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IN REPLY REFER TO:

**Inter-American Investigation of Mortality in Childhood**

**NUTRITIONAL ASPECTS OF THE INVESTIGATION**

**Report of Internal Meeting**

**March 16-18, 1970**

**23 April 1970**

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# Inter-American Investigation of Mortality in Childhood

## NUTRITIONAL ASPECTS OF THE INVESTIGATION

Internal Meeting  
March 16-18, 1970

### I. INTRODUCTION

The Inter-American Investigation of Mortality in Childhood is a continental collaborative study aiming to develop accurate and comparable statistics related to causes of death in children under 5 years of age in fifteen widely separated areas of the Americas.

The multiple cause concept, as applied in the Investigation, implies the exhaustive study and inclusion of all the disease conditions known to have participated directly or indirectly in each death. The disease conditions are being classified according to their sequence and interrelationships, starting with the selection of the underlying cause of death. By this method a better understanding is obtained of diseases and their associations and thus a sounder basis for recommendations for their prevention.

As the Investigation progresses the outstanding role of nutritional deficiencies is evident, in particular the forms of protein-calorie malnutrition, as underlying or associated causes of death in children. Study of a probability sample of families and of children under 5 years of age as part of the Investigation will permit a better understanding of environmental as well as medical factors (including the nutritional state) that determine mortality.

The World Health Organization has asked the cooperation of the Regional Office of the Americas in relation to study of the general structure of the International Classification of Diseases and of the extent to which it fulfils the requirements for the Region. This Office has been asked to make a review of the diarrheal and infectious diseases in general as well as of the rubrics concerned with the nutritional deficiencies.

Furthermore, the Pan American Health Organization believes that the valuable and rich data being obtained from the Inter-American Investigation of Mortality in Childhood should be used to the greatest extent possible for better understanding and solution of the health problems in children. In view of the preceding considerations, an internal meeting of advisers was organized with the following objectives:

1. To review the criteria adopted by the Investigation to evaluate nutritional state and to classify nutritional deficiencies in the light of the rules for classification of multiple causes adopted by the Investigation.
2. To review the aspects of terminology and classification of nutritional deficiencies and to formulate recommendations for the Ninth Revision of the International Classification of Diseases.
3. To study the mechanisms by which optimum use of the results of the Investigation may be achieved in general and specifically for programs in nutrition and in related fields. This utilization of results may be at local, national and international levels and in fields such as health programs, educational programs in health sciences and further or complementary research.

## II. CRITERIA ADOPTED BY THE INVESTIGATION IN RELATION TO NUTRITIONAL DEFICIENCIES

After a brief description of the procedures followed in the field and in the central office, the method used for classifying multiple causes was presented. The group was in full agreement with the division of conditions in the three categories of underlying cause, contributory conditions and consequential conditions. This method, although not possible to be applied in mortality statistics at present, is probably the best method for understanding the disease conditions and their relationships.

The nutritional evaluation, based on dietary history, clinical and pathological findings and graded by the Gomez scale, was found adequate for this type of study. It was recommended that the data on arm circumference from autopsy and from living children be used to evaluate the effectiveness of this measure of nutritional state and its correlation with other methods. The opinion was stated that the Gomez scale was not intended for diagnostic purposes but as a method of grading the degree of nutritional deficiency once the diagnosis was established. The diagnosis is made clinically and pathologically.

The criteria adopted for classification and coding of nutritional deficiencies as underlying or associated causes of death were found satisfactory and simple. The group also found adequate the criteria adopted for evaluation of nutritional state at birth.

