with a view to increasing their impact and optimizing their resources;
- original measures should be developed so as to expand the application of research results conducted by the Centers both at the national and local levels. An important product of research activities is human resource education, and in this

connection it was recommended that the opportunities for internships for young students be expanded by the Centers; and

- the adoption of a common report format was recommended for research activities, since impact, financial resources, quantity, and the type of scientific production can be explicitly recorded only if there is a single format to ensure uniformity. It was also recommended to prepare a specific report on longer-term research activities, for example, 4 to 5 years, that will make it possible to evaluate the quality and impact of scientific production. This report should be scrutinized by an international scientific committee especially convened for this purpose. The results of this evaluation should be periodically presented to the meetings of the ACHR. The Centers should be furnished with financial resources that will make it possible for them to set up and convene their Scientific Advisory Committees.

XI. IMPACT OF THE RESEARCH GRANTS PROGRAM OF THE PAN AMERICAN HEALTH ORGANIZATION (RGP)

This topic was presented by Dr. Alberto Pellegrini and Dr. Laura Nervi, short-term PAHO/WHO consultant.

Dr. Pellegrini gave a brief historical outline of the development of the Program from its beginning in November 1985 and presented information on the distribution of projects by country and subject area. He mentioned the measures that were adopted throughout this period with a view to enhance the RGP with regard to promotion mechanisms (including agreements with national agencies sharing this objective), support for the preparation of projects, improvement of review criteria, streamlining of administrative processes, etc., all based on partial evaluations and processes. He pointed out that during the almost eight years of the Program's life, the expenditures of approximately US\$4 million dollars, and the existence of a critical mass of almost 120 finished projects point to the need for an evaluation of the Program's impact with a view to reorient and improve it, which is the reason for including this topic in the present meeting of the ACHR.

Next, Dr. Nervi presented the results of two studies designed to evaluate the impact of research supported by the RGP. In the first study, a survey was applied to research teams that had received grants and that, to date, had already finished their projects. This survey seeks specifically to take note from the researchers' perspective, of the role played by the grants in strengthening research teams and institutions and also to confirm the dissemination, utilization, and transfer of the results obtained. Of the 103 projects completed by the researchers to whom the questionnaires were sent, 47 (46%) have replied so far.

The second study consisted of interviews with staff members of PAHO/WHO Headquarters more directly involved with the RGP with a view to identifying, within the Organization, those factors that favor or hinder the promotion of important, good quality research through the RGP and the utilization of its findings on the part of the technical programs. Twenty-three interviews were carried out in January and February 1993.

Although this is still only a preliminary report, since a large portion of the questionnaires sent to the researchers remain to be received, Dr. Nervi mentioned certain interesting results obtained both through the researchers' survey and the interviews with PAHO staff members. These thoughts are summarized below:

- Most of the projects (64%) supported by the RGP have no other source of financing. The resources are utilized for the payment of salaries or the purchase of equipment, and rarely for training activities or the purchase of bibliography;

- the teams that presented projects to the RGP on their own initiative (spontaneous projects) reveal greater stability than those that requested grants upon the instigation of PAHO (induced projects);

- in response to the questionnaire, of the 47 completed research projects, 64% were disseminated in mimeographed form and 85% were presented in national or international congresses. These 47 projects gave rise to a total of 87 scientific articles published in national and foreign journals and 7 books. Most of the articles (69%) correspond to spontaneous projects (the number of spontaneous projects and induced projects in the sample is practically the same);

- forty-seven research projects gave rise to 8 master's theses and 22 doctoral dissertations in different areas of knowledge in the health field;

- in most of the cases the researchers did not know if their research was cited in other works, if it was used in countries other than the country in which the research was carried out, or even if PAHO used the results. In most cases (more than 70%) the researchers knew that their research had been used in bibliography of undergraduate and graduate university programs and/or of graduate-level programs not affiliated with universities. Nearly half the research had been used by educators who did not belong either to the research team or to the sponsoring institution;

- the projects with lesser impact in terms of the usefulness of their results for publication, thesis, or education were for the most part induced projects, developed by unstable research teams that were set up for the project and then disbanded;

- a major portion of the researchers and staff members interviewed by PAHO feel that in addition to the financial support provided, it is very important for PAHO to play a more active role in providing technical support to develop projects;

- varying perceptions concerning the main objective of the RGP prevail among the PAHO staff members, including those who consider that PAHO should attach special importance to the production of knowledge geared to solve the Regions's priority health problems and others who believe that the main objective of the program should be to develop research capacity among the most disadvantaged sectors in the Region. The latter number among those who most regret the concentration of projects approved in a few countries and the high rate of rejection (nearly 75% of the proposals submitted to the RGP are not funded); and

- among the principal recommendations made both on the part of researchers and PAHO staff members are the need to: redefine priorities and make them more specific; provide more assistance in the project preparation; increase technical monitoring of the projects; provide training opportunities to team members; and support the publication of results.

Finally, Dr. Nervi pointed out that any reorientation of the RGP should take into account certain evident elements in the two surveys, such as the opposition between spontaneous projects, which seem to have greater impact in terms of the publications and dissertations they generate, and projects induced by PAHO, which are more closely monitored and whose results are better known and utilized by the Organization. Another issue is the definition of the core objective of the RGP, either as a basic support mechanism for projects that produce necessary and scientifically valid knowledge (as defined at present in the directives and regulations of the Program), or as a mechanism for the development of research capacity in more disadvantaged sectors (as considered by some researchers and even some PAHO staff members involved in the Program). Finally, the RGP must be more clearly defined either as an essentially financial support mechanism (subsidy) or as a mechanism designed to provide more comprehensive, technical, and financial support to project development.

