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EVALUATION OF THE PAN AMERICAN ZOOSES CENTER AND THE PAN AMERICAN
FOOT-AND-MOUTH DISEASE CENTER AND RECOMMENDATIONS ON BUDGETARY ADJUSTMENTS
FOR 1981

The 84th Meeting of the Executive Committee reviewed in detail the Progress Report submitted to the Director of PASB by the External Evaluation Team on the above subject (Document CE84/21, ADD. I). At that time the Team* was still reviewing and awaiting additional information prior to developing its final report. Resolution XXI of the 84th Meeting of the Executive Committee reflects the interim nature of the Progress Report.

In July the Team completed its efforts based on the additional information that was compiled. Its deliberations are reflected in two separate documents: an external report providing the highlights of the Report and an overall summary and conclusions (Annex I); and a supplement to the Progress Report, containing an elaboration of the key components of the Team's analysis, utilizing the additional information that was requested (Annex II). The Progress Report as submitted to the 84th Meeting of the Executive Committee (Document CE84/21, ADD. I) is attached as Annex III, and Resolution XXI of the Executive Committee, as Annex IV.

Annexes

*The External Evaluation Team comprised Dr. M. G. Candau, Dr. Francisco Dy, Dr. Martin Kaplan, and Mr. Rudolph Peterson.

EVALUATION OF THE PAN AMERICAN ZOOSES CENTER (CEPANZO) AND THE
PAN AMERICAN-FOOT-AND-MOUTH DISEASE CENTER (PANAFTOSA)

EXTERNAL REPORT

Highlights of the Report

- The concept of veterinary public health
- Responsibility of PAHO for PANAFTOSA
- Economic and public health justifications for CEPANZO and PANAFTOSA
- Shift in emphasis of operations
- Priorities for CEPANZO activities
- Functional priorities in PANAFTOSA
- Problems of the physical plants of the Centers
- Recommendations for the 1981 budget
- New financing mechanisms for the Centers for 1982 and beyond

SUMMARY AND CONCLUSIONS

The title "veterinary public health" rather than "animal health" better links the work of the veterinary, medical, public health, and allied disciplines with the efforts of the community for the prevention of disease in man and animals as related primarily to the promotion of human well-being.

We have given considerable attention to the problem of whether PANAFTOSA should be under the overall management responsibility of a health organization (PAHO), as is clearly indicated for CEPANZO, or should be transferred to a primarily agricultural authority. We recognize the difficulty in justifying the utilization of funds from the regular budget of a health organization with many priorities exceeding that of the nutritional component of animal protein made available by effective foot-and-mouth disease control. Our conclusion, following discussions with high-level health and agricultural authorities of the countries we visited, is as follows:

Since PANAFTOSA is of necessity an international undertaking, it is essential that the responsible management authority is a well-established one with the necessary structure and prestige to command the confidence and cooperation of Member Countries. PAHO admirably meets these requirements, and should certainly continue to fulfill this function until a suitable alternative is found or matures over time.

The justification for the establishment, present operations and future development of CEPANZO and PANAFTOSA rests on the degree of improvement in human health and economic savings derived by Member Countries of PAHO. Even the relatively imprecise information made available to us indicates that greatly adverse effects on human health and staggering losses to the economy of Member Countries occur each year, which could be markedly reduced with relatively very small financial outlay by Member Countries for the implementation of selected disease control programs. We are convinced that a central requirement for achieving the potential for remarkable savings to the economy and improvement in public health of Latin American countries rests on the effective functioning of CEPANZO and PANAFTOSA.

Brucellosis is known to be widespread in animals and man throughout the Latin American countries. For all of Latin America, brucellosis causes losses amounting to \$600 million annually, with over 3,000 human cases reported for 1977. The actual number of human cases is probably 5 to 10 times higher. The cost/benefit ratio for activities in brucellosis prevention ranges from 1:6 to 1:140, depending upon conditions in a particular country. This means that for every dollar spent a benefit of from 6 to 140 dollars can be expected.

For the Americas, total losses, not counting costs for disease control programs, amount to about \$100 million annually for animal tuberculosis.

Rabies is on the increase in the Americas. Annually some 250,000 humans in Latin America and 30,000 in the United States of America must undergo the highly unpleasant and prolonged vaccination therapy because of exposure to rabid animals. Apart from the mental and physical suffering, millions of man/hours loss of work are involved because of the necessary therapy. In addition, some 500,000 cattle are estimated to die each year from bat-transmitted rabies, causing losses of \$50 million annually. During the 1970s, over 3,000 people died from rabies in Latin America. The activities of CEPANZO with respect to reducing the post-exposure vaccine treatment from 21 to 14 doses (and in some countries 9 to 10 doses) has resulted in an annual benefit of 875,000 working days per year in Latin America.

In southern Latin America hydatidosis causes the condemnation of meat from infected animals in the hundreds of tons annually. Over 1,000 human cases of hydatosis were reported in 1977 in infected countries of Latin America.

Tens of millions of food-borne infections occur in Latin America annually, and the diarrheas of infants and children largely caused by this group of infections are the major causes of infant morbidity and infant mortality.

The eradication of foot-and-mouth disease from Latin America would mean an increase in production levels of 350,000 tons of meat and 500,000 tons of milk per year. Introduction of foot-and-mouth disease into the United States of America could result in a loss of US\$12,000 million (\$12 billion) over a period of years through increased costs to consumers for animal products. Enormous indirect losses occur to meat exporting countries of Latin America because of lower prices and restricted markets for their products. The accidental introduction of foot-and-mouth disease into Canada in 1952 caused a direct loss of some \$100 million (e.g., slaughter of animals) and indirect losses in excess of \$900 million (e.g., closures of borders, restricted trade).

