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Report on the
Inter-American Seminar
for Biostatistics

Santiago, Chile, 1950



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STATISTICAL PAPERS ... SERIES **M**, NO. **9**

**REPORT
ON THE INTER-AMERICAN SEMINAR
FOR BIOSTATISTICS**

Held at Santiago, Chile
From 25 September to 15 December 1950

by

**The Government of Chile
The Statistical Office of the United Nations
The Economic Commission for Latin America
The World Health Organization
The Pan American Sanitary Bureau
The Inter American Statistical Institute
and
The National Office of Vital Statistics of the
United States Public Health Service**

**STATISTICAL OFFICE OF THE UNITED NATIONS
Department of Economic Affairs
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REPORT ON THE INTER-AMERICAN SEMINAR FOR BIOSTATISTICS

I. INTRODUCTION

1. AIMS OF THE SEMINAR

The primary purpose of the first Inter-American Seminar for Biostatistics, held in Santiago, Chile, from 25 September to 15 December 1950, was to assist all the American nations in improving their vital statistics and health statistics so that they might fulfil national as well as international needs. Its specific aims were the following:

(a) To provide a centre of study for training and specialization in the fields of vital statistics and health statistics;

(b) To offer an opportunity for the exchange of ideas on subjects of common interest among statisticians from all the national agencies concerned with vital statistics and health statistics;

(c) To transmit, directly to those statisticians, the international recommendations in the fields of vital statistics and health statistics and to study with them the best ways of putting these recommendations into operation in each country;

(d) To offer to the national statisticians a mechanism for transmitting their own ideas to the international agencies which might use them in their own programmes or as working ideas for recommendations;

(e) To develop uniform methods and minimum requirements for national vital statistics and health statistics;

(f) To establish friendly contacts between statisticians in the Western Hemisphere.

2. ORIGIN OF THE SEMINAR

The aims set forth above were inherent in the resolution 2/8 of the Economic and Social Council adopted on 21 June 1946 by which the Secretary-General, in organizing the Statistical Office of the United Nations, was requested to take into consideration the promotion of development and improvement of statistics. At its subsequent sessions, the Statistical Commission repeatedly emphasized the importance and advisability of providing, under the United Nations and the Specialized Agencies, for courses designed to provide for areas where such facilities are inadequate, training in statistical methods and in particular subject matter fields (E/1312, para. 50/c). In accordance with those recommendations, the Statistical Office has co-operated with the Food and Agriculture Organization and national governments in the establishment of international training centres on census procedures and statistics. The first census training centre was held at Mexico City in 1948 and three others have taken place in 1949 in Cairo, New Delhi and Paris.¹

In the initial training-centre programme, priority was assigned to training in census procedures because of the imminence of the population and agriculture censuses planned for 1950 and 1951. With the completion of enumeration in many countries it was felt that the emphasis which heretofore had been placed on census methods might now be directed to current statistics. The intimate relationship among population, vital statistics and health statistics pointed to the need for initiating training in the two latter fields of statistics in order that these data might complement the census results.

¹ Detailed reports on these four training centres will be found in *Statistical Papers, Series M*, Nos. 2, 5, 6 and 7 published by the Statistical Office of the United Nations.

The intensive interest and activity throughout Latin America in the field of census has resulted in national censuses being taken during 1950 in 14 countries out of 20. With the prospect of new and, in some cases, the first current population data becoming available, it was natural that a Latin American country, should present itself as the appropriate site for a training centre in vital statistics and health statistics.

Much has also been done in this region to improve public health and to raise the standards of statistical practice. Over a hundred experimental health centres have been established, and many Latin American students have visited the United States in recent years to receive training on statistics, censuses, and related matters.

Several universities, schools of public health and other educational centres in Latin America have introduced regular courses on statistics, which are increasing the interest for vital statistics and health statistics among professional personnel.

The changes which are emerging in the vital statistics and health statistics systems are evidence of this very active interest in Latin America, and it was to stimulate and foster these activities that the Seminar, representing not statistical education but study and interchange of ideas and techniques was established in Santiago, Chile. The advantages that homogeneity of language and background of the countries of this region would bestow on the operation of the Seminar were not overlooked.

3. SPONSORS

Because of its well developed statistical services and the internationally recognized prestige of the School of Public Health in Santiago, the offer of Chile to act as host country to the Seminar was an extremely important factor in its establishment. The Government of Chile together with the United Nations, the World Health Organization, the Pan American Sanitary Bureau, the Inter American Statistical Institute and the National Office of Vital Statistics of the United States Public Health Service operating under authorization of the United States Government Point 4 Programme of Technical Assistance became, therefore, the official sponsors of the Seminar.

4. PARTICIPATION OF INTERNATIONAL AGENCIES

The four international agencies mentioned in section 3 above, together with the National Office of Vital Statistics of the United States Public Health Service, worked very closely in organizing the Seminar, recruiting the staff¹, providing reference materials, planning courses, and promoting and publicizing the Seminar to the different countries through the medium of their special contacts.

In terms of staff, the United Nations provided the services of three statisticians for the duration of the Seminar and one for a shorter period to cover the courses on vital statistics, health statistics and biostatistical analysis. The Pan American Sanitary Bureau paid the salary, travel and other expenses of an expert to provide instruction on the application of the International Statistical Classification of Diseases, Injuries and Causes of Death. The Inter American Statistical Institute arranged for the participation of four observers, three of whom were present for only a short period during which two delivered lectures (see Annex 2) and one of whom remained for the duration of the Seminar and gave assistance in preparation of materials for laboratory work.

¹ A complete list of the faculty, lecturers and instructors with their official affiliation will be found in Annex 2; a list of reference materials supplied to the participants in the Seminar will be found in Annex 7.

The Statistical Office of the United Nations and the Pan American Sanitary Bureau also provided a cash contribution for the incidental expenses of the Seminar. The World Health Organization provided three fellowships for participants and the Pan American Sanitary Bureau, two; a sixth fellowship was a joint WHO-PASB contribution. In addition the National Office of Vital Statistics of the United States Public Health Service provided two more. The United Nations Economic Commission for Latin America, located in Santiago, also gave some assistance with local arrangements.

5. PARTICIPATION OF THE CHILEAN GOVERNMENT

The Chilean Government enthusiastically accepted and complied with the responsibilities of the host country by taking every step to ensure the success of the Seminar. The Ministry of Foreign Affairs issued official invitations. The excellent facilities of the School of Public Health in the University of Chile were made available to the Seminar; transportation facilities for participants as well as office and teaching equipment needed for the operation of the Seminar were provided. Chile also made arrangements for the services of the Director as well as two full-time professors besides that of many occasional lecturers (see Annex 2).

Particular mention should be made of the valuable assistance furnished by the General Bureau of Statistics, the Public Health Unit of Quinta Normal and the Department of Biostatistics of the Public Health Service which arranged for the field work and visits and took the major responsibility for handling the trial census and the birth-registration test carried out as demonstration projects for the Seminar.

The Seminar was placed under the direction of Professor Hernán Romero, Director of the School of Public Health, while Mr. Luis Cárcamo Cantín, Director General of Statistics, served as President of the Directive Committee formed by the highest officials of all the national agencies concerned with vital statistics and health statistics, and the University of Chile.

6. PARTICIPATION OF OTHER SERVICES AND COUNTRIES

In addition to their collaboration in the organization of the Seminar and in supplying two fellowships the National Office of Vital Statistics of the United States Public Health Service arranged for the participation of one of their international consultants who took full charge of the Seminar activities in connection with the trial census of Quinta Normal. A second international consultant attended the Seminar for a shorter period and contributed a lecture on "Accident statistics", the field of his specialization.

The valuable assistance in terms of promotional activities and provision of transportation and other facilities given by the Institute of Inter-American Affairs in Santiago deserves special mention. Likewise the support and enthusiasm of the representative of the Rockefeller Foundation is worthy of special note. It should also be noted here that, except for the participants who were financed by fellowships, all expenses of the country delegates were borne by the national governments.

II. ORGANIZATION OF THE SEMINAR

7. PREPARATORY WORK

Based on discussions between technicians in Chile and the United Nations a "Preliminary Plan for an International Training Centre on Biostatistics for Latin America" was prepared in the Statistical Office of the United Nations and brought to the attention of the other international agencies which it was felt might be interested in such a project. The agencies already mentioned in section 3 above accepted the plan as a working document and formed the "International Planning Committee" which held three organizational meetings, the first of which was held at Lake Success on 19 May. Following its approval by the international agencies, the plan was officially submitted to the Chilean Government through its permanent delegation to the United Nations. The Chilean Government accepted the proposal and, in due course, issued official invitations to all the American nations. The Secretary-General of the United Nations also announced the Seminar to the delegations of all the American countries and to others having special interests in the area. The international agencies prepared a printed announcement which, in July 1950, was distributed by each agency to its own contacts. In addition, the Seminar was officially announced through the Press and by radio as part of the United Nations information service for Latin America.

On 1 September the Assistant Director of the Seminar, Mr. O. Cabello of the Statistical Office of the United Nations, arrived in Santiago and began to make detailed arrangements with the Directive Committee for the operation of the Seminar. A provisional scheme of work, outlining in general terms the content of the courses, had been prepared in advance of the Seminar by the International Planning Committee. This scheme was submitted to, and approved by, the Directive Committee in Santiago and was carried out with only minor adaptations.

8. DIRECTIVE STAFF

(a) *DIRECTIVE COMMITTEE.* A Directive Committee was set up consisting of the heads of all the Chilean agencies concerned with vital statistics and health statistics and of representatives of the University of Chile and the Faculty of Medicine. The Chairman of the Committee was Mr. Luis Cárcamo Cantín, Director General of Statistics. The Honorary Presidents were the Minister of Public Health, Social Security and Welfare, Dr. Jorge Mardones, and the Minister of Economy and Commerce, Mr. Benjamín Claro. (See Annex 1 for complete membership.)