Dr. Pellegrini took the floor again to present a proposal for a new directive that seeks to reorient the RGP with a view to overcome the problems identified and strengthen the positive aspects of the Program. This directive had already been approved by the IACR and is awaiting the recommendations of the ACHR for its implementation. The directive basically proposes a concentration of the resources in six large subject areas. Based on terms of reference that specify the topics and lines of research for each of these general areas, the scientific community in the Region will

be invited to present projects. The new directive seeks to combine the positive aspects found both in the induced projects and in the spontaneous projects, since it encourages consolidated research groups to present proposals that respond to priority problems identified by the Organization. This induced modality does not exclude the possibility that spontaneous projects initiated by researchers themselves will continue to be presented. The new orientation also foresees support for project preparation and the publication of the results through workshops specifically organized for this purpose.

Dr. L. F. Duque then presented the experience of organizing workshops for project preparation, a joint initiative with PAHO. Forty-eight proposals were received from universities and research institutes in Colombia, of which 10 were selected to be included in the workshop. This workshop will provide the researchers with opportunities for training and joint work with tutors who will help them improve the projects. The workshop will be held during the current month of August and the project preparation process will be monitored until the end of the year.

DISCUSSION AND/OR RECOMMENDATIONS:

Among the points proposed by the Committee on this topic are the following:

- The Committee recognized the importance of the RGP for the promotion of research and decided to support the general lines of the directive proposed for its reorientation. No agreement was reached with regard to Item 5 of the directive, which proposes that only public health research projects--that is, projects whose studies are concerned with population groups--will be admitted as spontaneous projects. With regard to the priorities, the Committee recommends that support be maintained for studies on scientific activity in health;

- the Committee praised the decision to maintain the spontaneous projects, since it made room for initiative and creativity of the scientific community with regard to topics and problems it considers to be of importance;

- another significant point was the importance of not lowering the quality, even if this means not spending all the available funds. In this regard, the Committee regretted that this situation continued to occur and recommended that all possible efforts be made to expand the demand for good projects. In the event that unused monies prevail, the Committee felt it to be of great importance that they be applied to activities to promote research, particularly the training of researchers in workshops and short-term fellowships linked to long-term training grants or fellowships at the

doctoral or post-doctoral level. Another alternative for using surplus funds is an independent evaluation of the Program with respect to its effective contribution to the advancement of knowledge in the various areas;

- in addition to the support required for project preparation, the Committee pointed out the need to assign greater importance to the dissemination of results (even within the Organization), as well as to support the drafting of articles for publication. The Committee reiterated the need to reevaluate the decision not to assign resources to cover the salary of principal researchers;

XII. REPORT ON BIOTECHNOLOGY ACTIVITIES, 1991-1993

This report was presented by Dr. Elsa Segura, member of the ACHR and Chairman of the Advisory Subcommittee of the ACHR in Biotechnology.

Dr. Segura first reviewed the background of related activities of the PAHO/WHO Program on Biotechnology. She recalled that in the 1980s the importance of this area began to be recognized in the Region and that initiatives to promote biotechnology began to proliferate on the part of national and international organizations, both public and private. Although PAHO had been carrying out scattered activities related to biotechnology for some time, in 1983 it began to promote discussion and projects on topics related to biotechnology in preparation of an integrated program to provide technical cooperation for the development of biotechnology in Latin America and the Caribbean. An important framework in this connection was the XXVI meeting of the ACHR, in August 1987, in which the recommendation was made to set up a Subcommittee of the ACHR for biotechnology, made up of scientists of renowned experience in the area. The Subcommittee held its first meeting the same year (1987) in San José, Costa Rica, which prepared the Regional Program for the Development of Biotechnology Applied to Health, specifying activities relating to support for research, human resource development, and institutional development.

As a product of the Program, in 1988 work was begun to support research in this area, and between 1989 and 1990 the first 12 projects were concluded. Procedures were developed for the diagnosis of malaria with the use of monoclonal antibodies; serum panels for AIDS were made available; approximately 30 isolates of HIV-1 were obtained from patients in Argentina, Brazil, and Mexico; an HIV testing kit was developed with recombinant antigens, currently being marketed by Cuba; and monoclonal antibodies were developed for hepatitis B that resulted in a reagent that is being used in the Carlos G. Malbran Institute.

Subsequent to this introduction, Dr. Segura reported on activities which have taken place since the meeting of the ACHR in August 1991. The IV meeting of the Biotechnology Subcommittee was held in January 1992 to analyze the results of a development project for an HIV testing kit that is being worked on collaboratively in four institutions in Argentina, Brazil, and Mexico with financial support provided by PAHO/WHO. The prototype kit has been developed and was evaluated subsequently in Santa Fe, Argentina, in November 1992 at a meeting attended by the researchers, members of the Biotechnology Subcommittee, and PAHO staff members. The kit has good possibilities for use but requires new technical and economic feasibility evaluations before production is begun. A by-product of the project was the establishment of laboratories with peptide synthesis capabilities in two laboratories in Argentina and Mexico and the training of several researchers.

Other subjects discussed at the IV Meeting of the Subcommittee were the priorities for supporting new research projects. It should be noted that, in addition to the project for the HIV testing kit, for which PAHO contributed US\$300,000 to the four participating institutions, support was given in the area of biotechnology through the Grants Program to a total of 19 projects, 12 of which have been completed and 7 of which are under way. The Subcommittee emphasized that the main thrust of PAHO's Program on Biotechnology should be human resource development, and recommended that courses be organized in advanced biotechnology techniques. Other topics discussed were the mechanisms and prospects for North-South cooperation in biotechnology, the activities of the UNDP/UNESCO/UNIDO Regional Program on Technology (RBP), the joint activities of PAHO and IICA related to biosafety, and the activities of the UNIDO International Center for Genetic Engineering and Biotechnology. Recommendations were made on all these topics that are orienting PAHO's collaboration activities with these agencies and programs.

Dr. Oscar Grau, Director of the UNDP/UNESCO/UNIDO Regional Program on Biotechnology, attended the aforementioned meeting in Santa Fe in November 1992, with whom an agreement was drawn up for the joint organization of courses by PAHO and the RBP. Dr. Segura and Dr. Grau prepared a program of courses that was submitted to the Regional Directing Council of the RBP in December 1992, three of which have been approved for 1993: Scaled-up Production of Recombinant Proteins (Cuernavaca, Mexico), Quality Control of Cell Cultures (Belo Horizonte, Brazil), and Systems of Expression in Eukaryotes (La Plata, Argentina). Each organization has pledged US\$45,000 for the three courses.