The foregoing public health and economic costs of the zoonoses and foot-and-mouth disease amply justify the need for CEPANZO and PANAFTOSA, which have successfully established an infrastructure of trained personnel from Member Countries, a unique communications and surveillance network, and standardized laboratory procedures. The disappearance of either one of the Centers, or the further decline in effectiveness of operations which is now occurring, would have catastrophic results in the public health and economic domains.

The unique information and surveillance network, as well as the laboratory scientific base of PANAFTOSA, could be extended from

foot-and-mouth disease to other diseases of both purely veterinary and public health importance, e.g., encephalitis, gastrointestinal outbreaks, hemorrhagic fevers, African swine fever and other epizootic diseases.

The high-level expertise of PANAFTOSA in virology could be exploited by collaborating with nearby and other virus laboratories throughout Latin America in developing a Latin American network for comparative virology, which would be independently competent with respect to identification and standardization of reference preparations for animal virus agents of human and veterinary importance throughout the Continent, e.g., influenza, arboviruses, African swine fever. This important resource is now lacking in Latin America, and continued dependence on other countries for this activity is most unsatisfactory.

The Scientific Advisory Committees (SAC) have been a very valuable peer review mechanism for CEPANZO and PANAFTOSA, and the continued biennial visits of SAC are indispensable as a stimulus and assessment mechanism for the effective functioning of the Centers.

We visualize a new stage of operations requiring a shift in emphasis in both Centers. This should be directed primarily towards assisting Member Countries in formulating disease control strategies for the individual countries and the region as a whole, and the implementation of such strategies in the field. The shift should be towards increased confirmatory functions for national laboratory services and training for operations, as well as a concentration on alternative strategies of disease control operations based on specific conditions in individual countries. Operations, therefore, should be field oriented rather than concentrated in the Centers themselves. Especially important are increased activities with reference to the scientific planning of disease control strategies, using new techniques including mathematical modeling with computers.

The indispensable critical mass for CEPANZO activities includes, in order of priority, rabies, brucellosis, food hygiene, and tuberculosis, backed up by disease control planning and information services. While continued work of CEPANZO in hydatidosis is of lower priority, it should be stressed that CEPANZO is one of only a handful of laboratories throughout the world, and the only center of PAHO/WHO, working in this field. Thus, the unique aspect of service training and research in hydatidosis should be preserved if at all possible.

For CEPANZO we suggest that funds and personnel for other priority activities could be obtained by phasing out work in leptospirosis, the pathology unit, and the Azul facility.

We have found the physical plants of both CEPANZO and PANAFTOSA to be grossly inadequate, and with respect to CEPANZO, even dangerous because of the possible escape of virulent pathogens. In conformity with the basic agreement signed by PAHO and the host countries, urgent discussions should be undertaken to provide adequate facilities. Assistance in financing might be sought from international funding organizations, e.g., the Inter-American Development Bank.

Given eventual financial stability, we do not visualize an overall reduction in staff from the number presently employed in CEPANZO and PANAFTOSA, although some restriction of activities on a temporary basis will undoubtedly be necessary because of the immediate budgetary difficulties. Thus, in CEPANZO, field services require strengthening in rabies, tuberculosis, brucellosis, food hygiene, and disease control planning; in PANAFTOSA, additional field officers and expert competency at the Center itself for virology and disease control planning are required. Decisions on reductions or shifts of personnel would appropriately be made by the Director of PASB in keeping with decisions of the Governing Bodies.

To meet the immediate need for the 1981 budget, we cannot see any alternative other than to recommend that provision be made in the regular budget for a level of activities in 1981 not less than that of 1980. Otherwise, we foresee a further and perhaps irreparable deterioration in the quality and quantity of activities of both Centers. The breathing space thus provided should be used to arrange alternative methods of financing which, hopefully, could come into effect in 1982.

For 1982 and beyond, it would be best to seek reliable budgetary provisions for periods of five years, since experience in WHO and other international programs has shown that single donations or contributions, which may not be committed anew on an annual basis, eventually become a charge on the regular budget. To avoid the latter situation, the experience of WHO should be followed, and PAHO should develop the new mechanism employed. This refers to a consortium established by the World Bank in 1975 for financing the "Control of Onchocerciasis in the Volta River Basin Area Program" in West Africa, and the Tropical Disease Research Program established in 1978. The essence of these procedures is that an international financing organization such as the World Bank or the Inter-American Development Bank, the UNDP and governments, sign an agreement on a voluntary basis; and, in addition to accepting funding for specific programs from foundations and other organizations interested in helping, the Bank provides part of the funds out of its own resources. The agreement provides for an executing agency with full freedom and responsibility for personnel and technical activities. A renewal of five years for the onchocerciasis project was approved in 1979, and a similar action is envisaged for the Tropical Disease Research Program.

Since the activities of CEPANZO and PANAFTOSA have enormous agricultural and socioeconomic implications, agricultural ministries in all countries should make intensified efforts within their own countries to provide funds for increasing national contributions to the PAHO budget specifically earmarked for PANAFTOSA and CEPANZO, rather than to rely on funds from the health sector.

SUPPLEMENT TO THE PROGRESS REPORT ON EVALUATION OF THE
PAN AMERICAN ZOONOSES CENTER (CEPANZO) AND THE
PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER (PANAFTOSA)

INTRODUCTION

In the Progress Report presented to the Executive Committee (Document CE84/21, ADD. I, 27 May 1980), we formulated our observations and recommendations in the light of information available to us at that time. We have since received certain additional information, and have reviewed the comments on the Progress Report made by the Executive Committee at its 84th Meeting (Summary Records CE84/SR/3 and 4 of 24 June 1980). We felt it best to leave our Progress Report intact, and to supplement it as our Final Report. The supplement is based on the additional information we have received, and clarifies certain questions raised by the Executive Committee.