### III. PROVISIONAL FINDINGS FROM THE INVESTIGATION REGARDING NUTRITIONAL DEFICIENCIES

Provisional results were presented for a few areas from preliminary analysis of deaths that occurred during the first six months of the investigation. The percentage of deaths in which nutritional deficiencies were found to be the underlying or associated causes of death was high in the areas for which data have been analyzed. For the age group six months through four years of age, the percentages were very high in Recife, 69 per cent, and in La Paz, 63 per cent. In Jamaica and Santiago the comparable percentages were lower, 44 and 42 per cent respectively. Also in Monterrey, Mexico and in El Salvador preliminary tabulations indicate that in the age group six months through four years of age nutritional deficiencies were an underlying or associated cause in close to 60 per cent of the deaths. Thus these early results of analyses indicated that by obtaining data on associated as well as underlying causes the problem of nutritional deficiencies was being defined and that it was a very serious health problem in these areas of Latin America. Thus it was felt that this problem is probably the most important health problem in many developing countries and should be brought to the attention of public health workers and all those concerned or responsible for planning and/or developing health and other social programs.

The analysis of deaths in Recife, Brazil for the six-month period July - December 1968 was used to illustrate the interrelationships of nutritional deficiencies and infectious diseases. In this six-month period, 921 deaths of children under five years of age occurred in the three sectors of Recife in the investigation. Of the 251 deaths in the first 27 days of life the underlying and associated causes were principally due to conditions of the mother, complications of delivery and other perinatal conditions. Immaturity was an important associated cause in over 60 per cent of the deaths. Of the deaths that occurred after the neonatal period, nutritional deficiencies were the underlying or associated causes of high proportions of the deaths in all age groups. In deaths from 28 days through five months of age, 58 per cent had nutritional deficiency as an underlying or associated cause. In many of these deaths the nutritional deficiency was associated with diarrhea.

Special attention has been given to the interrelationships of causes in the 429 deaths of children six months through four years of age. During this period an epidemic of measles, superimposed on a serious endemic situation, occurred in Recife resulting in 187 deaths. Nutritional deficiency was the associated cause in 136 or 73 per cent of these deaths. In 7 or 4 per cent it was considered the consequence and in 129 or 69 per cent the contributory cause. There were 58 deaths due to diarrhea or other intestinal infectious disease as the underlying cause; in

these deaths nutritional deficiency was more frequently the consequence (47 per cent) than the contributory cause (29 per cent). For 112 deaths due to underlying causes other than the infectious and parasitic diseases and nutritional deficiency, nutritional deficiency was an associated cause in one-half.

Of the 295 deaths in which nutritional deficiency was the underlying or associated cause in this age group, the types of deficiencies to which deaths were assigned according to the International Classification of Diseases were as follows:

Protein deficiency	(267)	104 deaths
Nutritional marasmus	(268)	75 deaths
Other nutritional deficiency	(269)	116 deaths

No death in Recife was due to avitaminosis and coded to a category in 260-266 of the group, Avitaminoses and Other Nutritional Deficiency (260-269). In all projects the single vitamin deficiencies are not the ones responsible for deaths in the areas with severe deficiencies in diets. Deaths are usually due to multiple deficiency syndromes such as kwashiorkor.

Preliminary data from the sample of living children indicated that in Recife 64 per cent of the children under five years of age had some degree of malnutrition according to tables based on the Gomez scale but modified to allow for variations in birth weight and that 25 per cent have second or third degree malnutrition. For Jamaica the provisional percentage of living children under five years of age with second and third degree malnutrition was 11 per cent or less than one-half that in Recife. The percentage of children with first degree malnutrition was the same in the two areas.

Data regarding breast feeding are obtained by the nurse in the social interview. In Recife of the deceased children who survived to six months of age 64 per cent were less than one month of age when weaning was initiated or were not breast fed at all.

Within the next few months further analyses of the data from the Investigation will become available. However, the evidence of the seriousness of the problem of nutritional deficiency is sufficient to initiate plans for use of the data for actions in health programs.