The First North-South Conference on the Human Genome was held in May 1992 in Caxambú, Brazil, to discuss the possibilities of participation by Latin America in the Project. Dr. Segura represented the Biotechnology Subcommittee in this

meeting and presented its recommendation that the Project also consider support for the study of the genome of pathogenic microorganisms for the Region. This proposal was accepted and communication was established among the geneticists, which began with the elaboration of a proposal for the study of the genome of S. mansoni, for which funding is currently being sought.

Finally, Dr. Segura presented some considerations on future activities to be carried out by the PAHO Program on Biotechnology and emphasized the need for continuing to organize courses and provide support for projects, particularly with respect to the development of emerging technologies applicable to diagnostics and to the development of vaccines, molecular modeling in general, and participation in the Project on the Human Genome.

After Dr. Segura's presentation, Dr. Pellegrini added some information to the Committee about future activities related to the component of the program dedicated to supporting the definition of the politics of development of biotechnology in the countries of the Region. The initiative was mentioned to begin a joint project with IICA in the area of biodiversity preservation and exploration through biotechnology, with an emphasis on medicinal plants. Along general lines, it is proposed to convoke experts who are involved in diverse aspects of this field to elaborate contributions with a view to gain the sensitivity and support of decision makers. Among the aforementioned aspects, outstanding are: scientific-technical, juridical-legal, economic, analysis of national exploitation experiences in biodiversity such as the Costa Rica-Merck Agreement, etc.

DISCUSSION AND/OR RECOMMENDATIONS:

The Committee congratulated Dr. Segura on her presentation and for the work being done by the Subcommittee over which she presides. Also noted were the following points:

- It is important to update the evaluation of projects supported by the PAHO Grants Program in the area of biotechnology, which was presented by Dr. Segura at the ACHR meeting in 1991. Also recommended is a detailed follow-up and evaluation of the courses supported by PAHO in conjunction with RBP. The Advisory Subcommittee presided by Dr. Segura must elaborate as soon as possible the terms of reference to convoke projects to be supported by RGP in the area of biotechnology, according to the guidelines established in the new directive which rules this Program;

- the Pan American Centers which possess experience in the area of biotechnology should play a more active role in the Program's activities, including participation in the Subcommittee meetings;

- the ACHR strongly supported the position adopted by the Subcommittee in relation to the Human Genome Program, particularly in what is referred to as public access of the advances achieved and the inclusion of projects for sequencing of genome microorganisms with the participation of researchers of the Region. Nevertheless, given the magnitude of these types of projects, it is not recommended that they be financed by PAHO'S RGP; and

- the ACHR considered highly satisfactory the work being conducted by the Biotechnology Advisory Subcommittee, which, as its advisory role allows, is affirming how important a mechanism is the participation of the scientific community in the design, execution, and evaluation of cooperative activities in this area. Recognizing the evident differences between the two areas, it was urged that the HSSR Subcommittee look to follow the example given by that of biotechnology. The success of the experience made the ACHR consider the possibility of recommending the creation of another Subcommittee in the area of the State of Health and Its Determinants. Recognizing the importance of promoting the development of research in this area, the ACHR considered if the Subcommittee mechanism would be the most adequate in order to orient the activities of PAHO's Technical Cooperation with this objective. Despite the gradual additional expenses which would implicate the functioning of another Subcommittee, the ACHR decided to recommend its creation. According to Dr. L. F. Duque, the proponent of this idea, in the eventuality that this recommendation be accepted, the ACHR would then have three Subcommittees: Biotechnology, HSSR, and the State of Health and its Determinants. The Ad Hoc Subcommittee created to elaborate the document of Politics of Science and Technology will be dissolved, for having completed its mission, still remaining the monitoring of activities in this area, which falls under the HSSR Subcommittee with participation and support of the other Subcommittees.

XIII. EVALUATION OF THE FELLOWSHIP PROGRAM

This topic was included on the agenda at the request of the Committee and was presented by Dr. Charles Godue and Dr. María Isabel Rodríguez, both of the PAHO/WHO Program for Human Resources Development.

Dr. Godue initially referred to the contribution of the Fellowship Program as training for research. In one descriptive study about the Program, it was observed

that 5,219 fellowships were given in the period 1983-87, in twenty-two countries, none of which pointed to the finality of fomenting research. Only 2% of those beneficiaries were in charge of research and 11% of teaching and research; 8.7% of the fellows were tied to the university. Although a current report was not carried out of this study, there are indications that the Program is decreasing. In 1992, 476 grants were given with a total of US\$2.6 million.

The program is administered in a totally decentralized manner, without resources generated within PAHO's Central Office. The distribution of fellowships and fellows permits us to conclude that this mechanism serves basically as an instrument of continued education for public sector administrative personnel as a loan of health services. There is a great flexibility in reference to criteria as the structures and procedures have not been clearly defined. With the exception of a few cases, the National Fellowship Committees are not functioning.

PAHO's Human Resource Development Program (HRD) is developing certain lines of work in relation to this theme, outstanding are:

- the amplification of participation at the central level of the Organization in the Program's administration;
- the promotion of greater information dissemination with reference to the Program, with a view to a greater clarity;
- the elaboration of an institutional guide and training opportunities in diverse areas;
- the promotion of the adoption of quality criteria for the granting of fellowships at the Representative level as well as the national organization level; and
- to promote a greater participation of the Organization's diverse technical areas;

In addition to these above mentioned measures to perfect the current Fellowship Program, HRD is elaborating project proposals to strengthen institutions in diverse areas, with a strong fellowship component. Such projects should be financed basically with extrabudgetary funds. Given the close relationships between human resource development and research, a series of initiatives are being proposed in coordination with HDR and HRD, among them, to improve understanding between the fellowship program and RGP.