It will be necessary to refer to our Progress Report and to consider this supplement as additional commentary. We shall, however, attempt to present the salient points of both documents in the comprehensive summary prepared in the present Report. We shall follow for the most part the presentation made in the Progress Report so that cross-reference to the Progress Report will be facilitated.

PART I

A. INTRODUCTORY REMARKS

We are pleased to note that the Executive Committee suggested to the Director that he consider whether the term "veterinary public health" be used rather than "animal health" to denote the activities of PAHO's program dealing with various aspects of public health and animal diseases, including the activities of CEPANZO and PANAFTOSA. We are also pleased to note that the Executive Committee acknowledged the view of the Directing Council that PANAFTOSA should remain a PAHO responsibility.

B. SOME PUBLIC HEALTH AND ECONOMIC ASPECTS OF THE ZOONOSES AND FOOT-AND-MOUTH DISEASE

1. Brucellosis

In addition to the justification given in the Progress Report, we have been informed that a recent analysis has shown the cost/benefit ratio for activities in brucellosis prevention ranges from 1:6 to 1:140,

depending upon conditions in a particular country. This means that for every dollar spent in the control of this disease, a benefit of from 6 to 140 dollars can be expected.

2. Tuberculosis

We should like to stress that activities of CEPANZO in this field are not confined to bovines, but include also tuberculosis in other animals and the testing of BCG vaccines used in man. For the very important work of the latter function (BCG vaccines) there exists no other facility in Latin America.

3. Rabies

In addition to the justifications for activities in this disease given in the Progress Report, an analysis has shown that, because of the activities of CEPANZO with respect to reducing the post-exposure vaccine treatment from 21 to 14 doses (and in some countries 9 to 10 doses), an annual benefit of 875,000 working days per year in Latin America has been achieved.

4. Hydatidosis

While continued work of CEPANZO in this field is of lower priority than the above three diseases, it should be stressed that CEPANZO is one of only a handful of laboratories throughout the world, and the only center of PAHO/WHO, working on hydatidosis. The unique aspect of service, training, and research activities dealing with control programs and immunodiagnosis should therefore be preserved, although some reduction and shift of present personnel in this field at CEPANZO could be contemplated in order to meet stringent budgetary needs and other priorities (see below).

5. Foot-and-Mouth Disease

The presence of foot-and-mouth disease in major meat exporting countries of Latin America results in much lower prices and restricted markets for their products. Enormous indirect economic losses are thereby experienced by those countries. The accidental introduction of foot-and-mouth disease into Canada in 1952 caused a direct loss of some \$100 million (e.g., slaughter of animals) and indirect losses in excess of \$900 million (e.g., closures of borders, restricted trade).

C. THE CENTRAL ROLE OF CEPANZO AND PANAFOTSA

This has been dealt with in the Progress Report. As stated in that Report, "the disappearance of either one of the laboratories, or the further decline in effectiveness of operations which is now occurring, would have catastrophic results in the public health and economic demands." Major shifts in the activities of those Centers should be considered with reference to the scientific planning of disease control strategies, using new techniques including mathematical modeling with computers. As stated in the Progress Report, "success will depend on increasing the expert strength at CEPANZO and PANAFOTSA, inclusion of these techniques in their training programs, and strengthening the Centers' field operations for the applications of this discipline in the countries themselves."

PART II - THE CENTERS

We shall deal here with only certain aspects of the subject as dealt with in the Progress Report. In the Progress Report we emphasize the need for a new and intensified level of operations, consisting of planning and management of disease control programs in the individual countries and the implementation of such strategies in the field. Thus, operations personnel of the Centers during the next decade should be field-oriented rather than concentrated in the Centers themselves.

As stated in the Progress Report, we have found the physical plants of both CEPANZO and PANAFOTSA to be grossly inadequate, and, with respect to CEPANZO, even dangerous, because of the possible escape of virulent pathogens being dealt with. In remedying this situation we should like to point out that the basic agreements signed between PAHO and the Government of Argentina for CEPANZO, dated 10 August 1956, and between PAHO and the Government of Brazil for PANAFOTSA, dated 27 August 1951, incorporated an undertaking by the host countries to provide adequate facilities. We have been informed that for this purpose discussions have already been undertaken between senior PAHO officials and government authorities of the respective countries to determine what might be done in this connection. In addition, we suggest that assistance in financing be sought from international funding organizations, e.g., the Inter-American Development Bank.

A. PROBLEMS OF PERSONNEL

In the Progress Report we have attempted to appraise the specific activities of CEPANZO and PANAFOTSA, with indications as to where certain activities could be curtailed, and where shifts in personnel and resources could be made to problems of greater priority. For the future,

CEPANZO field services require strengthening in rabies, tuberculosis, brucellosis, and food hygiene, and disease control planning; in PANAFTOSA, additional field officers and expert competency at the Center itself for virology and disease control planning are required. While reductions or shifts of personnel could be envisaged in the fields of leptospirosis, the pathology unit and Azul facility with regard to CEPANZO, specific actions in this connection with respect to personnel would appropriately be made by the Director of PASB in keeping with decisions of the Governing Bodies.

Given eventual financial stability, we do not visualize an overall reduction in staff from the number presently employed in CEPANZO and PANAFTOSA, although some restriction of activities on a temporary basis will undoubtedly be necessary because of the immediate budgetary difficulties. Ultimately, with adequate financing (see below), an increase in several professional posts in each of the fields mentioned should be envisaged if the Centers are to operate effectively.