(b) *DIRECTION OF THE SEMINAR.* In accordance with the request of the International Planning Committee that the Directive Committee should select the Director of the Seminar, Dr. Hernán Romero, Director of the School of Public Health of the University of Chile, was appointed to fulfil this charge. Mr. Octavio Cabello, representative of the Statistical Office of the United Nations, acted as Assistant Director in charge of administrative matters and of technical co-ordination.

(c) *BOARD OF PROFESSORS.* The professors met at least once a week to study and decide on the day-by-day programme of work and to consider important questions relating to the administration and operation of the Seminar. Actually the Board of Professors was considered as the highest authority for technical and administrative matters. Insofar as possible, every effort was made to put into effect the recommendations of the faculty and its advice was

requested on every important question. The frequent meetings of the Board were an important factor in achieving co-ordination between the subjects covered by each course and the amount of time devoted to each activity.

9. TEACHING STAFF

(a) *FACULTY.* The faculty was provided by the sponsors of the Seminar and was selected from four countries. Every effort was made to ensure that the participants were instructed on each subject by the most competent experts in the region. The list of professors and lecturers, which includes members of two expert committees of the World Health Organization, a Vice-president of the American Public Health Association and the President of the Statistical Committee on Education of the Inter American Statistical Institute, will be found in Annex 2.

Particular mention should be made of the team work of the faculty. Each professor attended the sessions of all the other professors, participated in the discussions, in the field work and visits, and monitored the laboratory and discussion groups.

(b) *VISITING FACULTY.* The Seminar took advantage of the presence of outstanding Chilean and foreign technicians by arranging for them to give lectures to the Seminar on matters of their specialization. On other occasions, well-known experts were invited to participate in the discussions and to make short presentations of pertinent material. Particularly fruitful was the participation of Dr. Enrique Pereda, a tuberculosis specialist, and of several journalists who attended a session on distribution of statistics.

10. SECRETARIAL STAFF

During the actual operation of the Seminar it was necessary to hire a secretarial staff consisting of one bilingual secretary and three typists. This secretarial pool under the direction of the Assistant Director, Mr. Octavio Cabello, performed the bulk of the work of typing, translating, and reproducing the lectures, laboratory exercises, correspondence and so forth for the duration of the Seminar. During the organizational period the secretarial staff of the School of Public Health handled the secretarial work of the Seminar in addition to its own and continued to contribute in many ways during the operation of the Seminar. The representative of the Inter American Statistical Institute, who was attending the Seminar as an "observer", gave some assistance in the preparation of materials for laboratory work.

11. LOCATION AND EQUIPMENT

(a) *LOCATION.* The Seminar had its official headquarters on the premises of the School of Public Health in an excellent modern building not far from the heart of the City of Santiago. A large lecture room and four small rooms for committee groups or for workshop activities were placed at the disposal of the staff. One large room for the use of the secretarial staff, two offices for the use of the professors and one extra room for storage space were made available by the School of Public Health which also furnished a comfortable lounge room where the participants could meet during free periods. In addition, the professors and participants had at their disposal the well-equipped library of the School of Public

Health and the Bacteriological Institute, which in turn made arrangements for inter-library loans. The School of Public Health and Bacteriological Institute also set up a cafeteria for the Seminar.

(b) *EQUIPMENT*. All the equipment of the School of Public Health was placed at the disposal of the Seminar, including 50 slide rules, 25 calculating machines, 25 tables of logarithms and other material used in the laboratory work. The lecture rooms were furnished with slide projectors which were constantly used by the professors.

In order that materials might be ready for distribution at the time of the lectures, the mimeograph and multilithograph equipment of the School was used almost continuously for the Seminar during the entire period.

(c) *MOBILIZATION*. Many of the activities mentioned on the following pages could not have been performed if the School of Public Health, the Santiago Office of the Institute of Inter-American Affairs and the Public Health Service of Chile had not been ready and able to provide the transportation required. The School of Public Health placed one bus at the entire disposal of the Seminar and lent another for special occasions. The Chilean Public Health Service and the Institute of Inter-American Affairs, alternatively, lent one car or station wagon to mobilize small groups of participants and professors. In this connection the Seminar assumed responsibility for the operation of the equipment, including gasoline and such repairs as were required.

12. PARTICIPANTS AND OBSERVERS

No matter how a centre of study is organized, the results achieved depend largely on the participants. The Seminar wished and expected to have a heterogeneous group since the participants would be drawn from different operating agencies. Therefore, certain provisions were made to face the diversity of previous statistical training and interests. It was difficult to keep a high level of discussion on some subjects but the heterogeneous interests of the participants proved helpful in many other cases. It should be noted, however, that common language was a great asset.

The official invitation to governments suggested that participants be sent from the agencies interested in the fields of registration of vital events and compilation and utilization of vital statistics and health statistics. Invitations were issued to each Latin American country, to the United States and Canada and to the countries with colonial interests in the Western Hemisphere. As a result of these invitations, 40 full-time participants and 9 observers registered for the Seminar. The registration record which participants completed on the first day of the Seminar included information on age, education and statistical training, previous experience, and occupational affiliation which enabled the staff to plan the programme in terms of the needs of the participants.

This information also allowed an analysis of the participants in terms of origin, education, training, etc., to be made. Distribution of participants by country of origin and by various other characteristics is given below:

(a) *DISTRIBUTION BY COUNTRY AND LENGTH OF STAY*. The following table shows the distribution of participants and observers by country of origin and length of stay at the Seminar. The complete list of participants by country and governmental-agency affiliation is given in Annex 3.

Country	Participants			Observers (full and part time)
	Total parti- cipants and observers	Attended the whole period	Did not attend the whole period*	
Argentina	4	-	1	**3
Bolivia	1	1	-	-
Chile	25	25	-	-
Colombia	1	1	-	-
Costa Rica	2	1	1	-
Dominican Republic	1	-	-	1
Ecuador	2	1	-	1
Guatemala	1	-	1	-
Honduras	1	-	-	1
Paraguay	2	2	-	-
Peru	1	1	-	-
United States of America	2	-	-	2
Uruguay	3	2	1	-
Venezuela	1	1	-	-
International agencies	2	1	-	**1
TOTAL	49	36	4	9

* Except for the participant from Costa Rica, who after approximately three weeks had to return home on account of illness, these participants each attended approximately seven out of the total of eleven weeks.

** IASI representatives. See section 4 for additional information.

It must be mentioned that most of the observers participated very actively; some attended all the sessions and made important contributions to the Seminar.

(b) *DISTRIBUTION BY AGE.* The age distribution of participants shows the great heterogeneity of the group in this regard. The ages ranged from 23 to 67 years.

Age	Number of participants
Under 25 years	5
25 - 34 "	15
35 - 44 "	14
45 - 54 "	3
55 and over	3
TOTAL	40

(c) *DISTRIBUTION BY EDUCATION AND PREVIOUS STATISTICAL TRAINING.* The following table shows the distribution of participants by education and statistical training:

<i>Education or degree</i>	<i>Total</i>	<i>Previous formal statistical training</i>	
		<i>yes</i>	<i>no</i>
Medical doctors	7	2	5
4-7 years of university	11	7	*4
1-3 years of university	10	7	3
Secondary education complete	8	4	*4
Secondary education incomplete	4	1	3
TOTAL	40	21	19

* Includes one person trained in civil registration procedures which, for purposes of this table, was not considered "statistical training".

It can be seen that, from the point of view of their education, the participants were of a high calibre, since 28 of the 40 who had registered had an university education. It should be noted, however, that those with incomplete secondary education participated in class-room work as much as the others did. It is interesting to note that 10 of the 21 with statistical training had taken special statistical training courses in their own countries, 6 had been the recipients of fellowships for training in the United States, and 5 had taken formal statistical courses in universities of their own countries.

Since only half of the participants had previous statistical training, the need for an elementary course on statistical methodology at the Seminar was indicated.

(d) *DISTRIBUTION BY YEARS OF EXPERIENCE IN THE STATISTICAL FIELD AND PREVIOUS STATISTICAL TRAINING.* As shown in the following table all except two of the participants had several years of experience in the field of statistics. The long experience in the statistical field and the high degree of education of most of the students perhaps explain the very lively participation in group discussions and the excellent spirit of work among all of the participants.

<i>Years of work in the statistical field*</i>	<i>Total</i>	<i>Previous formal statistical training</i>	
		<i>yes</i>	<i>no</i>
No experience	2	1	1
Less than one year	2	-	2
1-4	14	7	7
5-9	11	7	4
10-14	5	3	2
15 and more	5	3	2
Not declared	1	-	1
TOTAL	40	21	19

* Years of work in the civil registration service were considered as years of work in the statistical field for this table.

It is also interesting to observe in this table the large proportion of persons who had many years of experience in the field but who were without previous statistical training, a combination of facts which emphasizes the need for training opportunities in statistics.

(e) *DISTRIBUTION BY AGENCY AFFILIATION.* The great majority of participants were from public health and medical services as shown in the following table. This was true in equal proportions for both Chilean and non-Chilean participants.

<i>Agency</i>	<i>Number of participants</i>
Public health services*	17
General bureaus of statistics	7
Social welfare services	6
Hospital services	5
Civil registration services	3
Police department	1
Student	1
TOTAL	40

* Public health, social security and preventive medicine services.

(f) *OCCUPATIONAL POSITION*. Finally, it can be safely said that most of the non-Chilean participants and many of the Chileans held influential positions which would enable them to implement the teachings of the Seminar and to contribute effectively to the improvement of the various aspects of vital statistics and health statistics in their own countries.