Following the presentation of Dr. Godue, Dr. María Isabel Rodríguez added some reference information to the study conducted on the outcome of the fellowship program between 1983-1987. It stands out that 77% of those who received grants during that period manifested interest in applying that knowledge acquired through a research grant. On the contrary, although more than 70% of the fellows come from

the services sector, only 35% of them manifested the intention to apply their knowledge to the service sector. According to Dr. Rodríguez, this indicates a demand and interest on the part of research training, which once again, remains unanswered. Within PAHO and WHO a reduction in activities and resources related to training and formation, to benefit a higher priority in applied areas, has been noted. The fact that short-term fellowships predominate is also an indicator in this sense.

DISCUSSION AND/OR RECOMMENDATIONS:

Both presentations of Dr. Godue and Dr. Rodríguez caused the Committee Members to worry, keeping in mind that the formation aspects, particularly the granting of fellowships, have traditionally constituted one of the principal mechanisms of technical cooperation on which the Organization counts. Despite the recognized difficulty in reverting to the decentralized manner in which the program is being administered, the Committee resolved to urge the Organization to overcome the diverse distortions observed, particular to increase the fellowships relating to research training. Once again, it was resolved to recommend the creation of a central fund to grant approximately ten long-term fellowships for one year for advanced training, particularly in the area of Public Health research.

XIV. REVIEW OF THE REPORT

The present report was reviewed in a session dedicated to this objective. During this session, Dr. Milstein announced that he would not be able to present the ACHR report in the PAHO/WHO Directing Council meeting next September and indicated that Dr. Aldo Neri would perform this function, which was acceptable to the committee.

In relation to the agenda for the next ACHR meeting in 1995, the following themes were suggested:

- Financing S&T activities in health;
- Career plans for Science and Technology;
- Formation of health researchers, with special emphasis in post-graduate studies and fellowships;
- Bioethics and ethics in health research;
- Preservation and exploitation of biodiversity and its importance to health;
- Evaluation of project quality supported by PAHO/WHO RGP; and
- Reevaluation of PAHO's Research Grants Program;
- Evaluation of quality of S&T activities in some Pan American Centers.

Bearing in mind the custom to alternate meetings of ACHR in Washington and other countries, the idea of the location of the next meeting was proposed. Dr. Naomar de Almeida offered the installations at the University of Bahia, Brazil, suggesting that the meeting coincide with the World Congress on Epidemiology to be held at the same above mentioned location in April 1995. The suggestion was accepted by the Committee and the Director took it as a recommendation.

XV. CLOSING SESSION

During the closing session, Drs. Mamdouh Gabr, César Milstein, and Carlyle Guerra de Macedo, made closing remarks. The text of their remarks can be found in Annex II.

ANNEXES

ANNEX I
OPENING SESSION

DR. MILSTEIN'S OPENING REMARKS

It is my privilege to open this XXIX meeting of the Advisory Committee on Health Research and to welcome you all and in particular, the new members of the committee Drs. Naomar de Almeida Filho, Agustín Lage, and Elsa Segura. It is now almost two years to the day since we met in Uruguay on the occasion of our previous general meeting of this Advisory Committee for Health Research. The report of our deliberations, with the conclusions and recommendations, was presented for general consideration to the Directing Council by Dr. Ceferino Sánchez to whom we are very grateful. I understand that the report was generally well received and most of its recommendations approved. Our recommendation to increase the ceiling of the grants to \$ 30K for each project was supported as well as the emphasis on inter-country projects which combine institutions of recognized excellence with emerging ones. the use of such grants for the improvement of principal investigators salaries was not approved. An important task in our deliberations during this meeting will be devoted to reviewing and discussing the results of several of the other recommendations.

It was my task to present the report to the 31st session of the Global Advisory Committee on Health Research at the meeting which was held at WHO Headquarters in Geneva at the end of September and the beginning of October of last year. During that meeting, interesting comments were made about the disparity in the style of the presentations and, indeed of the nature of the work performed by the Regional Advisory Committees for Health Research. I myself did not find that difference neither surprising nor objectionable in view of the cultural, demographic, and economic differences as well as the vast difference in research in health problems and in the epidemiological transition in the six regions and, indeed the historical differences between the Regional institutions. I expressed the view that each region should be left free to elaborate its own style of reports, which may well evolve and change over the years, and which hopefully would reflect the diversity of approaches, possibilities and realities in health research in each region.

It is clear that health research in the highly developed and industrialized countries is of a different order of magnitude to the rest. What is not so clear is to what degree the economic improvement of countries in the developing world leads automatically to a parallel qualitative and quantitative improvement in health research. It is also debatable whether improvements in health research in other regions should follow the pattern established or being established by the more advanced countries. Indeed, the strong influence of the most developed countries, valuable as its is, should not obliterate or even discourage regional trends and idiosyncratic developments in the other regions.

Although I do not have supportive documentary evidence, it seems to me that, leaving aside the North-South divide and concentrating only on health research in the developing countries, the Latin American contribution has been and remains strong, relative to the other developing sections of the world. Furthermore, I have the impression that the advantage of Latin America in research in health and related problems is correlated with a more vigorous approach to the newly emerging and fast developing biotechnology revolution, although this may not hold true in the future. Short of proper documentary evidence, I found rather interesting that the Third World Academy of Sciences awards in Biology and Medical Sciences have been going overwhelmingly to Latin American scientists. More precisely, out of 11 awards given since 1986, nine have gone to Latin American countries (one of the award winners is a distinguished member of this Committee) and two have gone to Asiatic countries, one to India and one to China. I found these numbers rather surprising, and should give us some food for thought, particularly when contrasted with the awards given to other branches of science, namely physics, chemistry, and mathematics. Taking these last three disciplines together, out of 18 awards in the same period, 11 have gone to countries in Asia, five to Latin America and two to Africa, the latter two to Egypt both in chemistry, a point which Professor Gabr may find of some interest. It seems to me that this difference between the different branches of science must reflect either deep cultural differences between the relevant regions, or circumstantial reasons, or indeed a combination of both. The point has more than just passing interest because if circumstances are important, it would be useful to define them and take them into consideration as we discuss the issue of quality.