B. FINANCING

In our approach to this problem we have taken into account the budgetary crisis involved in the continuation of CEPANZO and PANAFTOSA activities. Since there was some misunderstanding of our preliminary recommendations on financing in our Progress Report, we should like to clarify and expand on certain points.

1. The immediate need is for the budget for 1981. We cannot see any alternative for the short-term other than to recommend that provision be made in the regular budget for a level of activities in 1981 not less than that of 1980. If this is not done, we foresee a further and perhaps irreparable deterioration in the quality and quantity of activities of both Centers. Such a provision for 1981 would provide a breathing space to arrange alternative methods of financing, which, hopefully, could come into effect in 1982.

2. To promote adequate activities for 1982 and beyond, it would be best to seek reliable budgetary provisions for periods of five years. Experience in WHO and other international programs has shown that single donations or contributions which may not be committed anew on an annual basis eventually become a charge on the regular budget. It is most desirable therefore to develop a mechanism which would ensure financial commitments on a continuing basis over a period of years, renewable for further periods. Such a possibility is described in the next item.

3. Two examples can be cited of the suggestion made in item 2. The first is a consortium established by the World Bank in 1975 for financing the "Control of Onchocerciasis in the Volta River Basin Area Program" in

West Africa, executed by the World Health Organization. The second example is the Tropical Disease Research Program in WHO, established in 1978. The essence of these procedures is that an international financing organization such as the World Bank or the Inter-American Development Bank, the UNDP and governments, sign an agreement on a voluntary contributing basis; and, in addition to accepting funding from foundations and other organizations interested in helping, the Bank provides part of the funds out of its own resources. The agreement provides for an executing agency with full freedom and responsibility for personnel and technical activities. With respect to the onchocerciasis project, renewal for a further period of five years (1980-1984) was approved in 1979, and a similar action is envisaged for the Tropical Disease Research Program in 1983.

4. As indicated in our Progress Report, it is difficult to justify funds for foot-and-mouth disease control out of health budgets with other pressing priorities. Since foot-and-mouth disease is of enormous agricultural and economic importance, agricultural ministries in all countries should make intensified efforts within their own countries to provide funds for increasing national contributions to the PAHO budget specifically earmarked for PANAFTOSA. The same applies for CEPANZO.

ACKNOWLEDGMENT

We should like to express our appreciation to the authorities and technical experts of the various Governments with whom we have consulted for their fine cooperation in helping us fulfill our task. We thank also the Secretariat of PAHO for their help in this work.

*executive committee of
the directing council*

PAN AMERICAN
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*working party of
the regional committee*

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CD27/22 (Eng.)
ANNEX III

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EVALUATION OF THE PAN AMERICAN ZOOSES CENTER AND THE PAN AMERICAN
FOOT-AND-MOUTH DISEASE CENTER AND RECOMMENDATIONS ON BUDGETARY ADJUST-
MENTS FOR 1981

Progress Report

PART I

A. INTRODUCTORY REMARKS

In this progress report, we are pleased to present our preliminary assessments and recommendations with respect to the task entrusted to us concerning the Pan American Zoonoses Center (CEPANZO) and the Pan American Foot-and-Mouth Disease Center (PANAFTOSA). We are awaiting further information and the results of supplementary explorations and analyses before completing our final report.

Before discussing specific details of CEPANZO and PANAFTOSA we should like to touch briefly upon two related but different issues which will clarify our approach to the problems concerned. The first issue relates to a question of terminology in linked human and animal health problems, and the second to the problem of justification of management responsibility by PAHO for PANAFTOSA.

In PAHO, the term "animal health" has been used to include the activities of CEPANZO and PANAFTOSA, as well as other problems connected with human and animal health and disease, e.g., comparative medicine. We have found it much more appropriate to consider the overall PAHO program in "animal health" as one in "veterinary public health" according to general usage.

Veterinary public health as understood in these terms links the work of the veterinary, medical, public health, and allied disciplines with the efforts of the community for the prevention of disease in man and animals as related primarily to the promotion of human well-being.

We recognize the controversy of including foot-and-mouth disease control under the responsibility of a health organization when such a responsibility is based primarily on the importance of foot-and-mouth disease to the nutritional supply of animal protein for the human population, and when foot-and-mouth disease is only very rarely (if at all) transmissible to man as a zoonosis. Furthermore, foot-and-mouth disease control is the responsibility of the agricultural services rather than those of health in all countries.

We have given considerable attention to the problem of whether PANAFTOSA should be under the overall management responsibility of a health organization (PAHO), as is clearly indicated for CEPANZO, or should be transferred to a primarily agricultural authority. We recognize the difficulty in justifying the utilization of funds from the regular budget of a health organization with many priorities exceeding that of the nutritional component of animal protein made available by effective foot-and-mouth disease control. Our conclusion, following discussions with high-level health and agricultural authorities of the countries we visited, is as follows:

Since PANAFTOSA is of necessity an international undertaking, it is essential that the responsible management authority is a well-established one with the necessary structure and prestige to command the confidence and cooperation of member states. PAHO admirably meets these requirements, and should certainly continue to fulfill this function until a suitable alternative is found or matures over time. Until the latter occurs, and in fairness to some objections raised with respect to the use of funds intended primarily for human health purposes, it is suggested that Ministries of Agriculture of PAHO Member Countries play a more active role in obtaining funds from internal resources generally, rather than depending primarily on the health sector and the usual PAHO assessment.

We consider that PANAFTOSA has been created primarily to fulfill the needs of the Americas. Its program and administration should therefore reflect this fact. IICA may well develop over the years to reach an equivalent standing in the agricultural field as PAHO has with respect to human health. This possibility should be closely followed, and appropriate action taken for transfer of foot-and-mouth disease responsibilities from PAHO to IICA, if and when the latter organization reaches the stage of development where the Member Countries have confidence that the continued effectiveness of PANAFTOSA will be insured. At best, many years will be required before this requirement could be met.