#### IV. TERMINOLOGY, CLASSIFICATION AND CODING OF NUTRITIONAL DEFICIENCIES

##### Background

Regional Advisory Committee on International Classification of Diseases in 1961, 1962 and 1963 made specific recommendations on infectious diseases, diarrheal diseases and nutritional deficiency diseases for the 1965 Revision of the International Classification. As a result of the first meeting held in February 1961, the Latin American Center was responsible for studies on terminology and of trials working with individuals in several countries. The Center prepared a document containing procedures for trials for study of the proposed categories for nutritional deficiencies and diarrheal diseases to determine the applicability of proposed changes and the problem of terminology. Field work was carried out in Argentina, Colombia, Panama, Peru and Venezuela. Provisional proposals were developed for Section I, Infective and Parasitic Diseases and for Nutritional Deficiency Diseases and Nutritional Deficiency Anemias, which were sent in February 1963 to Ministers of Health for comments. The suggestions received from seventeen countries and territories were considered in the preparation of the Regional Proposal given in the Third Report. This Regional Proposal in 1963 for the Eighth Revision designated the Section as follows:

Nutritional Deficiency Diseases with the following two parts:

1. Protein, Calorie and Other Nutritional Deficiency
2. Avitaminosis

The order of categories of the Regional Proposal was not accepted and the nutritional deficiency diseases have continued to follow the avitaminoses and the name has continued to be Avitaminoses and Other Nutritional Deficiency.

However, the three following categories were included in the 1965 Revision, namely:

- 267 Protein malnutrition
- 268 Nutritional marasmus
- 269 Other nutritional deficiency

The emphasis on avitaminoses, which are rare as single causes of death or of morbidity, does not seem advisable and a reordering of the categories and the naming of this section might be proposed as well as study of the terminology, inclusions and the fourth digits for great specificity.

The FAO/WHO Expert Committee on Nutrition<sup>(2)</sup> made recommendations in 1961 for revision of the International Classification of nutritional diseases. The Joint Committee proposed that extensive revision be made in the listings of nutritional diseases in keeping with advances in the understanding of these conditions and in order to reveal the role of nutritional factors in morbidity and mortality. It proposed that the tentative classification be subjected to tabulation trials, including multiple cause tabulations where possible, in a number of regions in order to determine the problems which might arise in its application.

In such diseases as tropical ulcer, diarrheas of infectious origin, tuberculosis, measles and bronchopneumonia, malnutrition is almost always a contributory cause of morbidity or mortality. Accordingly, the Joint Committee recommended that death certificates include mention of severe malnutrition whenever it occurs concurrently with the immediate cause of death or primary disease. In addition the Joint Committee believed that recognition should be given to the occurrence of diarrhea as a consequence of under-nutrition and it recommended that the revised classification of diarrheal diseases include such a category.

The 1965 Revision of the International Classification of Diseases considered the above recommendations and some of those proposed were adopted. The 1965 Revision is an improvement over the former Revisions with respect to the nutritional diseases. Additional improvement is needed, however, if the Classification is to be effective in identifying the problem of nutritional deficiency in all parts of the world.

#### Difficulties in 1965 Revision

The major difficulties in the present Revision are summarized briefly:

1. In order to give emphasis commensurate with the seriousness of the problem, nutritional deficiencies should be treated as a separate section in future Revisions. If this cannot be done for the 1975 Revision it should be considered for the following one.
2. The title of the cause group, Avitaminoses and Other Nutritional Deficiency does not reflect the major portion of the problem for developing countries and should be changed to Nutritional Deficiencies. The order of presentation within the group fails to recognize the order of magnitude of the problem. Protein-calorie malnutrition should be listed first.
3. The intermediate forms of protein-calorie deficiency states are the most common. According to the classification scheme of the Eighth Revision they have to be grouped in the residual category 269.9. Thus their importance is masked.