III. WORK OF THE SEMINAR

13. OPENING AND CLOSING CEREMONIES

Presided over by the Ministers of Foreign Affairs, Economy and Commerce, and Public Health, Social Security and Welfare, the Seminar was officially inaugurated on 28 September at the *Salon de Honor* of the University of Chile. Members of the diplomatic corps, a representative of the Secretary-General of the United Nations, the Director General of Statistics of Chile and other high ranking officials of the Chilean Government, as well as the participants and about 500 persons interested in statistics attended the opening ceremonies.

The Seminar was closed on 15 December 1950 with a formal ceremony held at the Hall of the University Council at which the Minister of Economy and Commerce presented the certificates to those participants who were considered qualified. At this ceremony only the faculty and members of the Directive Committee of the Seminar were present.

The official end of the Seminar was marked by a formal dinner offered by the United Nations to the Chilean Authorities and to the diplomatic representatives of the participating countries. The faculty also offered a farewell dinner to the participants.

14. HOURS OF WORK

The Seminar worked regularly from Monday through Friday, from 9 to 12 a.m. and from 2 to 5 p.m. Each morning and afternoon the 3-hour session was devoted to one individual subject. Usually the first hour of the session was devoted to a lecture or the presentation of a problem and the rest of the 3-hour session was then free for committee work, discussion or laboratory. On several occasions, special lectures which could not be fitted into the daily programme were presented after 5 p.m.

Saturdays and Sundays were reserved for rest and sight-seeing, inasmuch as it was felt that the participants from foreign countries would derive lasting benefits from becoming familiar with Santiago and its surroundings, and because the Chilean participants required some time for work in their own offices. For a time-table of activities, see Annex 4.

15. PROGRAMME OF WORK

The sponsoring agencies wished the Seminar to be a centre for training and exchange of ideas and not an international conference or an academic course. In line with this concept the Planning Committee recommended that the problems be approached from a practical point of view. This procedure required limitation of the number of subjects covered so as to enable the participants to study the problems under the circumstances most commonly found in Latin America. The development of minimum standards was desired rather than the presentation of theoretical discussions or the making of recommendations disregarding the procedures that could be used to put them into practice.

The programme of work of the Seminar included a variety of activities among which may be mentioned the following: basic courses, refresher courses, field work, demonstrations, visits to statistical and public health services, special individual or group assignments, conferences by visiting professors and other activities.

The basic courses were primarily concerned with the practical aspects of vital statistics and health statistics and emphasis was placed on workshop, committee, and laboratory work, together with group discussions which involved active participation and exchange of ideas among the participants from different countries. International recommendations were presented and the participants were encouraged to evaluate them as applied to their own programmes. An outstanding aspect of these basic courses was the fact that all formal material, i.e., lectures, reference material, etc., was reproduced in quantity and made available for distribution before each session so that participants could follow its presentation and re-read it whenever they desired. This procedure not only relieved the participants from tedious note-taking and allowed them, therefore, to participate fully in questions and discussion as the presentation proceeded, but it supplied them with an invaluable reference library of data.

(a) *BASIC COURSES.* A brief description of the basic courses follows; for the detailed contents of each session, see Annex 5.

(1) *Vital statistics methods.* A review of the needs for, methods of obtaining and uses of vital statistics including a study of the various patterns of organization and the elements involved in the registration of vital events and the compiling of statistics of live births, stillbirths, foetal deaths, deaths, marriages and divorces.

This course was based entirely on a survey made by the Statistical Office of the United Nations of the vital statistics systems of all the countries of the world. The results of this study in preliminary draft form¹ were reproduced in Spanish by the secretariat of the Seminar and distributed in advance of each lecture. They constitute a comprehensive volume of more than 600 pages which will be very valuable as reference material. The lectures were read in Spanish but discussions were conducted in English and Spanish with consecutive translation.

The practical aspect of this course consisted primarily of group discussions in which the participants presented the procedures used in their own countries, analyzed the applicability of international recommendations and made specific recommendations

¹ A revised draft will constitute a Handbook of Vital Statistics Methods to be published by the United Nations in 1952.

with respect to the fundamental elements of a vital statistics system. It might be mentioned that the group discussions on co-ordination of the activities of the general bureau of statistics, the public health service and the civil registry system were particularly good and fruitful although unanimous opinion on the subject was not attained.

As field work for this course the Seminar participated in a trial population census and birth-registration test in the *Comuna de Quinta Normal*, a section of the city of Santiago with 119,000 inhabitants according to the same trial census. This project is described in more detail on page 14 and in Annex 6.

Co-ordinated with this course, as well as with the public health statistics course, were visits to the National Identification Service, to the Department of Biostatistics of the Public Health Service and to the Public Health Unit of Quinta Normal.

(2) *Public health statistics*. Included a review of the needs for public health and morbidity statistics, of the requisites for planning the statistical work at the local, national and international levels, and the methods for the collection and analysis of data. Particular emphasis was placed throughout on the administrative value of statistics for the definition of problems and for guidance, control and evaluation of programmes.

The practical part of this course consisted primarily of laboratory exercises. However, there were several seminar discussions and during this course, as well as in every other, the participants were encouraged to ask questions during the lectures at any time they wished.

Very closely co-ordinated with this course were visits to the Public Health Units of Quinta Normal in Santiago and Cerro Barón in Valparaíso, and the Provincial Health Departments of Santiago and Valparaíso. Related to this course, although not co-ordinated in time, were the visits to the Statistical Department of the National Hospitals Service (*Servicios de Beneficencia y Asistencia Social*) and to the *Hospital Van Buren* in Valparaíso.

The lectures and exercises were prepared in advance in English, translated into Spanish and mimeographed by the Seminar Secretariat for distribution at the beginning of the sessions. The lectures were given in English with consecutive translation into Spanish. The discussions were in English and Spanish also with consecutive translation. The set of lectures constitutes very useful reference material which might very well be unique in Spanish.

(3) *Application of the "International Statistical Classification of Diseases, Injuries and Causes of Death."* Ten sessions of three hours each were devoted to the history of International Lists, an exposition of the basis for classification, a description of the "International Statistical Classification of Diseases, Injuries and Causes of Death" (6th Revision) and to giving instruction in coding causes of death according to the new list. A "training deck" of 500 certificates of death, selected and arranged by the National Office of Vital Statistics in Washington, translated by the Venezuelan Division of Epidemiology and Vital Statistics and reproduced for the Seminar by the Inter American Statistical Institute in Washington was used in this course. In addition, another "training deck" of 332 certificates was prepared independently in Venezuela and also reproduced by the Inter American Statistical Institute in Washington. The latter were used for advanced training.

Indispensable teaching aids for this course were the Spanish editions of "The Provisional Alphabetic Index to the International Statistical Classification of Diseases, Injuries and Causes of Death" (1948 Revision) and the "1950 Instruction Manual for Coding Causes of Death"; both were translated by the Division of Epidemiology and Vital Statistics of the Ministry of Public Health and Social Assistance of Venezuela from the

Index and Instruction Manual developed in English by the National Office of Vital Statistics in Washington, which Office also reproduced the Spanish edition of the Index for use at the Seminar.

In addition to the registered participants 16 special students, all from Chile, attended this course.

(4) *Biostatistical analysis.* The first session of this course was a seminar on relationships between population characteristics, vital rates and public health problems which was particularly timely as an introduction to the whole Seminar. The remaining sessions of the course were devoted to detailed study of the application of sound statistical techniques to public health and medical problems and to discussion of common fallacies and difficulties encountered. In order that it might have maximum effectiveness, this course was intimately co-ordinated in time and contents with courses (1) and (2) and with the refresher course on statistical methods.

The practical work of the course consisted in laboratory exercises and seminar discussions. Methods of computation and interpretation of rates were presented for the consideration of the participants with the idea of reaching an agreement that might facilitate international comparisons. Particular mention should be made of the use, in connection with this course, of the *Demographic Yearbook* of the United Nations, and the Spanish edition of Chapters I - IV of *Vital Statistics Rates in the United States 1900-1940*¹ which was prepared especially for the Seminar by the Inter American Statistical Institute.

Co-ordinated directly with this course was a conference on Demographic Analysis given by Mr. Carlos E. Dieulefait to which the public was invited.

(b) *THE REFRESHER COURSES consisted of:*

(1) *Statistical methods.* This course included a review of statistical methodology as applied to vital statistics and health statistics. Each lecture was complemented with laboratory exercises. As integral parts of this course were two very successful sessions on difficult subjects, namely: "Fundamentals of sampling" and a conference open to the public on the "Philosophical principles of the statistical theory" both by Professor Carlos E. Dieulefait, Director of the Institute of Statistics, Rosario, Argentina.

This course also benefited by the presence of Mr. José Coll, Professor of Statistics at the School of Public Health in Santa Fé, Argentina, who participated in two sessions on the "Measurement and interpretation of variation."

(2) *Mathematics.* This course reviewed the basic mathematical processes including elements of algebra and methods of computation with logarithms.

(c) *FIELD WORK - CENSUS AND BIRTH-REGISTRATION TEST IN THE Comuna de Quinta Normal.* As part of the Vital Statistics Methods course, the Seminar co-operated with the Public Health Unit of Quinta Normal, the General Bureau of Statistics and the Department of Biostatistics of the National Health Service in planning and taking a population census combined with a test of the completeness of birth registration in the *Comuna de Quinta Normal* a section or borough of the city of Santiago.

The details of this participation and the planning, operation, and results of the census are set forth in Annex 6; an abstract only will be given here.

¹ United States Department of Commerce. Bureau of the Census. *Vital Statistics Rates in the United States 1900-1940.* by Forrest E. Linder and Robert D. Grove. U.S. Government Printing Office. Washington, 1943.