B. SOME PUBLIC HEALTH AND ECONOMIC ASPECTS OF THE ZOONOSES AND FOOT-AND-MOUTH DISEASE

The justification for the establishment, present operations and future development of CEPANZO and PANAFTOSA rests on the degree of improvement in human health and economic savings derived by Member Countries of PAHO. Because of large gaps in information on these subjects, we have had to depend on rough estimates and illustrative examples obtained from limited surveys and analyses. Even the relatively imprecise information available indicates that greatly adverse effects on human health and staggering losses to the economy of Member Countries occur each year, which could be markedly reduced with relatively very small financial outlay by Member Countries for the implementation of selected disease control programs. We are convinced that a central requirement for achieving the potential for remarkable savings to the economy and improvement in public health of Latin American countries, which is perhaps insufficiently appreciated, rests on the effective functioning of CEPANZO and PANAFTOSA. Let us now examine a few specific examples:

1. Brucellosis

Brucellosis is known to be widespread in animals and man throughout the Latin American countries. In one country alone, it is estimated that over US\$100 million is lost annually to the animal economy, and the highly debilitating, chronic and sometimes mortal disease in man afflicts thousands of people. For all of Latin America, brucellosis causes losses amounting to \$600 million annually, with over 3,000 human cases reported for 1977.¹ The actual number of human cases is probably 5 to 10 times higher.

2. Bovine Tuberculosis

In the same country in certain areas about 5 per cent of cattle show lesions at slaughter, resulting in the condemnation of many hundreds of tons of meat at slaughter each year. Some 3 per cent of human tuberculosis in one area surveyed are caused by the bovine type of tubercle bacillus. Scattered information on tuberculosis in other Latin American countries indicates that, in many of them, similar losses occur roughly equivalent to their human and animal population. For the Americas, total losses, not counting costs for disease control programs, amount to about \$100 million annually for animal tuberculosis.

¹Pedro N. Acha and Boris Szyfres, Zoonoses and Communicable Diseases Common to Man and Animals, PASB Sci. Pub. No. 354, 1980.

3. Rabies

Some 250,000 humans in Latin America annually must undergo the highly unpleasant and prolonged vaccination therapy because of exposure to rabid animals. Apart from the mental and physical suffering, millions of man-hours loss of work are involved because of the necessary therapy. In addition, some 500,000 cattle are estimated to die each year from bat-transmitted rabies, causing losses of \$50 million annually. During the 1970's over 3,000 people died from rabies in Latin America.

4. Hydatidosis

Surgery is as yet the only resource for the hundreds of human cases which occur each year in the heavily contaminated countries, especially in southern Latin America. Condemnation of meat from infected animals runs into hundreds of tons yearly. Over 1,000 human cases were reported in 1977 in affected countries of Latin America.

5. Food-borne Infections

Tens of millions of cases occur in Latin America annually, and the diarrheas of infants and children largely caused by this group of infections are the major cause of infant morbidity and mortality.

6. Other Zoonoses of Importance

These include the equine viral encephalitides infecting man and animals in northern Latin American countries, tapeworms in man and the corresponding larval form of cysticercosis in pigs and cattle, other internal and external parasitic infections of man and animals, leptospirosis, and other less common infections.

7. Foot-and-Mouth Disease

It has been estimated that the eradication of foot-and-mouth disease from Latin America would mean an increase in production levels of 350,000 tons of meat and 500,000 tons of milk per year. In other terms, it has been shown that the cost/benefit ratio from eradication of foot-and-mouth disease in a country is about 1 to 5, i.e., for every dollar invested in an eradication program, the benefit derived is \$5 per year. Introduction of foot-and-mouth disease into the United States of America could result in a loss of \$12,000 million (\$12 billion) over a period of years through increased costs to consumers for animal products.¹

¹E. Hunt McCauley et al, A Study of the Potential Economic Impact of Foot-and-Mouth Disease in the United States (USDA, May 1979, U. of Minnesota, St. Paul, Minn. 55108), TB-1597.

C. THE CENTRAL ROLE OF CEPANZO AND PANAFTOSA

As mentioned under sections which follow, CEPANZO and PANAFTOSA have established an infrastructure of trained personnel for Member Countries, a unique communications and surveillance network, and the standardized laboratory procedures with respect to the relevant biological products (diagnostic reagents and procedures for production and testing of vaccines) for many of the major diseases mentioned above. The coordinating and stimulating function of both laboratories, in addition to the continued training of personnel and further applied research required, are essential requirements for the successful application of field control programs in all countries. The disappearance of either one of the laboratories, or the further decline in effectiveness of operations which is now occurring, would have catastrophic results in the public health and economic domains.

Remarkable progress has been made in the past few years in the scientific planning of disease control strategies, using mathematical modelling with computers. Both CEPANZO and PANAFTOSA have begun work with this very valuable tool, which eventually could be applied to problems in individual countries. Success will depend on increasing the expert strength at CEPANZO and PANAFTOSA, inclusion of these techniques in their training programs, and strengthening the Centers' field operations for the applications of this discipline in the countries themselves.

D. THE SCIENTIFIC ADVISORY COMMITTEE (SAC)

This has been a very valuable peer review mechanism for the activities of both CEPANZO and PANAFTOSA. The continued periodic visits of SAC are indispensable as a stimulus and assessment mechanism for the effective functioning of the Centers. In addition, the distinguished scientists who are members of the SAC often involve their own laboratories in collaborative projects with the Centers, and suggest valuable contacts. Unfortunately, some of their recommendations on specific scientific activities have not been followed as closely as they should have been. This was sometimes due to circumstances beyond the control of the staff of the Centers (e.g., restricted budget and personnel), but this was not always the case (see working documents of the RICAZ X, XI and XII and RIMSA I meetings for recent SAC reports).