4. The name 'protein malnutrition' for category 267 gives the impression that it is the only form of protein deficiency.
5. The terms famine edema, nutritional edema and others included in the index as part of the residual category are really forms of protein-calorie deficiency with edema, Kwashiorkor type, and should be included in category 267.
6. The late effects of protein-calorie deficiency cannot be classified as such in the present scheme, neither is it possible to differentiate the acute types of nutritional deficiency.
7. Some of the terms included in the 1965 Revision are obsolete and current terminology should be adopted.

#### Suggested changes

1. A proposed classification with the inclusion terms was developed and follows:
2. Sprue and steatorrhea (269.0) and malabsorption syndrome, unspecified, (269.1) should be transferred to Section IX, Diseases of the Digestive System.
3. The group noted the inclusion of Avitaminoses and Other Nutritional Deficiency (260-269) in List B, the list of 50 causes recommended for tabulation. It is expected that this will result in better information regarding these diseases. Since protein-calorie malnutrition is serious in the developing countries, the group recommended their separate tabulation in List A in the next Revision.
4. The group discussed at length the relationship of nutrition and infection, particularly in connection with diarrhea, measles and whooping cough. The need for recognition of multiple causation in morbidity and mortality was stressed. There is a need for expansion from the underlying cause concept to include coding and presentation of associated causes as well.

#### Actions to be taken

1. In order to obtain comments and suggestions circulation of the proposed classification is recommended to the following:
  - a) To individuals with experience in pediatrics and nutrition problems.

- b) To selected hospitals and health services for evaluation of its usefulness with regard to morbidity. The Latin American Center in Venezuela can help in this circulation.
- c) To recognized institutions specializing in nutrition, such as INCAP and the Caribbean Food and Nutrition Institute and to national institutes of nutrition.
- d) To nutrition advisers of PAHO at the meeting in the latter part of March 1970 in Washington.
- e) To the meeting of regional advisers of WHO on nutrition to be held in June 1970 in Geneva.

It is particularly important that the proposed classification be presented to the next FAO/WHO Expert Committee on Nutrition to be held in Geneva in November 1970. This Committee will discuss the whole concept of protein-calorie malnutrition.

2. The Nutrition Unit in Geneva expects to recruit two consultants in 1971 or 1972 to discuss modifications on the group of nutritional deficiencies to be proposed for the 1975 Revision of the International Classification of Diseases. It would be useful to have a representative of PAHO attend that consultation.
3. According to the timetable for presentation of recommendations for the 1975 Revision proposed actions must be taken without delay. The final recommendations are to be ready by 1972 in accordance with the timetable given in the Appendix.

PROPOSED CLASSIFICATION OF NUTRITIONAL DEFICIENCIES  
(260-269)

Excludes: Deficiency anemias (280,281)

- 260 Kwashiorkor
- Multiple deficiency syndrome
  - Nutritional edema
  - Severe protein deficiency
  - Severe protein malnutrition
- 261 Nutritional marasmus
- Athrepsia
  - Nutritional cachexia
  - Nutritional atrophy
  - Severe under-nutrition
  - Severe calorie malnutrition
- 262 Severe protein-calorie malnutrition, unqualified
- Hunger edema
  - Inanition
  - Severe malnutrition
  - Malnutrition of third degree
- 263 Other and unspecified protein-calorie malnutrition
- 263.0 Malnutrition of moderate degree
    - Malnutrition of second degree
    - Under-nutrition
    - Moderate dystrophy
  - 263.8 Other protein-calorie malnutrition
  - 263.9 Malnutrition, unspecified
    - Calorie malnutrition
    - Dystrophy
- 264 Late effects of protein-calorie malnutrition
- Nutritional dwarfism
  - Physical retardation
  - Arrested development
- 265 Vitamin A deficiency
- 260.0 Xerophthalmia, keratomalacia
  - 260.1 Late effects (e.g. permanent loss of sight).