Indeed, as the agenda of this meeting develops, one of the subjects which will come up, I am sure, again and again, will be the quality of health research in our Region and ways in which this Organization can contribute to improve it. Of course, it may be argued that quality of biological and medical research does not necessarily translate into better health research relevant to the region, let alone better health care, which is in the final analysis, the objective of WHO. However, I am one of those who is deeply convinced that quality breeds quality and that basic research can act as an important catalyst in the improvement of the quality of health research in a general way. As we look ahead, the issue becomes more critical due to the impact of biotechnology. Gone are the days when we used to think that the discovery of the double-helix had no interest or impact in real life. The developments in basic molecular biology have led to the biotechnology revolution. The boundaries between basic research and strategic or applied research have long been eroded to a stage in which patents and commercial applications are not only increasingly being associated with important discoveries of basic research, but their impact is being seriously scrutinized by traditional curiosity-driven scientists and organizations supporting pure basic science. The converse is also true. Purely commercial enterprises are

increasingly investing in basic science with an eye on competition and profits. And, this is not only true for big science. It is a common mistake among policy makers in both the developed and the developing world (and, particularly in times of recession) to relegate the needs of basic science to the level of luxury. And, it is an even more common mistake, and not only among policy makers of developing countries, to imagine that we are out of the race. You are better sources of information to cite examples than myself, in which basic research performed in Latin American countries led sometimes directly to practical applications. I trust you will not object to my own bias if I mention the example of monoclonal antibodies to cell surface antigens developed in the Region which led to the preparation of reagents and kits, or helped in the development of new vaccine concepts which are being advanced in our Region.

Indeed, quality of research is a subject which will emerge again and again as our agenda proceeds. Not only quality, but also evaluation of quality. And, this is an area where PAHO has a major role as an advisor to governments and policy makers. Of course, there are major target areas, major issues, and priority programs. And, of course, it is critical that we help in defining them as required by the Region. But, unless they are supported by quality in the analysis and development of those programs and quality in their execution, they have no other value than curiosity. Indeed, the definition of the programs themselves must be done with quality in mind. It is no use to make excellent and highly relevant proposals and programs if there are no quality teams capable of executing them. But, we should also beware of the even more dangerous trap of underestimating the potential of our teams, particularly the younger ones.

High quality is not only difficult to achieve but it is also difficult to preserve. This is particularly true in developing countries which cannot offer to high flyers the atmosphere and, very often, the resources available in North American or European countries. Unfortunately, these are not the only reasons for the brain drain which was often induced by political persecution or vendettas, particularly in the not too distant past within different countries in the region.

Alas, quality is not something which can be easily defined, much less can it be easily promoted. Quality is the result of enlightened individuals and those are rare in all societies, almost by definition they are rare. They are indeed, to a large extent, the products of education and they only flourish in the correct environment. Environments of quality, not only at the level of basic research, but also in the research and development area, as well as at the industrial and other receiving ends of the spectrum, take many, many years to develop. They are the product of stable societies and of enlightened policies which take long-term views of the cultural and economic development of the country. None of these qualities have been superlative

in the region, to say the least. However, big changes are taking place and it is perhaps with hope that I (and I hope others too) detect positive signs in the region. So, perhaps we could look forward to an enlightened discussion and useful set of recommendations coming out from this meeting in the hope that they may indeed serve to promote health research in the region, and perhaps indirectly, the economies of the relevant countries.

Before I close this introduction, I would like to thank the Director General and the Chairman of the Global Advisory Council for Health Research for their presence and equally all the other invited guests who have come to hear and participate in our discussions.

And, now I call on Professor Gabr to deliver his address.

PROFESSOR M. GABR'S OPENING REMARKS

Thank you very much Professor Milstein, Dr. Macedo, Dr. Pellegrini, Dr. Teruel, dear participants and colleagues. It's really a great pleasure for me to join you again in the PAHO Regional ACHR Meeting, as well as in several other meetings which I attended with PAHO, mostly in my capacity as Chairman of the ACHR and in other capacities in my own profession. It has been great really to listen to Professor Milstein's introductory remarks. And, we've always benefitted during the six years where I worked with the Global ACHR both as a member, as a Chairman, of the great experience in health research carried out by PAHO. PAHO has several unique features: it encompasses within its umbrella, giant countries with huge scientific and research capabilities, and minute islands with very limited resources. Not only are the differences related to income or scientific background, but there are also huge cultural and behavioral differences in all PAHO countries. And, with the great relationship between social and behavioral aspects and their effects on health. This multicultural background is very unique for PAHO; it represents cultures innate in the continent, in both continents actually, as well as cultures imported from Europe, Portugal, Spain, France, England, and all other countries. Furthermore, as we just listened to Professor Milstein's introduction, PAHO is very much privileged to enlarge its activities through the grant and fellowship system, and the twinning mechanisms between the academia in PAHO and other regions, to have a very effective interregional cooperation, South to North as well as South to South. As usual, as I learned from the last meeting, as I have quickly passed through the agenda of this meeting, you have got very successful collaborative activities being carried out in PAHO. You have got collaborative activities in vaccine production. You have got that Convergence Project which I read thoroughly with great interest. And, also it seems there is also combined activities in resource allocation. Furthermore, one point mentioned by Professor Milstein is very relevant to us in ACHR, especially to those working in developing countries, the question of quality of research. Research, whatever it is, whether it is basic research or medical research, applied research or otherwise, must always speak to a certain quality. And, PAHO, I think is ahead of all other regions in this respect, in trying to keep the quality of research ahead.