PART II - THE CENTERS

In the following sections on CEPANZO and PANAFITSA we have confined ourselves to the highlights of the most important aspects which, in our view, bear upon the crucial questions concerning the Centers to be considered by the Executive Committee and the Directing Council. Extensive documentation is available on the Centers.

The financial crisis faced by the Centers during the past one or two years has interfered greatly with the work of the Centers because of "frozen" personnel posts, financial instability due to inflation, uncertainty about continued activities and other factors, all of which inevitably affected the morale of the staff. The resultant severe disruption and decline in effective work, unless corrected in the near future, will jeopardize the entire undertaking.

Apart from the assessment of technical activities and their value to Member Countries, we have looked briefly into some of the management practices of the Centers in the light of their restricted budgets and adverse circumstances mentioned previously. Unpleasant decisions had to be made by the Directors of the Centers to effect budget savings and to continue minimal activities. In certain instances errors in judgement seem to have been made in tailoring activities on a priority basis, but we consider such mistakes to be understandable in view of the great demands on their services made by Member Countries. In our following analysis, we shall make suggestions which we hope will bring more clearly into focus the activities which should be given priority in the future.

A. THE PAN AMERICAN ZOONOSES CENTER (CEPANZO)

1. General Considerations

In the some two decades of its operation, CEPANZO has established a solid foundation of trained personnel throughout Latin America, who should now be exploited to the fullest in drastically reducing the equivalent of hundreds of millions of U.S. dollars lost annually from the major zoonoses throughout the Continent, not to speak of the incalculable human suffering and deaths caused by these diseases. The achievement of an infrastructure of trained personnel has been accompanied by clarification through research of many problems in the major zoonoses involved, namely brucellosis, tuberculosis, rabies, and hydatidosis, and in food hygiene. Standardization of diagnostic procedures and methods for producing and testing the relevant biological products, e.g., vaccines, diagnostic antigens and sera, for which CEPANZO has been responsible, are of immense importance for controlling the diseases on an international basis.

We should like to state categorically that, in our view, it is inconceivable that CEPANZO should disappear, or be reduced to a state of ineffectiveness, through undue constriction of its activities. Such a step would negate much that has already been accomplished, and would severely impede and perhaps delay indefinitely the action at the national level which must now be undertaken to reap the immense potential benefits, only a fraction of which has been achieved thus far.

This new stage of operations, involving the careful planning and management of disease control programs in the individual countries and the application of proven methods of disease control and their reduction, will require some reorientation of CEPANZO programs. These should be directed primarily towards assisting Member Countries in formulating disease control strategies for the individual countries and the Region as a whole, and the implementation of such strategies in the field. Thus, a shift should be envisaged for CEPANZO operations away from the laboratory research which was necessary until now, although continued applied research on carefully selected problems on a priority basis will be needed. The shift should be towards increased back-up (confirmatory) functions for national laboratory services, and for training, as well as a concentration on alternative strategies of disease control operations based on specific conditions prevailing in individual countries. CEPANZO operations and personnel during the next decade, therefore, should be field-oriented rather than concentrated in the Center itself. This will inevitably require some changes in staff to accommodate the needed reorientation of programs, but we do not foresee that this will result in any reductions in the overall budgets of CEPANZO. In fact we anticipate a need for an increase in funding over past ceilings if CEPANZO is to fulfill its mission. The resulting considerable gains in economic savings and human health to Member Countries will repay one hundredfold the modest amount necessary for CEPANZO to carry out its crucial tasks in planning, coordination, training, laboratory services, and applied research.

2. . CEPANZO Headquarters

The present housing of the CEPANZO laboratories in Ramos Mejia is totally inadequate, unsuitable, and even dangerous with respect to the pathogenic organisms with which CEPANZO must deal. The highest priority must therefore be given to the finding of a suitable location and the construction of new housing for CEPANZO.

A special study and consequent negotiations for this purpose must be undertaken as soon as possible. In the meantime every possible precaution must be invoked for the secure containment of pathogens by the designation of a responsible officer and a committee of the Unit chiefs to enforce strict laboratory discipline. A temporary stoppage of work

with the most virulent strains of microbes (brucella, rabies, tuberculosis) may have to be invoked until better conditions are secured.

Brucellosis

The basic laboratory procedures, training of personnel, and necessary research have been accomplished satisfactorily. The present staff cannot cope with the demands for services, especially with respect to the inauguration of country programs in the field. The latter is a grave defect which can be overcome only by the realization by the countries themselves of the urgent need for vigorous control programs aided by CEPANZO staff and consultants working in and with the countries themselves on a sustained basis.

Bovine Tuberculosis

A similar situation exists to that described for brucellosis above, with the added defect that the lack of staff has prevented any field activity whatsoever.

Rabies

An excellent basis exists at CEPANZO with respect to laboratory procedures and training. Field services require strengthening.

Hydatidosis

Excellent work is being done in CEPANZO, one of the few laboratories throughout the world which is working on this disease. The present staff cannot fulfill requirements for field operations.

Food Hygiene

This highly important subject needs additional strength and emphasis, especially for the expansion of work from purely microbiological aspects to the development of overall food hygiene programs in the countries themselves.

Information Services; Disease Control Planning

The library and information services are well run, but badly need more adequate quarters and facilities. Reporting is very deficient, and could be improved by integrating with the surveillance and reporting services of PANAFTOSA. Statistical and strategic planning for disease control would greatly benefit by adoption of the recent developments in techniques in this field.