- 260.8 Other manifestations (e.g. night blindness)
- 260.9 Unspecified
  
- 266 Deficiency of B-complex components
  - 266.0 Beriberi
  - 266.1 Other thiamine deficiencies
  - 266.2 Riboflavin deficiency
  - 266.3 Pellagra
  - 266.4 Other niacin deficiencies
  - 266.5 B6 deficiency
  - 266.8 Other B-complex deficiencies
    - Folic acid
    - Pantothenic acid
    - Biotin
    - Inositol
    - Choline
    - Cyanocobalamine
  - 266.9 Unspecified Vitamin B deficiency
  
- 267 Ascorbic acid deficiency
  - 267.0 Scurvy
  - 267.8 Other
  - 267.9 Unspecified
  
- 268 Vitamin D deficiency
  - 268.0 Active rickets
  - 268.1 Late effects of rickets
  - 268.2 Osteomalacia
  - 268.9 Unspecified
  
- 269 Other nutritional deficiencies
  - 269.0 Deficiency of Vitamin K
  - 269.1 Other vitamin deficiency
    - Vitamin E
  - 269.2 Vitamin deficiency, unspecified
  - 269.3 Mineral deficiency NEC
  - 269.8 Other NEC
  - 269.9 Unspecified nutritional deficiency

## V. POTENTIAL USES OF THE INVESTIGATION

One of the goals of the Investigation is to make immediate use of the results for local, national and international actions. Some actions were introduced during the period of collection of data, as for example, the introduction of measles vaccine in Recife and La Paz and the addition of a local health center in La Paz.

However, plans for actions are being recommended for these levels in the four following fields:

1. Actions through health programs including promotion of multi-sectoral programs. Two PAHO documents (Sc. Pub. 179 and 194) provide useful guidelines in this respect.
2. Vital statistics, hospital statistics and maternal and child health statistics.
3. Education in health sciences.
4. Planning and development of operational research in service projects.

The recommended actions in this document are specifically related to nutrition. Actions directed to the improvement of vital statistics, hospital statistics and statistics in the maternal and child health field will be considered in other meetings.

### Example of Food Program in Health Services in Colombia

The Inter-American Investigation of Mortality in Childhood has shown that protein-calorie malnutrition is of extraordinary magnitude. In the areas of Latin America where the study was carried out, protein-calorie malnutrition contributes to mortality of children under five years of age not only as an underlying cause but also as an associated cause, especially as contributory or consequences of the pathological processes of infectious origin.

The group considered that the magnitude of the problem, confirmed in the study, is indicating the urgent need of strengthening the existing programs of nutrition and of initiating emergency programs for food supplementation and massive vaccination of the vulnerable groups under five years of age; at the same time, developing programs of food supplementation for pregnant women and nursing mothers, which ought to be always accompanied by activities of nutrition education. It was considered advisable to use to the maximum for such programs the aid provided by the World Food Program and food aid from other sources. The introduction of the component food supplementation in the services of maternal and child

health would permit prevention and treatment of protein-calorie malnutrition and augment the assistance of the vulnerable groups to the health services of the area.

As an example of the organization and method of procedure of a program of food supplementation on the basis of supplies of the World Food Program, Dr. Roberto Rueda-Williamson, former Director of Nutrition of the Colombian Institute of Family Welfare, explained to the group the National Program of Nutrition Education and Food Supplementation (PRONENCA) which in 1970 already covers around 2 million beneficiaries. For this program the World Food Program approved in May 1969 food aid, for five years, of 100,000 metric tons of food (powdered milk, canned meat and fish, cheese, vegetables, corn and wheat flour and oil) to the value of \$42.5 million.

The planning and organization of the program was the result of the combined work of several governmental institutions. Its execution is realized through the institutions and government services of health and education and forms part of the official plans in these fields.

In the stage of planning, development and transmittal of the request to the World Food Program, the National Department of Planning, the Colombian Institute of Family Welfare and the Provincial Governments participated. A program was developed with well defined objectives and goals. The plan of operation specifies the vulnerable groups, the rules and the supplementation ratios, the activities of training of personnel and nutrition education, the various services assisted and systems of evaluation of the program. Its financing depends on the combined support of the National and Provincial Governments and the community itself.