Twelve participants at the Seminar who had particular interest in census procedure and testing of registration completeness formed a working group which devoted a total of nine sessions to the study and preliminary drafting of a census schedule, the birth-registration test form, the instructions for enumerators, the organization of enumeration, control forms, punch cards, coding and punching instructions, and the tabulation programme. In considering these problems, the recommendations of the Population Commission and the Statistical Commission of the United Nations, as well as those of the Inter American Statistical Institute Committee on the 1950 Censuses of the Americas were followed. This field project gave the members of the Seminar invaluable experience, both in the practical problems of planning census or survey procedures, and also in the application of international standards. The theoretical knowledge was supplemented by actual participation in the enumeration at which time every member of the Seminar served as an enumerator and the faculty as mobile field supervisors. Approximately 5,000 of the 119,000 persons in the commune were enumerated by members of the Seminar. The spirit of the group and the enthusiasm with which it undertook the entire project was exemplary, and this activity was judged to be one of the most instructive and successful of the Seminar programme.

(d) *FIELD VISITS.* The statistical and public health services mentioned in Annex 5 were visited on the dates indicated therein. These visits were planned in relation to the Vital Statistics and Public Health Statistics courses, and were carefully arranged in advance so that only the most important and pertinent aspects were covered. Special materials were distributed during these visits, so that the participants acquired valuable documentation for future reference.

(e) *FIELD DEMONSTRATIONS.* The most important field demonstration was the exhibition of the Electronic Statistical Machine No. 101 by the International Business Machine Corporation. Special arrangements had to be made for this demonstration and these were the responsibility of Mr. John A. Osterlund, an IBM technician skilled in Spanish, sent from New York especially for this purpose. The General Bureau of Statistics provided the necessary space for the demonstration of the 101 and other machines, and made arrangements to exhibit simultaneously the work of the different sections of the Bureau. The office of the IBM in Santiago also provided demonstrations of the regular types of machines for the participants who had no previous experience with this type of equipment.

In connection with these demonstrations, Mr. Osterlund attended one of the sessions of the Seminar to answer specific questions concerning the use of mechanical equipment.

(f) *SPECIAL ASSIGNMENTS.* Special assignments were provided for the participants who did not need to attend the Refresher Courses, and who had special interest in, or need for help in, subjects not covered in the Basic Courses. These assignments were either the preparation of a programme of work for some particular activity in their own countries, field work in one of the Chilean services, or a combination of both things. For example, several participants worked with public health nurses; others located records and abstracted data for special study; another worked on a statistical report form for stillbirths; yet another studied the various procedures in practice for checking completeness of birth registration. Each special assignment was directly supervised by either Miss Puffer or Miss Powell.

(g) *CONFERENCES BY VISITING PROFESSORS.* A list of these conferences is given in Annex 2.

(h) *LECTURES ON THE WORK OF THE INTERNATIONAL AGENCIES.* During the first week, the representatives of the international agencies presented to the Seminar the organization of their respective agencies. Sessions were devoted to the organization of the United Nations; the work of the Statistical Office of the United Nations; the organization and programme of the World Health Organization, and particularly its Expert Committee on Health Statistics, the work of the Pan American Sanitary Bureau; the programme of the Inter American Statistical Institute, and the international programme of the National Office of Vital Statistics of the United States Public Health Service.

Mr. Forrest E. Linder, Chief of the Demographic and Social Statistics Branch of the Statistical Office of the United Nations, was in charge of the last sessions of the Seminar devoted to reviewing the work done, and to hearing the participants' suggestions for the improvement of future projects of this nature. Mr. Linder described and discussed the co-ordination of the statistical work of the several international agencies and their relationship with the statistical services of the national governments.

(i) *OTHER ACTIVITIES RELATED TO THE SEMINAR*

(1) Taking advantage of the fact that several members of the National Committees on Vital and Health Statistics were attending the Seminar, the Committee in Chile held a special session for the foreign participants belonging to this type of organization in their own countries.

(2) The Seminar was invited to attend the sessions of the First Annual Meeting of the Chilean Society of Public Health and Social Medicine. These sessions took place after the working hours of the Seminar, but were well attended.

(3) At the instigation of the Public Health Unit of Quinta Normal, Miss Ruth Puffer of the Faculty of the Seminar gave a lecture on statistics for nurses, which was attended by over 200 public health nurses and students.

(4) Dr. Darío Curiel, also of the Faculty, gave a conference before the Medical Society of Valparaíso on "The Role of Statistics in Medicine", which will be published in the Journal of the Society. This conference took place during the training visit of the Seminar to Valparaíso. (see page 17).

(j) *EXTRA-MURAL ACTIVITIES.* In order to develop a strong feeling of solidarity in the group it was considered important to arrange social gatherings for the participants and to encourage visits on week-ends to places of interest near Santiago and Valparaíso.

Among the social events a party was given by the General Bureau of Statistics during the first week of the Seminar; it was especially effective in establishing a feeling of camaraderie among the participants at the very beginning of their work together. The IBM World Trade Corporation gave a luncheon at the end of the demonstration of the mechanical equipment. During the course of the Seminar the Chilean participants and professors also entertained their foreign guests.

These activities among others contributed to the establishment of friendly relationships, and many useful observations and ideas originated in these informal meetings.

16. *TIME-TABLE OF PROGRESS AND INSTRUCTION*

As a result of the effort to obtain strict co-ordination between the subjects taught in the different courses, the pre-arranged schedule of courses was not always strictly adhered to and as a consequence the sessions of each course did not always take place on the same days, or at the same hours. Annex 4 contains the time-table of instruction which actually developed for the Seminar.

The first week of the Seminar was devoted to the registration of participants, general orientation on the aims and organization of the Seminar, visits to the statistical departments of the public health and other services in Santiago, and to explanation of the work of the international agencies concerned with vital statistics and health statistics in the Americas. During October emphasis was given to the refresher courses on mathematics and statistics, in order that a firm technical ground-work might be laid, and to the preparation of plans for the experimental census and test of the completeness of birth registration in Quinta Normal.

From 2 to 5 November a field trip to Valparaiso was made, in order to visit public health services outside Santiago and to provide a break in the heavy concentration of course work.

The first two weeks of November were crowded because the course on the application of the International Statistical Classification of Diseases, Injuries and Causes of Death, the demonstration of IBM mechanical equipment brought especially for the Seminar from the United States, and the last sessions on preparation of the census and the census enumeration, had to be concentrated in this period.

During the latter half of November and the first week of December the basic courses were completed. This enabled the last week of the Seminar to be devoted to special subjects not specifically treated in the basic courses, and to discussions of the results of the Seminar and its possible influence on the future work of the national and international statistical agencies.

IV. RESULTS ACHIEVED

17. GENERAL REMARKS

It is believed that the Seminar fulfilled its immediate objectives and made important contributions towards the aims mentioned at the beginning of this report. Concrete results, however, cannot be gauged at this moment, and only future observation may measure its influence on the improvement of vital statistics and health statistics in the Americas. The improvement to be realized depends, however, not only on the competence of the statisticians themselves, but on local conditions, and on the appreciation of statistics by the government officials who are responsible for providing the necessary resources. The Seminar has certainly made an effective contribution to that end, if judged only by its impact on Chile where several important actions have already been taken as a result of the stimulation produced.

18. TRAINING OF STATISTICIANS

As regards immediate results, it is believed that the Seminar has contributed substantially to the improvement of statistics. There is no doubt that every participant, and every professor, benefited in a personal way by his attendance at the Seminar. But what is perhaps more important is that every participant acquired some knowledge of the various

aspects of vital statistics and health statistics. Officials from central statistical offices and the public health services, for example, were exposed to the complicated problems of legal registration at the same time that officials from the registration service learned how the health service makes use of the transcripts of registration records in the course of their daily work, and how the central statistical offices compile statistics for the country. Increased understanding could not help but develop from this three-way interchange.

In the field of vital statistics, the participants had the unique opportunity of reviewing how the same things are done in all the countries of the world. The most common errors or discrepancies found in definitions, forms and procedures were pointed out and therefore, at least in this aspect, substantial improvements should be expected in the near future.

In the field of public health statistics, there is little doubt that the participants, particularly those from public health, social welfare, and medical services, learned techniques of immediate application to their work at the national and local level.

Finally, those who were not primarily interested in learning techniques will now better understand the way in which statistics can assist them in their day-to-day work by the application of scientific methods for the observation and analysis of facts concerned with population and health.

19. IMPROVEMENT OF INTERNATIONAL COMPARABILITY

International comparability of statistics depends on many factors. Of these, the use of uniform definitions, classifications and tabulation procedures for vital statistics and health statistics and the applicability of international recommendations in these respects were studied in great detail during the Seminar. It was evident that the participants fully realized the need for obtaining comparable statistics even though the extent to which they will be able to improve comparability will depend on conditions in their own countries.

20. IMPROVEMENT OF THE WORK OF INTERNATIONAL AGENCIES

The methods by which international agencies operate, the relationships between them, and their respective needs and aims were all brought to the attention of the participants. There can be no doubt that such familiarity as was established with respect to the needs of international agencies will result in improved co-operation on the national level.

21. ESTABLISHMENT OF INTERNATIONAL CONTACTS

Not only did the participants in the Seminar establish personal friendships and working relationships among themselves, but a firm channel for exchange of ideas and information was established between them and the international agencies. At the conclusion of the Seminar each participant received an official list of the trainees and the staff together with their mailing addresses. In addition, the name of each participant was placed on the appropriate mailing lists of the international agencies in order to ensure the continued transmission to them of materials of interest in the field of vital statistics and health statistics.

V. ANNEXES

Annex 1

DIRECTORATE AND DIRECTIVE COMMITTEE OF THE SEMINAR

DIRECTOR: *Dr. Hernán Romero*, Director of the School of Public Health of the University of Chile; member of the WHO Expert Committee on Professional and Technical Education of Medical and Auxiliary Personnel.