As you heard from Professor Milstein, in the last meeting in the Global ACHR last October, which I will not bother you with in these few introductory remarks. Apparently I just knew I have another session to speak about it more in detail. In that meeting, there was some discussion regarding not necessarily a format for the Regions to present their reports, but for more direct access between the Regions, and between the Regions and the special programs, and between the Regions and the Headquarters in Geneva, regarding the assimilation of information related to health research. And, one of the ways of perfecting this, it was thought, is that to have at

least a basic format which would be filled to be followed by all the necessary details and documentation which, in fact, agree with Professor Milstein, will have to be different from one Region to another. Another aspect which was discussed in length, and again, I am in agreement with Professor Milstein, although those who might read the ACHR Global Reports might find them different that although WHO is mainly concerned with promoting health research, especially in developing countries, which need that assistance and need that catalytic approach, WHO realizes quite well that without basic biomedical research there can be no applied research; so, that this artificial dichotomy really does not exist.

May I take this opportunity also to thank PAHO and Dr. Pellegrini for the nice paper I saw in the program in the hotel yesterday about the new strategy they are proposing, which I think is very relevant to what we discussed in the Global ACHR, and making to be sure to thank you again, to thank the Regional Director, and all of you for inviting me to participate in this meeting. Thank you very much.

DR. CARLYLE GUERRA DE MACEDO'S OPENING REMARKS

Good morning. I am very pleased to have the opportunity to welcome you to your home, the home of health in the Americas, for yet another meeting of this Committee. In particular, I would like once again to recognize Dr. Milstein and to express our gratitude to him for his devotion to and interest in his duties as Chair of this Committee, for his participation and representation of this Committee and our Region, at the meeting of the Global Advisory Committee on Health Research, and for the excellent ideas he expressed in the introduction we just heard.

It is also an especially great pleasure for me to be able to welcome Professor Gabr, who not only has always been available and interested in the global aspects of research activities within the World Health Organization, but has also kept informed about and participated in the components at the regional level. His observations about the work carried out in this Region are particularly thought-provoking.

I would also like to extend a special welcome to the two new members of this committee, my good friends, Naomar de Almeida Filho --we meet again after how long?...15 years? I am glad to see that the years have scarcely touched you, except for your hair, and that perhaps is because you have used your head so much, and Augustín Lage, who joins the Committee at this meeting. I would also like to express my gratitude and thanks to all our visiting colleagues who agreed to come and take part in this meeting and to help the Organization ensure its success. I would particularly like to thank Dr. Mansourian for coming and to extend a warm "welcome home" to him. The presence of Dr. Mansourian, along with Professor Gabr, highlights how, within the World Health Organization, the University of Science, with a pivotal role to play in ensuring unity of doctrine, purpose, and policy in the Organization, given the diverse realities in which we work. I regret that Professor Salvador Moncada was unable to be with us on this occasion. Professor Lavados is not yet in the room but will certainly be here any minute, so the only one who is missing, to our regret, is Professor Salvador Moncada.

The Committee has not been inactive during these past two years. The subcommittees and working groups on health services, biotechnology, and science policy, and science and technology have been active and I would like to recognize the work of all the members of those subcommittees and the excellent contribution they have made, which undoubtedly will enrich the discussions at this meeting.

Both Professor Gabr and I have had a quick glance, at least not in as much depth as I would have liked, at the agenda and the documents you will be evaluating,

and I am really pleased at how well planned this meeting is. I am particularly glad that you will be taking a closer look at the problem of how to evaluate the Organization's activities in the field of health research, especially taking into account that very important aspect of quality. I believe that the intrinsic quality of the methods and processes through which science is carried out and technology developed, as well as quality in terms of the effective contribution that can be made to solve the enormous problems that affect the health and lives of our populations, are closely related.

Once again, welcome and thank you for coming. I wish you a pleasant stay in your home away from home, and of course, a successful meeting. All of us in the Secretariat of the Pan American Sanitary Bureau await the recommendations that you see fit to give us to bring before the next meeting of the Directing Council in the last week of September. But, above all, we are eager to adopt those suggestions as guidelines and patterns to guide our operations and efforts during the years to come. Again, many thanks.

ANNEX II
CLOSING SESSION

DR. GABR'S CLOSING REMARKS

Dr. Macedo, Dr. Teruel, Mr. Chairman, Dr. Pellegrini, it has been my very great pleasure to participate in this meeting and to listen to all the discussions that were raised. As a matter of fact, I personally have learned a lot, and I am sure that both myself and Dr. Mansourian from Headquarters, will transfer all we have benefitted from to the concerned Global ACHR committees and subcommittees.

We have been particularly impressed by your work in strict control of all research and training activities carried out in the Region, including the several research centers that were reviewed. There is no doubt that, as we expected and as we always found, the Region is very unique in this substance of process of methodology, of analysis, of evaluation, without which no focus in health research can be done.

I was also very happy, just a few minutes ago, when we were listening to subjects for future session, to hear that some of these subjects are very relevant to what was discussed in the Global ACHR in its last meeting. In the last meeting of the Global ACHR, as I mentioned in the opening presentation, was greatly concerned with looking at research needed to promote health with a futuristic look. It was also concerned with the global changes that are going to happen, not only in the field of health, but in many related fields, and how is this going to affect health. And, although in the present session we didn't have time to discuss much of the strategy for the future, I was very glad to listen just a few minutes ago, that in your future session you are going to dedicate some of the discussions to future strategies of health research in the light of these ongoing changes. Furthermore, as I mentioned before, there was a lot that was discussed about ethics and I am also glad this is a subject which is going to be discussed in length.

There has been also much discussion about equity in health care, in the Global ACHR, and how research can achieve this equity. And, I listened carefully to the presentations of the research grant program, and of the fellowship program, and to the activities of your centers and, how amidst these activities there are many members from some of the countries of the Region which are less privileged than certain other countries. It is my personal feeling, however, that if you feel it is necessary, this discussion of increasing the research capabilities of the less developed countries of the Region might be one of the subjects you discuss in the next meeting. Because, to start raising or improving the research capabilities, I will not name countries, in country X with an income of less than say \$200 per capita, will be totally different from another country with an income of \$2,000 per capita, and both will be considered developing countries. The same is true with a country where you have

more than a thousand Ph.Ds or D.Scs and in a country where you only have few handfuls of BScs. So, this concern, as far as I see, is fulfilled in your fellowship programs, in your grant programs to some extent, but there are more elaborate ways by which you can do this more effectively. There is an Anne Frank in giving this opinion is that I feel this Region in particular, has got all the resources capable to do so. It is the only Region out of the six regions, if we exclude the European Region, which is mainly formed from developed countries, (although the Eastern Bloc is now a problem in the European Region). All other regions do not have the capabilities which you have of dealing with so many developing countries, but with a huge cadre of intellectuals, of research workers, of scientists who can help very much those countries within the Region who are much less privileged than the characteristic countries whom we heard about several times during these last three days.