Leptospirosis

Work on this disease has been confined to the laboratory, and no field operations of any significance are being pursued. This subject is of lower priority to the others mentioned above, and unless ample funds are made available for other priority needs, it is suggested that responsibility for this disease be transferred elsewhere, e.g., to the Caribbean area, where the disease is of apparently greater importance.

Pathology Unit

The functions of this unit do not justify its continuance, and the personnel involved should be transferred or substituted for assistance to other needy units.

Azul Facility

This does not justify the expense involved, and should be phased out. The functions of laboratory animal supply and a reduced number of dog cages for hydatidosis and rabies work could be envisioned at the new location of the Center.

3. Summary of Priorities

The indispensable critical mass for CEPANZO activities includes rabies, brucellosis, tuberculosis, information services, disease control planning, and food hygiene. Hydatidosis follows closely on this group because of the very few laboratories in the world working on this problem. If necessary, although not desirable, other activities can be reprogrammed during the transition period to meet the personnel needs of the disciplines mentioned, so that the presently "frozen" post replacements can be taken care of and shifts of redundant posts to field and other operations mentioned above can be rapidly implemented. Urgent steps should be taken for the construction of new housing at a different site.

B. THE PAN AMERICAN FOOT-AND-MOUTH DISEASE CENTER (PANAFTOSA)

1. General Considerations

In a previous section we dealt briefly with the immense importance of foot-and-mouth disease to the economy and to the supply of animal protein for Latin American countries. These factors are apparently insufficiently appreciated by the countries which have benefited from the activities of PANAFTOSA over the past quarter of a century. We should like to emphasize that PANAFTOSA stands at a critical crossroads in the

effectiveness of its activities. There is a real danger that unless prompt action is taken to resolve certain major problems we have observed, a rapid and highly costly decline of efficiency will occur which would take many years to repair. These problems include:

- a. Inadequate housing and facilities
- b. Understaffing in important units
- c. Insufficient budget to ensure the maintenance of a high scientific level of work by the senior staff through refresher training and participation in scientific meetings, more frequent visits of specialized consultants, and the provision of modern laboratory apparatus and related materials.
- d. The need for expanded field operations to exploit more fully the infrastructure now established in Member Countries of personnel who have been trained in PANAFOTSA.

2. Accomplishments of PANAFOTSA

These can be summarized as follows:

- a. The creation of an infrastructure of trained personnel which is now available in most countries. It should be noted that because of a relatively rapid turnover of such personnel in various countries, the PANAFOTSA training program will have to be continued unabated, and refresher courses will be required to update their knowledge in the light of scientific and field developments with respect to foot-and-mouth disease.
- b. The establishment of standardized laboratory techniques and a field surveillance and reporting system throughout the Latin American continent.
- c. The vast improvement in the quality of vaccines used in Latin America, which is a key prerequisite for successful control. Much remains to be done, however, and vigilance will have to be maintained. PANAFOTSA remains an essential component in this connection through its checks on quality control.
- d. The development of a new oil emulsion vaccine which is superior to vaccines now commonly used for foot-and-mouth disease.

- e. The provision by PANAFTOSA of advisory services and training in all the aforementioned fields, which has enabled countries to score striking successes, e.g., eradication of foot-and-mouth disease in Chile, and much more effective control in such countries as Argentina, Brazil, and Colombia.

We must stress, however, that progress in many countries has been uneven, and many gaps exist. Extension of control activities to as yet uncovered areas and more energetic application of already available resources and knowledge of course depends upon the countries themselves.

3. Physical Facilities

As the Scientific Advisory Committee (SAC) and other groups have pointed out repeatedly in the past, the physical plant facilities and location are inadequate in every respect, and fall below the norms expected of an international laboratory. The major defects noted are as follows:

- a. Physical security at the periphery and in the buildings themselves to prevent the escape of foot-and-mouth disease virus is completely unacceptable. While the staff have made efforts to correct these faults within their budgetary constraints, such patchwork efforts cannot begin to correct the situation and immediate steps should be taken to construct a new facility corresponding to the needs of a foot-and-mouth disease laboratory (rigidly separated clean and infected areas, controlled air flow pressure in infected premises, disinfection of effluents leaving the plant, etc.).
- b. Deficient energy supply to take care of present needs and especially for emergencies (e.g., breakdowns in refrigerators and air conditioners which frequently occur).
- c. Inadequate quarters for both laboratory (mice, guinea pigs) and large animals (cattle, pigs, sheep).
- d. Inadequate laboratories for diagnostic services.
- e. Deterioration of foundations, causing cave-ins of floors.
- f. Widely-spaced buildings which should be clustered or arranged on a modular basis.
- g. The laboratory is unsuitably located because of local population pressures immediately surrounding the premises, and its distance from other scientific laboratories with which intellectual and actual sharing of laboratory procedures could profitably be pursued.

We consider that a new location and construction of new facilities should be of the highest priority. In the meantime, and until new quarters are completed, a special maintenance fund should be provided to correct glaring deficiencies in the present quarters.

4. Staffing

The inability to fill vacant posts and to attract high-level scientists because of the limited-term nature of appointments offered under present budgetary constraints has contributed to an inevitable decline in both the quality and quantity of services which PANAFTOSA can provide. If this continues for any length of time, irreparable damage may result. The morale of the staff has already suffered considerably, badly needed applied research has come almost to a standstill, and the rapid advances in virological science cannot be implemented. Refresher training of the scientific staff in laboratories abroad should be augmented as soon as possible.