ASSISTANT DIRECTOR: *Mr. Octavio Cabello*, representative of the Statistical Office of the United Nations; former professor of statistics of the School of Public Health of the University of Chile.

DIRECTIVE COMMITTEE:

HONORARY PRESIDENTS:

Mr. Benjamín Claro Velasco, Minister of Economy and Commerce of Chile.

Dr. Jorge Mardones Restat, Minister of Public Health, Social Security and Welfare of Chile.

CHAIRMAN: *Mr. Luis Cárcamo Cantín*, Director General of Statistics of Chile.

MEMBERS: *Dr. Nacienceno Romero y Ortega*, Director General of the Public Health Service.

Mr. Desiderio Bravo, Director General of the Civil Registration Service.

Dr. Alfredo L. Bravo, Vice-president of the Social Security Fund.

Dr. Otto Wildner, Director General of Hospitals.

Mr. Hermann Max, representative of the University of Chile, Professor of Monetary and Bank Economy of the University of Chile and Statistician of the Central Bank.

Dr. Humberto Abrahamsohn, President of the National Committee on Vital and Health Statistics of Chile.

Dr. John H. Janney, representative of the Rockefeller Foundation in Chile.

Mr. Gustavo Martínez-Cabañas, formerly Executive Secretary of the United Nations Economic Commission for Latin America, and

Dr. Hernán Romero, Director of the School of Public Health of the University of Chile.

Annex 2

**FACULTY, LECTURERS, AND INSTRUCTORS, BY NATIONALITY, REGULAR POSITION
AND PARTICIPATION IN SEMINAR**

I. FACULTY

Name	Nationality	Regular Position	Participation in Seminar		
			Services provided by	Main subject taught	Number of 3-hr. sessions
Mr. Domingo Almendras	Chilean	Technical Advisor to the General Bureau of Statistics of Chile.	Chile	Elements of probabilities	3
Mr. Charles G. Bennett	U.S.A.	International Consultant of the National Office of Vital Statistics of the U.S. Public Health Service.	NOVS	In charge of Seminar participation in the trial census and birth-registration test of Quinta Normal.	14
Mr. Octavio Cabello	Chilean	Statistician of the Statistical Office of the United Nations.	U.N.	Biostatistical Analysis	11
Dr. Darío Curiel	Venezuelan	Chief of the Division of Epidemiology and Vital Statistics of the Ministry of Public Health of Venezuela; member of the WHO Expert Committee on Health Statistics.	PASB	Applications of International Statistical Classification of Diseases, Injuries and Causes of Death (6th Revision)	10
Mr. Carlos E. Dieulefait	Argentinian	Director of the Institute of Statistics University of Litoral, Rosario. Consultant to the Inter American Statistical Institute and President of its Statistical Committee on Education.	IASI	Mathematical Fundamentals of Statistics and Sampling. Elements of Demographic Analysis.	3 ¹
Mr. Alfonso Herrera	Chilean	Sanitary Engineer of the School of Public Health of the University of Chile.	Chile	Mathematics	10
Mr. Forrest E. Linder	U.S.A.	Chief of the Demographic and Social Statistics Branch of the Statistical Office of the United Nations.	U.N.	Statistical system of the United Nations and the Specialized Agencies; Technical Assistance Programme on Statistics.	3
Miss Nora P. Powell	U.S.A.	Statistician of the Statistical Office of the United Nations.	U.N.	Vital Statistics Methods.	18
Miss Ruth R. Puffer	U.S.A.	Chief of the Division of Vital Statistics of the State Health Department of Tennessee, U.S.A.	U.N.	Public Health Statistics.	16
Dr. Hernán Romero	Chilean	Director of the School of Public Health of the University of Chile; member of the WHO Expert Committee on Professional and Technical Education of Medical and Auxiliary Personnel.	Chile	Relationships between demography and public health.	2

Name	Nationality	Regular Position	Participation in Seminar		
			Services provided by	Main subject taught	Number of 3-hr. sessions
Dr. Teodoro Zenteno	Chilean	Professor of Statistics of the School of Public Health of the University of Chile.	Chile	Statistical methods	13 ²
II. LECTURERS					
Dr. Victor Ayub H.	Chilean	Chief of Provincial Health Department of Santiago, Chile.	Chile	Organization and work of the Provincial Health Department.	1
Mr. Carlos Barrales	Chilean	Chief of the Territory and Population Group of the General Bureau of Statistics of Chile.	Chile	Instructions for the Experimental Census of Quinta Normal.	2
Mr. Luis Cárcamo Cantín	Chilean	Director General of Statistics in Chile	Chile	The history and organization of the Bureau of General Statistics in Chile.	1
Mr. José Coll	Argentinian	Professor of Biostatistics of the School of Public Health, National University of the Litoral, Santa Fé, Argentina.	IASI	The measurement and interpretation of variation.	2 ²
Mr. Germán Ihl	Chilean	Chief of the Department of Civil Registration of the National Registration and Identification Service of Chile.	Chile	Organization of Registration Service in Chile.	1
Mr. William C. James	U.S.A.	International Consultant of the National Office of Vital Statistics of the U.S. Public Health Service.	NOVS	Statistics of Accidents.	1
Miss Joan Klebba	U.S.A.	Statistician of the U.S. Institute of Inter-American Affairs.	IIAA	Experimental programme to measure and evaluate the work of the public health centres and to link records.	1
Miss Marta Latorre ³	Chilean	Chief of the Statistical Service of the Provincial Health Department of Santiago, Chile.	Chile	Statistical Organization for the Province of Santiago.	1
Mr. Rafael H. Martínez	U.S.A.	Statistician, Section of Epidemiology and Statistics, Pan American Sanitary Bureau.	PASB	Statistical appraisal of public health work.	1
Dr. Gustavo Molina ⁴	Chilean	Director of the Public Health Unit of Quinta Normal, Santiago, Chile.	Chile	Organization of a local health service.	1
Mr. Juan A. Nimo	Argentinian	Expert consultant on Statistical Education to the Inter American Statistical Institute.	IASI	The organization and programmes of IASI	1

Name	Nationality	Regular Position	Participation in Seminar		
			Services provided by	Main subject taught	Number of 3-hr. sessions
Mr. John A. Osterlund	U. S. A.	International consultant of the International Business Machines Corp.	IBM	Several uses of mechanical equipment.	1
Dr. Enrique Pereda	Chilean	Chief of the Division of Tuberculosis of the Public Health Unit of Quinta Normal, Santiago, Chile.	Chile	The organization of the tuberculosis section and the use of records at the local level.	1
Mr. Rigoberto Riós Castro	Chilean	Chief of Health Education Division, National Public Health Service, Chile.	Chile	Problems of presenting statistics to public and to government.	1
Mr. Jerjes Vildósola ⁵	Chilean	Chief of the Department of Biostatistics of the Public Health Service of Chile.	Chile	The statistical organization within the Public Health Service in Chile.	1
III. INSTRUCTORS ^{3,6}					
Mrs. Elena de Ochoa	Venezuelan	Chief of the Vital Statistics Section in the Division of Epidemiology and Vital Statistics of the Ministry of Public Health of Venezuela.	PASB	Coding according to the International Statistical Classification of Diseases, Injuries and Causes of Death.	10
Mr. Julio Ramírez de Arellano	Chilean	Statistical Officer of the Hospital San Borja of Santiago.	Chile	Coding according to the International Statistical Classification of Diseases, Injuries and Causes of Death.	10

NOTES:

- 1 One lecture on the Philosophical Principles of Statistics and one on Elements of Demographic Analysis were open to the public.
- 2 Mr. J. Coll and Dr. T. Zenteno collaborated in two joint sessions.
- 3 Miss M. Latorre also served as instructor for the course on the International Statistical Classification of Diseases, Injuries and Causes of Death.
- 4 Dr. G. Molina was also the Director of the Experimental Census of Quinta Normal.
- 5 Mr. J. Vildósola served very actively also in connection with the Experimental Census and Birth-Registration Test of Quinta Normal.
- 6 In addition to specific duties all the teaching staff served as instructors in every other activity of the Seminar.

ABBREVIATIONS:

- IASI - Inter American Statistical Institute.
- IBM - International Business Machine Corporation.
- IIAA - Institute of Inter-American Affairs, U.S. Department of State.
- NOVS - National Office of Vital Statistics, U.S. Public Health Service.
- PASB - Pan American Sanitary Bureau.
- UN - Statistical Office of the United Nations.