The stage of execution has three phases and the development is the responsibility of several units as follows:

- a) The first or the international phase (transportation of the food to the Colombian port) is the responsibility of the World Food Program or of the voluntary agencies (CARE, CRS/Caritas).
- b) The second or national phase (unloading and transportation of the food from the port to the site of intermediate distribution) is the responsibility of the Institute of Agricultural Marketing (IDEMA).
- c) The third or provincial phase (distribution of the food to the beneficiaries, as part of the education programs through the services of health and education) is the responsibility of the Integrated Program of Applied Nutrition (PINA) or of the Regional Services of Health and Education.

The planning and organization of this ambitious program was possible due to the interest taken in it by the President of the Republic, after the magnitude of the problem of protein-calorie malnutrition in Colombia and its consequences on the physical development of the children, which is accompanied often by mental retardation, was explained to him in objective and direct form. Thus it is important to utilize the results of the Inter-American Investigation of Mortality in Childhood to stimulate the interest and support of governments of Latin America for the programs of nutrition.

#### Recommended Actions at the International Level

1. Coordinated PAHO action is advisable at the policy level for planning and program implementation of nutrition programs and central and field levels.
2. PAHO should sponsor operational research, ideally using the staff and interest created in the field projects, to demonstrate the cost and methods of programs leading to the reduction of nutritional deficiency. A coordinating committee is advisable with representation from several disciplines, including nutrition, maternal and child health, communicable diseases.
3. Multilateral, bilateral and national food supplies should be utilized within the framework of maternal and child health services through technically planned nutrition programs.
4. Opportunities should be taken for presentation and discussion of results of the Investigation in seminars, regional conferences and other relevant meetings.
5. It is recommended that the results of the Investigation be distributed as soon as possible to faculties of medicine and other training centers in nutrition and maternal and child health.
6. It is recommended that a meeting be arranged with joint participation of PAHO and UNICEF (and other organizations) for discussion of results and actions to be taken in nutrition programs and maternal and child health services.
7. In addition to the publications of the results of the Investigation, specific findings should be included into several reports so that they will reach various groups and types of specialists.

8. It is recommended that a film be made of the Investigation covering the procedures used in the field and including illustrations of the magnitude of the problems found and suggested actions to be taken.
9. Opportunities for training and research should be provided to well-qualified field staff who have participated in these projects.

#### Recommended Actions at the National Level

1. At the national level coordinating meetings are advisable in order that results be brought to the attention of leaders in the ministries of health and education in the health sciences.
2. It is recommended that the results of the Investigation be used to promote and implement national food and nutrition policy. The document 'Elementos de Una Política de Alimentación y Nutrición en América Latina' PAHO Sc. Pub. 194, 1969, provides the basic procedures for the policy.
3. It is recommended that nutrition activities be included in health services at all levels.
4. Study of economic cost of malnutrition in terms of medical attention should be made to motivate authorities.
5. It is recommended that birth weights be recorded on birth certificates in each country and that provision be made so that babies are weighed routinely at birth and in outpatient clinics and hospitals.

#### Recommended Actions at the Local Level

1. It is recommended that the results of the Investigation be fully utilized at the local level by health services. Many of the actions recommended at the national and international levels are to be carried out at local levels. The policies for nutrition activities at the local level in the health services which were considered in meetings of a Technical Conference in 1968 are given in the document 'Actividades de Nutrición en el Nivel Local de un servicio general de salud', PAHO Sc. Pub. 179, 1969.
2. Operational research is recommended in order that suitable methods of developing and providing food supplies be developed to prevent nutritional deficiencies.

3. It is recommended that growth of children attending outpatients clinics and hospitals be followed by individual charts on which weights are recorded routinely on visits to these institutions.
4. Scales for weighing babies and young children in clinics and hospitals need to be secured and responsible personnel trained in the recording and interpretation of weight charts and the actions to be taken.