I was greatly impressed really by the presentation of the six centers that were picked up. And, in the Global ACHR, when we discussed collaborating centers, we never thought that collaborating centers will be working so effectively as yours have been done. And, I am sure the experience you have, has to be shared with other Regions.

Allow me just one minute before I finish, to tackle this question of dissemination of information. Your Region, being unique as I mentioned in certain aspects, the experience you gain in health research can definitely benefit many other regions where they are in great need of experiences from developing countries. And, this regional ACHR interrelationship is still very weak. It's getting stronger between ACHRs within the same continent, as it is in Asia, but it is very weak in ACHRs between different continents. And, I am sure with the Regional Director giving us the honor of being with us in this closing ceremony, he might give you attention to this. I know the language might be a difficulty, but there is a way of at least transmitting your experience, extracting your experience which you feel can benefit other developing countries in other regions.

Finally, I was greatly impressed by the time you spent on dissemination of information within your journals and your publications; the care you took to the quality of these publications, and the concern you have about the international recognition of these publications. I personally, as a pediatrician, feel a huge amount in pediatric research was carried out in this Region. I remember when I was a student fifty, sixty years ago, Dr. Neri who had Argentina as the number one country in pediatrics, I can't remember one or not. But, it is amazing how very little of your literature goes to international journals to our reach; maybe it goes to international journals, to professionals in the West who can afford to have all of these published. Is there a way by which you can summarize in a more used language, English or

French or abstract, or do an exerta medica for Latin America in particular in a language which is more widely read by other developing countries? I am sure you don't want to deny us the benefit of learning from what you have done.

Allow me Sir, Dr. Macedo, Dr. Milstein, Dr. Pellegrini, Dr. Teruel, to thank you again for inviting me giving this opportunity to share knowledge with you. Thank you very much.

DR. MILSTEIN'S CLOSING REMARKS

Thank you very, very much Professor Gabr for your very wise words. We will take them into consideration as well as your very interesting view of our Region from a global perspective. We very much appreciate your presence during, practically, the whole of our deliberations and the same applies to Dr. Mansourian. We are very impressed by your persistence in keeping up to date with the program.

We have, assuredly, reached the end of our deliberations and I would like to return to what I said during the meeting's opening session when I strongly emphasized the importance of the quality of health research and to the study of the quality of research.

I have been very pleased to note that my concern is shared by the members of this Advisory Committee, and also by the staff members of this Organization. I believe that this meeting of the Advisory Committee marks, if you will permit me to say so--and I hope I am not mistaken in this--a change, a new priority among the functions of this Committee. That priority is quality. In the first place, there is evaluation of the quality of health research in the Region, which is, of course, the responsibility of this Advisory Committee. No less important, however, is the promotion of research on how to assess quality, how to evaluate research, and how to measure the impact of that research on health and at a general level, the "extrinsic value," to borrow Dr. Vessuri's phrase. There is also the question of how to weigh intrinsic importance against extrinsic importance. We are very far from having reached any precise conclusions, but we have taken the first steps. And, we are confident that our deliberations and recommendations will provide new guidelines to allow us to continue in that same direction.

These efforts of research guidelines and objectives that can be used to define levels of quality should not be restricted to research or to health research alone. I think that by promoting and studying the evaluation of quality, the ACHR can also help to promote the acquisition of experience, of what you might call "know-how" about the objective evaluation of the tasks related to quality that PAHO normally carries out. Of course we are aware that both in research as well as in relation to other functions of the Organization, quality is not the only deciding criterion. There are other factors at work and those mentioned by Professor Gabr are "paramount," to use the English term. These factors range in importance from regional development at one extreme, to purely political or diplomatic topics at the other, and they must also be taken into account. Some of them must be seriously taken into account by all of us. I am referring mainly to those named by Professor Gabr and others which, I

am very much afraid, will be the headache that we give to the Director of the Organization, namely political and diplomatic matters. However, although quality cannot always be the sole criterion, the decisions made at political or diplomatic levels must be based on full awareness of the quality that is being sacrificed for the sake of strategic or political goals. This is the perpetual weighing of cost versus benefit that our Director will be charged with.

I would not like to end this meeting without thanking once again those I have already mentioned. In particular, I want to thank the Secretariat in general and, of course, Dr. Pellegrini who has done a fantastic job as we have seen throughout, not only with his support, presentation, and preparation before the meeting, but also during the meeting itself when, with blinding efficiency, he prepared an outstanding summary, which he must have worked on at night, long after 12:30, the time when I left him after dinner. I cannot imagine how he is managing to stay awake at the moment! I would also like to express my appreciation to other members of the Secretariat: Mrs. Micaela León and Ms. Susan Emerson, who were in charge of preparing the documents and reports; Mrs. Diana Mantilla and Ms. Adriana Rota, who provided administrative support; and Mrs. Rocío Picado, who was in charge of untangling all of our little nightmares and problems as they cropped up--and quite a few did. And, of course I also want to thank our translators for providing such high quality translation and displaying such patience at times, especially when we ran overtime. Finally, I would like to express my appreciation to all of you for your cooperation and your willingness to put up with me at times when I acted somewhat dictatorial, as I said earlier. Thank you very much.

And now, to close this meeting, some remarks by Dr. Guerra de Macedo.

DR. CARLYLE GUERRA DE MACEDO'S CLOSING REMARKS

Thank you, Mr. Chairman. The actual closing will be up to you, as Chairman, will it not, so that I will be returning the floor to you.