Annex 3

LIST OF PARTICIPANTS AND OBSERVERS AT THE SEMINAR

<i>Country</i>	<i>Name</i>	<i>Agency affiliation</i>
ARGENTINA	Carlos Américo Maraviglia ¹	Institute of Statistics of the University of El Litoral, Rosario
	Néstor A. Olmos ²	School of Public Health of Santa Fé
	José Coll ²	School of Public Health, Santa Fé
	Carlos E. Dieulefait ²	Institute of Statistics of Rosario
BOLIVIA	Hans Bruch Torrelio	Inter-American Co-operative Public Health Service, La Paz
CHILE	Dr. Humberto Abrahamsohn	Social Security Fund for Workers, Santiago
	Wilma Antoine Lazzerini	School of Public Health, Santiago
	Carlos Cirera Reballo	General Bureau of Statistics, Santiago
	Alfonso Delgado Concha	Public Health Unit of Temuco, Temuco
	Dr. Antonio Delgado Cuitiño	Lo Franco Sanitorium, Santiago
	Dr. Salvador Espejo Silva	General Bureau of Statistics, Santiago
	Josefina Filax Aravena	Public Health Unit of San Miguel, Santiago
	Adolfo Gaete Darbó	National Civil Registration Service, Santiago
	Luisa Goycolea Bascuñán	National Civil Registration Service, Santiago
	Dr. Raúl Gutiérrez Román	Tuberculosis Hospital, Valparaíso
	Dr. Raúl López Reverdito	General Bureau of Social Security, Santiago
	Luis Marchant Cavieres	Provincial Health Service of Santiago
	Juan Muñoz Herrera	National Public Health Service, Santiago
	Rigoberto O'Kington Catalán	Social Security Fund for Workers, Santiago
	Leoncio Orellana Soto	National Hospitals Service, Santiago
	Carlos Ortiz Caamaño	National Civil Registration Service, Santiago
	Julio Ramírez de Arellano Mourgues	National Hospitals Service, Santiago
	Daniel Ramírez de Arellano Varas	General Bureau of Statistics, Santiago
	Oscar Rojas Astaburuaga	General Bureau of Statistics, Santiago
	César Santelice Pinto	General Bureau of Police, Santiago
Raúl Valenzuel Donoso	National Hospitals Service, Santiago	
Raúl Varela Hernández	Social Security Fund for Workers, Santiago	

<i>Country</i>	<i>Name</i>	<i>Agency affiliation</i>
<i>CHILE (continued)</i>	Odette Verscheure Millas	Public Health Unit of Cerro Barón, Valparaíso
	Mario Villa Villagrán	Social Security Fund for Workers, Regional Office of Concepción
	Alberto Yung Smith	Social Security Fund for Workers, Regional Office of Valparaíso
<i>COLOMBIA</i>	Bernardo Romero Rojas	National School of Hygiene, Bogotá
<i>COSTA RICA</i>	Rodrigo Bolaños Sánchez	General Bureau of Statistics, San José
	José Guerrero Arguedas ¹	Ministry of Public Health, San José
<i>DOMINICAN REPUBLIC</i>	Tancredo Martínez García ²	Embassy of the Dominican Republic, Santiago
<i>ECUADOR</i>	Colón Holguín Henríquez	Public Health Service, Guayaquil
	Jorge Fernández ²	Embassy of Ecuador, Santiago
<i>GUATEMALA</i>	Julio Gándara Valenzuela ¹	Ministry of Public Health and Social Assistance, Guatemala
<i>HONDURAS</i>	Armando Lozano ²	Embassy of Honduras, Santiago
<i>PARAGUAY</i>	Leovigildo González García	General Bureau of Statistics, Asunción
	Dr. Emilio Velilla Toñanes	Ministry of Public Health, Asunción
<i>PERU</i>	Carlos Barreda Pérez	General Bureau of Statistics, Lima
<i>UNITED STATES</i>	William C. James ²	National Office of Vital Statistics of the Public Health Service, Washington, D.C.
	Joan Klebba ²	Institute of Inter-American Affairs, Washington, D.C.
<i>URUGUAY</i>	Mabel Abella Mederos	Ministry of Public Health, Montevideo
	Angélica Gaudiano Devita	Ministry of Public Health, Montevideo
	Dr. Adolfo Morales ¹	Ministry of Public Health, Montevideo
<i>VENEZUELA</i>	Elena Almenar de Ochoa	Ministry of Public Health, Caracas
<i>PAN AMERICAN SANITARY BUREAU</i>	Rafael H. Martínez	Pan American Sanitary Bureau, Washington, D.C.
<i>INTER AMERICAN STATISTICAL INSTITUTE</i>	Juan A. Nimo ²	Inter American Statistical Institute, Washington, D.C.

¹ Did not attend the whole period.
² Observer.

Annex 4

TIME-TABLE OF THE ACTIVITIES OF THE SEMINAR

Weeks	Monday		Tuesday		Wednesday		Thursday		Friday	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
25 - 29 September 1950	Registra- tion	V. School of P.H. & Bact. Inst.	L/B ¹	V. Identi- fication Service	UN ³ & the Specialized Agencies	V. General Bureau of Stat.	Free. Official Inaugu- ration ²	V. Nat. Public Health Service	WHO ³ PASB & NOVS	V. Nat. Hospitals Service
2 - 6 October	IASI ³ & Seminar ⁴	S	VS	M	HS	M	VS	S	HS	S
9 - 13 October	B	M	VS	S	HS	V. Prov. Health Serv. Stgo	H	H	HS	S
16 - 20 October	B	M/C/A	VS	B	HS	M/C/A	VS	B	HS	M/C/A
23 - 27 October	B	M/C/A	VS	M/C/A	HS	M/C/A	VS	V. Public Health Unit	HS	M/C/A
30 - 3 October - November	VS	M/C/A	VS	M/C/A	H	H	Trip to Valparaíso			
							Travel	V. Public Health Unit ⁵	V. Prov. Health Service	V. Univer- sity of Sta. Maria ⁶
6 - 10 November	C	CD	VS	TAB/V Gen. Bureau of Stat.	C	CD	TAB	S	HS	CD
13 - 17 November	C	CD	Census Enumeration		HS	CD	VS	S	HS	CD
20 - 24 November	HS	CD	VS	S	HS	CD	VS	CD	HS	CD
27 - 1 Nov. - Dec.	B	S ⁷	VS	C	HS	S/L ⁷	S/L ⁷	B/L ⁷	VS	S
4 - 8 December	B/C/A	S ⁸	VS	B/C	HS	B	VS	S ⁸	H	H
11 - 14 December	L ⁹	S	VS ¹⁰	C	The Int. ¹¹ Stat. Syst.	Evalua- tion of P.H. Work ¹²	Conclu- sions ¹¹	Conclusion & closing ceremonies 11, 13	Free	

Footnotes:

(Annex 4)

- 1 At 9 a.m. aims and organization of the Seminar. At 10 a.m. Seminar on the relationships between demography and public health.
- 2 At 12 o'clock.
- 3 Description of work and organization of the international agencies concerned with the Seminar.
- 4 Seminar on the co-ordination of international agencies for statistical work.
- 5 In evening, lecture by Dr. D. Curiel to the Medical Society of Valparaíso.
- 6 On Saturday, November 4th, there was a visit to the Hospital Van Buren in Valparaíso.
- 7 Lecture by Prof. C. E. Dieulefait.
- 8 Joint session by Drs. T. Zenteno and J. Coll.
- 9 Lecture on Accidents Statistics by Mr. W. C. James.
- 10 Session on presentation and distribution of statistics attended by newspaper representatives.
- 11 Sessions in charge of Mr. Forrest E. Linder.
- 12 Presentations made by Mr. Rafael H. Martínez and Miss Joan Klebba.
- 13 At 6 p.m. was the distribution of certificates to the participants.

Symbols used:

- A - Special assignments
- B - Biostatistical Analysis course
- C - Census and Birth-Registration Test of Quinta Normal
- CD - Application of International Statistical Classification of Diseases, Injuries and Causes of Death
- H - Holiday
- HS - Public Health Statistics course
- L - Special lectures
- M - Mathematics refresher course
- S - Statistical Methods refresher course
- TAB - Demonstration of tabulation by means of mechanical equipment
- V - Visit
- VS - Vital Statistics Methods course

Annex 5

DETAILED LIST OF TOPICS COVERED IN COURSES AND OTHER ACTIVITIES WITH NUMBER OF THREE-HOUR SESSIONS DEVOTED TO EACH

A. BASIC COURSES

<i>Subject</i>	<i>I. Vital statistics methods</i> (In charge: Miss Nora P. Powell, UN)	<i>No. of sessions</i> (of 3 hours)
1.	Problems of assembling vital statistics internationally.	}
2.	Need and uses of records and statistics of natality, mortality and nupciality.	
3.	History of civil registration and vital statistics.	}
4.	Administrative organization for vital registration and national vital statistics.	
5.	Basic principles of a vital registration system.	4
6.	Definition of live birth, stillbirth, death and marriage	1
7.	Responsibilities and procedures for registration	1
8.	Delayed registration. Methods to assess the completeness of registration.	2
9.	The registration documents and statistical report forms; problems of definition of items.	2
10.	Tabulation procedures for live births, stillbirths, deaths and marriages.	4
11.	Presentation and distribution of statistics to the consumers.	2
		1
		18

II. Public health statistics (In charge: Miss Ruth R. Puffer, UN)

1.	Need and uses of public health statistics in a public health service.	1
2.	Methods to produce data to fulfil the needs.	1
3.	Statistics of communicable diseases.	1
4.	Study and utilization of prevalence data.	1
5.	Method of studying the course of disease in a limited period of time.	1
6.	Statistics for the control of acute infectious diseases.	1
7.	Statistics for the programme of maternal and child hygiene.	1
8.	Studies of prematurity and its effects on infant mortality.	1
9.	Method of studying the development of diseases in an observed population over a period of time.	1
10.	Method of studying the evolution of cases of a disease over a period of time.	2
11.	Statistics of cancer.	1
12.	Studies of morbidity in a population.	1
13.	Statistics for the programme of industrial hygiene.	1
14.	Hospital statistics.	1
15.	Functions and organization of a statistical section in a public health service.	1
		16

III. <i>Application of the International Statistical Classification of Diseases, Injuries and Causes of Death</i> (In charge: Dr. Darío Curiel, PASB)	10 <hr/> 10
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IV. *Biostatistical analysis*
(In charge: Mr. Octavio Cabello, UN)

1. Seminar on the relationships between demographic factors and public health.	1
2. Seminar on the relationships between population characteristics and vital rates in the world.	1
3. Vital rates; methods of computation and interpretation of results.	4
4. Life tables - construction.	2
5. Uses of life tables.	1
6. Population estimates.	1
7. Analysis of results of census and birth-registration test.	1
	<hr/> 11