It is a credit to the present staff that, despite all difficulties and the over-extension of their responsibilities, operations have continued with reasonable efficiency. But this cannot be expected to continue.

Of particular importance is the need to strengthen the units concerned with epidemiological studies and planning strategies for disease control employing recently developed methods for computer modeling. Because of the variation in conditions in different countries, strategic planning will have to be adapted individually for these countries. At least two more full-time staff at PANAFTOSA are needed for this purpose, along with periodic visits by expert consultants in this discipline working in cooperation with national control authorities.

Three additional staff are also required for field operations, which now call for greatly intensified activities for the application of knowledge and the use of resources built up in PANAFTOSA over the years, e.g., potency testing of viruses.

5. Application of PANAFTOSA Resources to Other Diseases

The unique information and surveillance network, as well as the laboratory scientific base of PANAFTOSA, can be extended from foot-and-mouth disease to other diseases of both purely veterinary and public health importance. Public health authorities in the individual countries could well take advantage of the surveillance and reporting network of PANAFTOSA in rural districts for human diseases such as encephalitis, gastrointestinal outbreaks, hemorrhagic fevers, etc. On the veterinary side, African swine fever and other epizootic diseases could likewise be covered by the surveillance and reporting network, where this is not already being done.

The high-level expertise of PANAFTOSA in virology could be exploited by collaborating with nearby and other virus laboratories throughout Latin America in developing a Latin American network for comparative virology, which would be independently competent with respect to identification and standardization of reference preparations for animal virus agents of human and veterinary importance throughout the Continent, e.g., influenza, arboviruses, African swine fever. This important resource is now lacking in Latin America, and continued dependence on other countries for this activity is most unsatisfactory.

C. GENERAL CONCLUSIONS

In this progress report, we have been able only to indicate major problems and their partial resolution through specific steps and action with regard to personnel, facilities, and reorientation of programs. The precise budgetary implications are outside our remit, and must be formulated by the responsible administrative units in CEPANZO, PANAFTOSA and PAHO Headquarters. It is clear that additional funding must be sought from voluntary sources and/or from international funding agencies. We are firmly convinced of the need for both CEPANZO and PANAFTOSA to continue on an improved basis, which will be possible only through better physical facilities and adequate funding. In the last analysis, it is the Member Countries themselves who must make the necessary decisions and provisions for these purposes.

In the light of our analysis to date, it is clear that any further constriction of funds available to the Centers would have very adverse consequences. It is strongly recommended, therefore, that, as for 1980, a supplemental budget for 1981 be approved.

In addition, we urge that steps be taken to seek voluntary and other external contributions to permit a more effective functioning of the Centers.



EXECUTIVE COMMITTEE OF
THE DIRECTING COUNCIL

PAN AMERICAN
HEALTH
ORGANIZATION

WORKING PARTY OF
THE REGIONAL COMMITTEE

WORLD
HEALTH
ORGANIZATION



84th Meeting

84th Meeting

CD27/22 (Eng.)
ANNEX IV

RESOLUTION XXI

EVALUATION OF THE PAN AMERICAN ZONOSSES CENTER (CEPANZO) AND THE PAN
AMERICAN FOOT-AND-MOUTH DISEASE CENTER (PANAFTOSA) AND
RECOMMENDATIONS ON BUDGETARY ADJUSTMENTS FOR 1981

THE EXECUTIVE COMMITTEE,

Having examined the progress report of the external Evaluation Team for the Pan American Zoonoses and Foot-and-Mouth Disease Centers (Document CE84/21 and ADD. I) and Resolution XXVII of the XXVI Meeting of the Directing Council;

Noting that the Evaluation Team recognized the important contribution of these Centers to the agricultural and economic sectors, in addition to the health sector, and that the justification for the establishment, present operations and future development of PANAFTOSA and CEPANZO rests on the degree of improvement in human health and economic savings derived by Member Countries;

Recognizing the importance of the immediate collection of economic impact data to provide a sound basis for requesting financial and other support from outside the health sector and that additional information is currently being gathered prior to the completion of a final report by the Evaluation Team for submission to the XXVII Meeting of the Directing Council;

Acknowledging the favorable view of the XXVI Meeting of the Directing Council, stated in Resolution XXVI, to keep the Pan American Foot-and-Mouth Disease Center attached to PAHO, and the recommendation of the Evaluation Team that the term "veterinary public health" is a more appropriate title than "animal health" in describing the overall PAHO program in this field;

Considering the priorities developed by the Team for CEPANZO and PANAFTOSA, in the context of the health priorities of the total PAHO program;

Bearing in mind that the aforementioned progress report does not provide a sufficient basis for recommending a budgetary supplement to the regular quota assessment for 1981; and

Considering that a final evaluation report will be presented to the XXVII Meeting of the Directing Council,

RESOLVES:

1. To recommend to the XXVII Meeting of the Directing Council that it urge the participating Governments to assume a larger share of the operating costs of the Centers in order to maintain their operations at present levels.

2. To recommend to the XXVII Meeting of the Directing Council that, during its deliberations regarding the two Centers, special attention be given to the conditions at CEPANZO which may require a temporary stoppage of work with virulent strains of microbes.

3. To thank the Director for the progress report on the Pan American Zoonoses Center and the Pan American Foot-and-Mouth Disease Center.

4. To request the Director to consult with participating Governments on the reorientation of the programs of the Centers, so that they will redefine their respective priorities during the necessary transition period of budgetary restraint.

5. To request the Director to assist the Host Governments in seeking alternate sources of funding for relocation, construction, and maintenance.

6. To suggest to the Director that he consider whether the term "veterinary public health" is a more appropriate title than "animal health" in describing the overall PAHO program in this field.

(Approved at the eighth plenary session,
26 June 1980)