Good afternoon my friends. To begin with, I would like to ask for your pardon. Due to an accumulation of responsibilities and matters that could not be postponed, I feel frustrated and guilty having been unable to be with you and participate in a more significant way in your discussions. However, I believe that I have been the only loser.

So, in asking for your pardon I am indeed attempting to demonstrate the high esteem in which I hold you, and to express the appreciation of the Organization as your Director, for the contribution that you are making to the work of the Organization, not only at these meetings, but in all the other activities which, as Members of this Committee, you are taking on and performing with remarkable proficiency.

I have received some partial information about the excellence of the discussions and the deliberations that took place here, and I find it difficult, somehow, to contain my eagerness to receive the report of this meeting and be able to read about the parts I missed. By reading, I will learn about the things I did not have the chance to listen to, and thus take into consideration the recommendations you have made to take appropriate action and make operational decisions, in line with and even beyond the normal possibilities of our office.

I am convinced that this meeting, as Professor Milstein and Professor Gabr said, has not only been excellent, but has also marked a real step forward in the quality of the Committee's operation, which will doubtless translate into a qualitative improvement in the operations of our research program. Among other things, I am particularly pleased to note the presence and participation of four of the Pan American Centers. For, one area in which I sense inadequacy, and I think Dr. Pellegrini shares this feeling, is with respect to the coordination of the research activities that are promoted and directed by the Organization. I am well aware of the operational improvements that we have been able to make, including the results of the Research Grants Program, for example. But, we have not yet succeeded in establishing effective mechanisms for internal coordination of the various research activities directed by the Organization. This is not an easy job, but I believe that we must emphasize the presence of the Centers as instruments or units with extensive dealings and direct responsibility in the research field within the Organization. And,

it is my understanding that their presence at this meeting marks progress in that direction.

I would like to emphasize, and give a kind of preliminary response to, the excellent suggestions of Professor Gabr by making three observations about three of the points he mentioned.

In reference to future agenda items for the work of this Committee, we must take into consideration a broader concept of health, which includes not only those activities directly related to the traditional field or sector called health, but also the relationship and components related to the living conditions and the well being of people in a broad sense. In this regard, I would like to take two words mentioned by Professor Gabr, equity and ethics. Equity is the central concept and value for the whole work of this Organization.

Revolving around this concept of health equity, we are trying to organize the resources and the activities of the Organization, not only the Secretariat, but also the countries and member governments at large. Furthermore, we consider that this Organization is in an exceptional position to promote and stimulate the development and application of the ethics as a concept, in terms of development and more specifically, in terms of providing technical assistance and executing research. As you do Professor Gabr, I also think that this Region has extraordinary potential; much more than what has been expressed, in what we are doing at this moment and the variety and quality of the experiences of this Region, I think it is extraordinarily useful for all the regions in the world, especially those regions also in the process of development: Africa, Asia, and other parts of the world. Unfortunately, the unity of the World Health Organization, unity that I think, and am deeply convinced, is not at odds with diversity, but on the contrary, can be threatened by this diversity if we are able to deal with it to learn and to care. This unity is still an objective, an ideal and not a practice. From our point of view in AMRO, we are ready to share our experiences and to learn from the experiences of other regions. I hope that in the coming years, at least in the field of research and dissemination of information, we can develop effective mechanisms to disseminate our knowledge and receive knowledge of other friends and committees around the world.

Thank you very much, Mr. Chairman. The floor is yours again.

DR. MILSTEIN'S CLOSING REMARKS (Final)

Well, the only thing that remains to be said is "until next time," two years from now, and to all of you, at least those who will be traveling, "have a safe trip." The session is closed.

ANNEX III
LIST OF PARTICIPANTS

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Pan American Health Organization

Organización Mundial de la Salud
World Health Organization

XXIX REUNION DEL COMITE ASESOR DE INVESTIGACIONES EN SALUD
XXIX MEETING OF THE ADVISORY COMMITTEE ON HEALTH RESEARCH

CAIS/ACHR 29/93.2
Original: Español/English

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ANNEX IV
LIST OF DOCUMENTS

XXIX MEETING OF THE ADVISORY COMMITTEE ON HEALTH RESEARCH

Washington, D.C., 2-5 August 1993

LIST OF DOCUMENTS**ACHR 29/93.3****Original: Spanish**

Number	Title	Original Language
ACHR 29/93.1	Provisional Program.	English/Spanish
ACHR 29/93.2	Provisional List of Participants	English/Spanish
ACHR 29/93.3	List of Documents	English/Spanish
ACHR 29/93.4	Report of the Global Advisory Committee on Health Research (WHO) - Report to the Director General.	English only
ACHR 29/93.5	Bases for the Formulation of Science and Technology Policies in the Health Field in Latin America.	Spanish
ACHR 29/93.6	Regional System of Vaccines for Latin America and the Caribbean (SIREVA) - Progress Report.	English
ACHR 29/93.7	Evaluation of Research Projects with Special Reference to the Biomedical, Clinical and Health Fields.	Spanish
ACHR 29/93.8	Editorial Procedures for Evaluation of Articles for Publication in Latin American and Caribbean Health Science Journals.	Portuguese

XXIX MEETING OF THE ADVISORY COMMITTEE ON HEALTH RESEARCH

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ACHR 29/93.3

Original: Spanish

Number	Title	Original Language
ACHR 29/93.9	Research Activities of the PAHO Communicable Diseases Program (89-92)	English
ACHR 29/93.10	Research on AIDS in Latin America and the Caribbean.	Spanish
ACHR 29/93.11	Research Activities in Public Health at Postgraduate Level.	Spanish
ACHR 29/93.12	Impact of the Research Grants Program of the Pan American Health Organization.	Spanish
ACHR 29/93.13	Report on Biotechnology Activities, 1991-1993.	Spanish
ACHR 29/93.14	Research Activity of the Pan American Centers of PAHO.	Spanish
ACHR 29/93.15	Report on the Technical Cooperation among Countries in Health (Project CONVERGENCE)	Spanish
ACHR 29/93.16	Final Report of the XXIX Meeting of the Advisory Committee on Health Research	English/Spanish