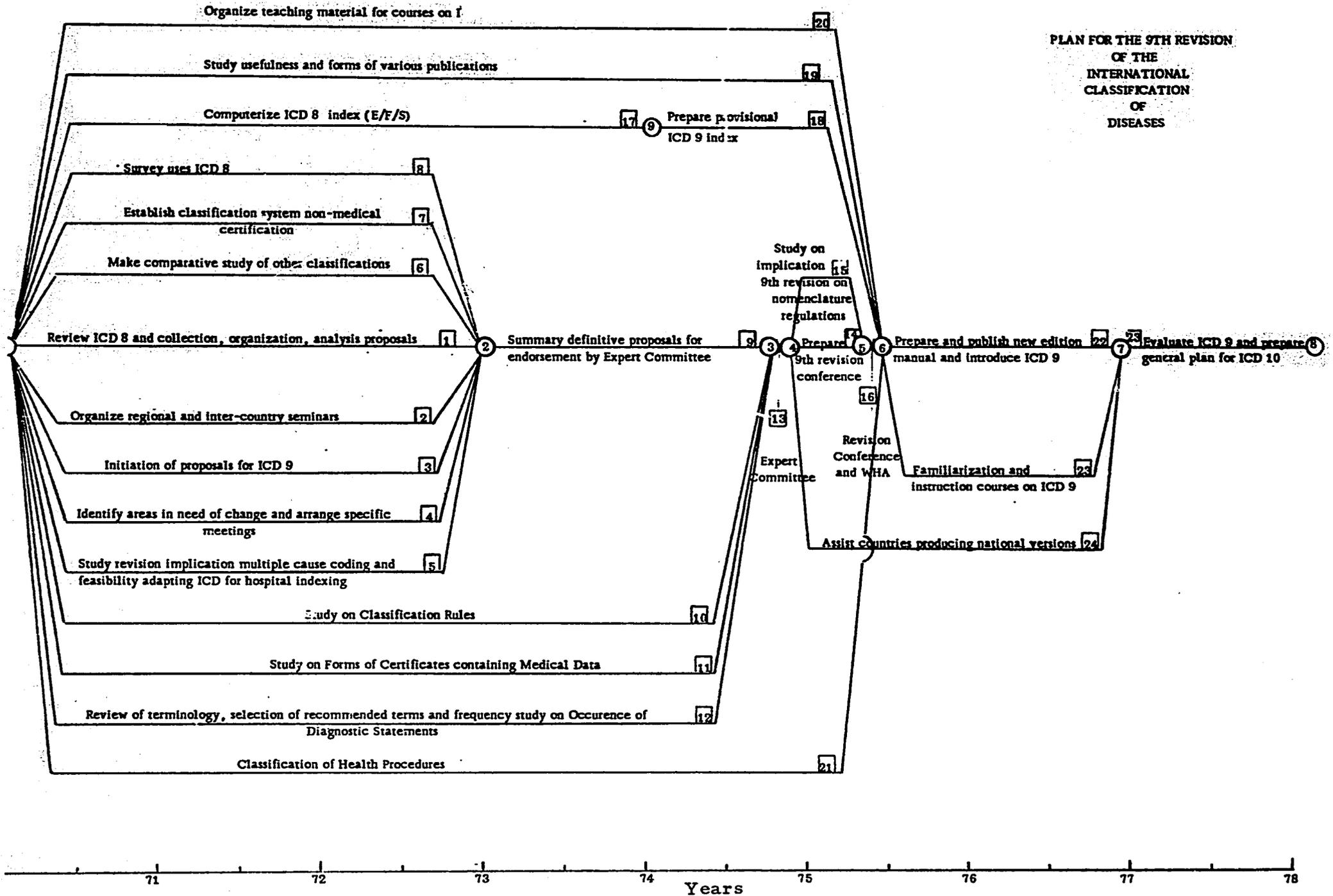
A final recommendation for all levels of health services is that a combined approach in health programs should be applied against infectious diseases and nutritional deficiencies through integrated preventive and curative actions.