B. REFRESHER COURSES

I. *Statistical methods*
(In charge: Dr. T. Zenteno, Chile)

1. Introduction to the study of statistics.	1
2. Frequency distributions.	1
3. Statistical presentation of data; tables and graphs.	2
4. Measurement of central tendency.	3
5. Measurement of variation; probabilities and normal curve.	5
6. Mathematical fundamentals of statistical theory and sampling.	2
7. Study of trends.	1
	<hr/> 15

II. *Mathematics*
(In charge: Mr. A. Herrera, Chile)

1. Use of the slide rule.	1
2. Computation of percentages and proportions.	1
3. Elements of algebra and the graphic presentation of algebraic equations.	3
4. Computation with and uses of logarithms.	4
5. Elements of probabilities.	3
	<hr/> 12

Subject

No. of sessions
(of 3 hours)

C. FIELD WORK

Experimental census and birth-registration
test of the COMUNA de QUINTA NORMAL

(In charge: Mr. C.G. Bennett, NOVS)

1.	Study of the plan.	1
2.	Preparation of forms and instructions ¹ .	9
3.	Instructions to enumerators.	2
4.	Distribution of material and individual visits to the census zones assigned to each one.	1
5.	Enumeration.	2
6.	Coding and test of coding instructions for census schedules.	1
7.	Matching and test of instructions for matching census cards and birth-registration records.	1
8.	Analysis of the preliminary results of the birth-registration test and the census tabulations.	1
		18

D. FIELD VISITS

Date	Agency	Section
25 September	1. School of Public Health of the University of Chile.	-
	2. Institute of Bacteriology.	-
26 September	3. Identification Service.	Office for Santiago.
27 September	4. General Bureau of Statistics.	Territory & Population and Mechanical Tabulation Groups
28 September	5. National Public Health Service.	Departments of Biostatistics and Public Health Education.
29 September	6. National Hospitals Service.	Statistical Section of the Medical Department.
11 October	7. Provincial Public Health Service of Santiago.	Statistical Section and the Division of Communicable Disease Control.
26 October	8. Public Health Unit of Quinta Normal.	All the services.
2 November	9. Public Health Unit of Cerro Barón.	All the services.
3 November	10. Provincial Health Service of Valparaíso.	All the services.
	11. University of Santa María of Valparaíso.	-
4 November	12. Hospital Van Buren of Valparaíso.	Statistical section.

E. SPECIAL SESSIONS

Date	Subject	Person in Charge
26 September	1. Aims and organization of the Seminar.	Dr. H. Romero
27 September	2. The organization and work of the United Nations and its specialized agencies.	Mr. O. Cabello
29 September	3. The organization and work of the World Health Organization.	Dr. D. Curiel.

¹Sessions for the special group working on the census (12 participants).

<i>Date</i>	<i>Subject</i>	<i>Person in Charge</i>
29 September	4. The organization and work of the Pan American Sanitary Bureau.	Mr. R.H. Martínez
	5. The programme for international co-operation of the National Office of Vital Statistics of the U.S. Public Health Service.	Mr. C.G. Bennett
2 October	6. The organization and work of the Inter American Statistical Institute.	Mr. J.A. Nimo
24 October	7. The organization of the civil registration service in Chile.	Mr. G. Ihl
9 November	8. How to organize certain aspects of the work of vital statistics with mechanical equipment.	Mr. J.A. Osterlund
16 November	9. Methods for improving completeness and accuracy of birth registration in Latin America.	Mr. C.G. Bennett
29 November	10. The philosophical principles of statistics.	Prof. C.E. Dieulefait
30 November	11. Elements of demographic analysis	Prof. C.E. Dieulefait
	12. Mathematical fundamentals of statistics and sampling	Prof. C.E. Dieulefait
11 December	13. Accident statistics	Mr. W.C. James
13 December	14. The statistical system of the United Nations and the Specialized Agencies and the programmes of technical assistance in statistics.	Mr. F.E. Linder
	15. Some developments on an experimental programme to measure and evaluate the work of the public health centres and to link records.	Miss J. Klebba
	16. The Pan American Health Appraisal Form.	Mr. R.H. Martínez
14 December	17. Conclusions of the Seminar.	Mr. F.E. Linder

Annex 6

TRIAL POPULATION CENSUS AND TEST OF COMPLETENESS OF BIRTH REGISTRATION IN THE COMUNA DE QUINTA NORMAL

1. The plans already formulated by the Public Health Unit of Quinta Normal and by the General Bureau of Statistics to carry out a trial census in the *Comuna de Quinta Normal* provided a splendid opportunity for the Seminar to develop a training project from which the participants would gain knowledge and experience in the field of population census. It was anticipated that the study of census methods and definitions would be of direct assistance in the field of biostatistics where similar definitions and procedures are applicable. In addition it appeared likely that, in connection with the Vital Statistics Methods course, one type of test for determining completeness of birth registration might be demonstrated at the same time. Accordingly, steps were taken to stimulate the taking of the trial census and a correlated birth-registration test during the course of the Seminar.

2. Objectives of the trial census

Three Chilean governmental agencies were primarily concerned with this enterprise. The General Bureau of Statistics considered the work a trial census, as a prelude to a national census and test of birth registration in 1951. At all stages, in taking this census, including planning and preparation, organization, enumeration, tabulation, and the publication of results, the Bureau secured valuable information that could be applied in the nation-wide field.

The Public Health Unit of Quinta Normal had as its major objective the securing of population data for use in formulating its programme and as a base for calculating vital statistics rates. The Unit was also interested in securing quantitative data on various aspects of living conditions and in knowing the degree to which births in the area are recorded in the civil register as well as the degree of completeness of its own birth-registration file. The Department of Biostatistics of the Public Health Service had a definite interest both on its own behalf and on behalf of the Health Unit. Each agency made substantial contributions of personnel, material, and funds.

3. Method of the census

The census was a *de facto* enumeration of population on household (*familia censal*) schedules, but provision was made to indicate transients and temporary absentees, so that a *de jure* figure might also be derived. The *Comuna* was divided into five districts, which together comprised a total of 500 census zones, each of which was designed to be the correct size, in terms of population, to enable it to be enumerated in one day. Twenty adjacent zones were assigned to twenty pairs of Seminar participants, each pair being composed of one foreign participant and one Chilean. The pairing of participants in this manner was done to ensure their acceptance into the households of the "Commune", but, in actual practice, because of inclement weather, each enumerator in fact functioned separately, covering one half the assigned zone, in order to complete as much of the enumeration as possible in one day.

The Seminar participated in the checking of the population schedules, (Exhibit A) against the enumerator's register and in the coding of items on the schedules. The coding and punching of cards was the responsibility of the Health Service, while tabulations were made in the IBM Office of Santiago.

4. Method of the birth-registration test

Each enumerator was instructed to complete a separate form (Exhibit B) for every child who was born during 1950 and who was alive at the moment of the census. At the termination of the census the "infant cards" referring to infants born between 1 January and 31 August 1950¹ were checked against the official birth registrations in order to determine whether or not a birth-registration record existed in each case. Such matching of records would provide a test of completeness of registration as determined for children who survived until the time of the census. Another group of infants were those born during the first 8 months of 1950 and who died *before* the date of the census; the death records of such infants also serve as a source against which to verify the existence of birth records. The records for which no matching birth registration can be found are considered "unmatched" and the children they represent "unregistered".

In reverse, the number of infants registered and alive for whom no census record was found, must represent under-enumeration of infants at the census. Percentage completeness of registration and of under-enumeration can therefore be derived from these data.

5. Participation of seminar

The population census and the birth-registration test were integrated into the work of the Seminar from its very inception. The following time-table of activities will indicate how complete the participation of the Seminar was and at the same time outline the planning and operation of the census and test.

(a) Mr. Charles G. Bennett, International Consultant of the National Office of Vital Statistics, United States Public Health Service, was appointed by the Faculty of the Seminar as its representative on the Census Committee which was composed also of Mr. Carlos Barrales, Chief of the Department of Territory and Population of the General Bureau of Statistics; Dr. Gustavo Molina, Director of the Public Health Unit of Quinta Normal, and Mr. Jerjes Vildósola, Chief of the Department of Biostatistics of the National Public Health Service of Chile.

(b) Early in the course of the Seminar an announcement was made that a census and birth test would be carried out in the *Comuna de Quinta Normal* and that the Seminar would take part. A brief explanation was given of the reasons for the project and how the members of the Seminar would participate.

(c) Beginning 16 October, nine successive three-hour sessions² were held with twelve participants of the Seminar who evidenced particular interest in census and birth-registration testing methods, and who, therefore, substituted this activity for the refresher course in mathematics. At these meetings, preliminary drafts of the following material were presented: census schedule, birth test form, census and test instructions, organization plan, control forms, punch card items, coding instructions, a tabulation programme and table forms.

Every member of the group took part in discussions and made valuable suggestions that were incorporated in final drafts of the material. Furthermore, the recommendations of the Statistical Commission and the Population Commission of the United Nations as well as those of the IASI Committee on the 1950 Census of the Americas were discussed and followed.

(d) On 6 and 8 November, all participants in the Seminar received instruction as census enumerators, including a series of exercises designed to test the participants' knowledge of the census and birth-registration test instructions.

¹ Since the period allowed for birth registration in Chile is 60 days and the date of the census was 13 November it was necessary to consider only those infants whose birth *should have* been registered within the period.

² See Annex 4 for distribution of sessions.

(e) On 7 November a session of the Vital Statistics Methods course was devoted to discussion of the various tests which might be employed for assessing completeness of birth registration, and the implications of each analyzed. The proposed test in Quinta Normal was discussed in this frame-work and considerable time was devoted to the possible remedial measures which might be undertaken should the test reveal under-registration.

(f) On 13 November, the members of the Seminar were given maps of the zones that they were to enumerate and were taken to their respective zones for an inspection preliminary to the census.