#### References

- (1) Regional Advisory Committee on International Classification of Diseases, Pan American Health Organization. First Report Sc. Pub. 53, 1961; Second Report Sc. Pub. 66, 1962; Third Report Sc. Pub. 83, 1963.
- (2) FAO/WHO Expert Committee on Nutrition. Sixth Report, WHO Tech. Rep. Series 245, 1962.
- (3) Elementos de Una Política de Alimentación y Nutrición en América Latina, PAHO Sc. Pub. 194, 1964.
- (4) Actividades de Nutrición en el Nivel Local de un servicio general de salud, PAHO Sc. Pub. 179, 1969.

# APPENDIX

## PLAN FOR THE 9TH REVISION OF THE INTERNATIONAL CLASSIFICATION OF DISEASES



## Annex 2

### List of Publications and Meetings in which Methodology and/or Provisional Results of Investigation Have Been Presented

#### I. Publications:

- Puffer, Ruth R. "Initial Phases of the Inter-American Investigation of Mortality in Childhood." Boletín of the Pan American Health Organization, English edition, 1968.
- , "Fases Iniciales de la Investigación Interamericana de Mortalidad en la Niñez." Boletín of the Pan American Health Organization, Vol. LXV, No. 2, August 1968.
- , "Progreso de la Investigación Interamericana de Mortalidad en la Niñez - Reseña!" Boletín of the Pan American Health Organization, Vol. LXVI, No. 4, April 1969.
- Puffer, Ruth R. and Carlos V. Serrano. "The Inter-American Investigation of Mortality in Childhood." War on Hunger, A Report from the Agency for International Development. Vol. III, No. 11, November-December 1969.
- Aceves S., D. "Investigación Interamericana de Mortalidad en la Niñez!" Salud Pública de México, XI. 471-78, July-August 1969.
- Laurenti, R. "A Investigaçao Interamericana de Mortalidade na Infancia em São Paulo, Brasil." Rev. Saúde Pública. São Paulo 3 (2) 225-229, December 1969.
- Legarreta, A. y Solimanó, G. "Investigación Interamericana de Mortalidad en la Niñez, objetivos y metodología." Cuadernos Médico-Sociales, Vol. IX, No. 4 Colegio Medico de Chile, December 1968.

## II. Meetings:

Tercer Congreso Nacional de Salud Pública. Cartagena, Colombia, December 10-13, 1968.

XII Congreso Nacional de Pediatría. Monterrey, México, April 28 - May 1, 1970.

Conferencia Latinoamericana de Población. Mexico, D.F., Mexico, August 17-22, 1970. Organized by the Latin American Center of Demography.

Congreso Pediatría, Uruguay. Asunción, Uruguay, August, 1970.

Reunião Brasileira de Neonatologia. Brasilia, Brazil, November 18-21, 1970.

Macy's Foundation, Annual Pediatrics Conference. Santiago, Chile, 1969.

Congreso Nacional de Pediatría. La Paz, Bolivia, 1969.

## III. PAHO/WHO Internal Working Meetings:

Consultation Meeting on Growth and Development. Maternal and Child Health Unit, WHO, Geneva, Switzerland, October 1969.

Consultation Meeting on Multiple Causes of Death. International Classification of Disease Unit, Geneva, Switzerland, October 1969.

Internal Meeting on Nutritional Aspects of the Inter-American Investigation of Mortality in Childhood, Health Statistics, Pan American Health Organization, Washington, March 16-18, 1970.

Meeting of Nutritional Advisors in Nutrition. Pan American Health Organization, Washington, March 23-28, 1970.

Internal Meeting on Perinatal Mortality. Planned for Fall, 1970.

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