(g) On 14 November, the enumeration took place with every member of the Seminar serving as an enumerator or field supervisor throughout the day.

(h) After the completion of enumeration, sessions were devoted to preparing coding and punching instructions, to coding census schedules, to preparing criteria and instructions for matching "infant cards" with birth registrations, to the matching process itself, to planning tabulations and finally to discussion of preliminary census tabulations and birth-registration test results from one district of the Commune. The analytical discussions were part of the biostatistical analysis course for which they served the fundamental purpose of elucidating the fallacies to be encountered in censuses and surveys as a result of the application of definitions, classification schemes, and tabulation procedures.

(i) Provision was made for completing the project after the termination of the Seminar and for the publication of the procedures and results by the National Public Health Service of Chile.] P.O.C.

6. List of printed materials used in Census and Test

A complete list of the forms and instructions employed in the trial population census of Quinta Normal and in the birth-registration test which accompanied it, is given below. Of these, copies of only the census schedule and the birth-registration test form are included with this report as Exhibits A and B.

Complete List:

- | | |
|---|---|
| 1. Census schedule | 9. Enumerators' control register and report form |
| 2. Columnar instructions for filling out census schedules | 10. Coding instructions for census data |
| 3. Birth test form (instructions on reverse side) | 11. Punching instructions |
| 4. Instructions to district supervisors of the census | 12. Punch card for individual and household data |
| 5. Instructions to enumerators | 13. Procedures for completing the test of birth registration, including table forms |
| 6. Instructions for reviewing enumerator portfolios | 14. Table forms for census data, Nos. 1-24 |
| 7. Test exercises for enumerators, Nos. 1-3 | 15. Coloured poster |
| 8. Control register for district supervisors | 16. Black and white poster |
| | 17. Black and white handbill. |

Annex 6 - EXHIBIT A

CENSUS OF COMMUNE OF QUINTA NORMAL
 General Bureau of Statistics
 Public Health Unit of Quinta Normal
 Inter-American Seminar for Biostatistics

Enumeration district _____ Zone _____ Block _____
 Street _____ No. _____ Schedule No. _____
 Enumerator _____ Date _____

	First Name and Surnames	Residence	Relationship to Head of Household	Sex	Age	Marital Status	Education (7 years and over)		Economic Characteristics					
							Able to read and write	Grade	General Classification	Active population		Occupational status		
										Principal occupation	Branch of Economic Activity			
		2	3	4	5	6	7	8	9	10	C	11	C	12
1			HEAD											
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														

LENGTH OF RESIDENCE

Residence in this house..... If less than 1 year, indicate previous residence:
 Place.....
 Street..... No.....

Owner.....
 Renter.....
 Usufructuary...
 Other.....
 Unknown.....

HOUSING

Number of rooms.....
 Number of beds.....
 Light:
 Electric.....
 Other.....

Drinking water:
 Installed in house:
 Other Sources (specify)

Toilet facilities:
 Water closet.....
 Outhouse.....
 Earth.....

Annex 6 - EXHIBIT B

TEST OF BIRTH REGISTRATION
Commune of Quinta Normal
(For infants born during 1950)

General Bureau of Statistics
Public Health Unit of Quinta Normal
Inter-American Seminar for Biostatistics

I. DATA REFERRING TO THE CHILD

(first name)	(father's surname)	(mother's surname)
Date of birth: Day _____ Month _____ 1950 Sex _____		Place of birth: Province _____
Was birth registered in Civil Register? Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/>		District _____
Office in which it was registered _____		Locality _____
Registration number _____ Date _____		Address _____ <small>(street & number; hospital or other institution)</small>

II. DATA REFERRING TO THE MOTHER

First names _____	Age _____
Surnames _____	

III. DATA REFERRING TO THE FATHER

First names _____	Age _____
Surnames _____	

Enumeration District _____ Zone _____ Block _____ Census Schedule No. _____ Line _____

Street _____ No _____ Date _____

Enumerator _____

Verified

Pending

Not verified

Notes: _____

INSTRUCTIONS

For each child born during this year and who is alive after zero hour of the day of the census, the enumerator will fill out this card; also he will enter the appropriate data on the census schedule. Immediately after the family has been enumerated, the enumerator must ask if there is a child born during 1950 because sometimes the informant will fail to mention children of very young ages.

NAME OF CHILD.

For a newly-born child who at this time has no name, enter NN.

DATE OF BIRTH.

Enter the complete name of the month.

SEX. Enter M if the child is of masculine sex and F if it is feminine.

NAME OF MOTHER.

Enter maiden name.

AGE OF MOTHER AND FATHER.

Give the number of years completed as of the day of the census.

DISTRICT, ZONE, BLOCK, STREET, NUMBER, SCHEDULE NUMBER.

Give the same data which appears on the census schedule.

LINE. Indicate the number of the line on the census schedule which carries the data corresponding to this child.

Annex 7

MATERIALS DISTRIBUTED AT THE SEMINAR

This list represents the materials, in English unless otherwise indicated, which were available in sufficient quantity for most of the participants to have copies of each. Material for which only 5-10 copies were available are not included here.

I. Materials supplied through the United Nations

1. *United Nations Demographic Yearbook, 1948*. Statistical Office of the United Nations in collaboration with the Department of Social Affairs, Lake Success, New York, 1949, 596 pp.
2. *United Nations Statistical Yearbook, 1948, First Issue*. Statistical Office of the United Nations, Lake Success, New York, 1949, 482 pp.
3. *Monthly Bulletin of Statistics, August, 1950, Vol. IV. No. 8*. Statistical Office of the United Nations, Lake Success, New York, 194 pp.
4. *Population Census Methods*. (In English, 197 pp. and in Spanish, 230 pp.) United Nations Department of Social Affairs, Population Division and Department of Economic Affairs, Statistical Office of the United Nations. ST/SOA/Series A. Population Studies, No. 4, Lake Success, New York, November 1949.
5. *World Population Trends, 1920-1947*. United Nations Department of Social Affairs, ST/SOA/Series A. Population Studies, No. 3 December 1949. 16 pp.
6. *Problems in the Collection and Comparability of International Statistics*. Papers presented at the Round Table on International Statistics. 1948 Conference of the Milbank Memorial Fund, November 17-18, 1948. Milbank Memorial Fund, New York, 1948. 165 pp.
7. *Statistics and Systems of Hospital Administration*, by Paul M. Densen. (In Spanish) Paper presented to the International Institute on Administration and Organization of Hospital Services, held under the auspices of the Pan American Sanitary Bureau in Rio de Janeiro, Brazil, from 18 June to 1 July, 1950. Reproduced by Seminar for distribution, October 1950. 8 pp.
8. *Report of the Statistical Commission, Fifth Session, 8 May to 17 May 1950*. United Nations document E/1696-E/CN.3/113, 19 May 1950. 91 pp.
9. *Implementation of Recommendations Made by the Population Commission at its First to Fourth Sessions and Related Recommendations of the Statistical Commission*. United Nations document E/CN.9/44-E/CN.3/88, 14 February 1950. 16 pp.
10. *Future Issues of the Demographic Yearbook*. United Nations document E/CN.3/92-E/CN.9/49, 20 February 1950. 6 pp.
11. *Note on International Statistics of Occupational Diseases*. United Nations document E/CN.3/93-E/CN.9/45, 20 February 1950. 8 pp.

12. *Comments of Governments on the Draft Recommendations of the Population Commission for the Improvement of International Migration Statistics.* United Nations document, E/CN.9/47-E/CN.3/90, 16 February 1950. 11 pp.
13. *Development of National Statistics.* United Nations document E/CN.3/98, 26 April 1950. 15 pp.
14. *Suggestions of the Food and Agriculture Organization of the United Nations in Regard to the Tabulation of Data on Urban and Rural Population in Population Censuses.* United Nations document E/CN.3/101-E/CN.9/56, 17 April 1950. 14 pp.
15. *Demographic Aspects of Employment, Unemployment and Labour Supply.* United Nations document E/CN.9/57-E/CN.3/104, 26 April 1950.
16. *Co-ordination of Statistical Activities: Fourth Report.* United Nations document E/CN.3/106, 21 April 1950. 10 pp.
17. *Progress Report on the Classification of Occupations.* United Nations document E/CN.3/C.1/15, 16 February 1950. 9 pp.
18. *Co-ordination of Industrial, Occupational and Industrial or Social Status Classifications.* United Nations document E/CN.3/C.1/17-E/CN.9/51, 7 April 1950. 5 pp.
19. *Proposals for Revision of the Recommendations of the Population Commission on the Industrial or Social Status Classification.* United Nations document E/CN.9/50-E/CN.3/1/18, 10 April 1950. 8 pp.
20. *Demographic Aspects of Technical Assistance for Economic Development.* United Nations document E/CN.9/52, 23 February 1950. 9 pp.
21. *Health Demonstration Areas.* United Nations document E/CN.9/53, 21 February 1950. 4 pp.
22. *Findings of Studies on the Relationships between Population Trends and Economic and Social Factors.* United Nations document E/CN.9/55, 11 April 1950. 170 pp., E/CN.9/55/Add.1, 1 May 1950. 88 pp., E/CN.9/55/Add.2, 2 May 1950. 14 pp. and E/CN.9/55/Corr.1, 9 May 1950. 1 p.
23. *An Act of Faith.* (In Spanish) United Nations Department of Public Information document.
24. *Basic Facts About the United Nations.* (In Spanish) United Nations Department of Public Information document.
25. *Charter and Statute.* (In Spanish) United Nations Department of Public Information document.
26. *Guide to the UN Charter.* (In Spanish) United Nations Department of Public Information document.
27. *How Peoples Work Together.* (In Spanish) United Nations Department of Public Information document.

28. *International Co-operation at Work*. (In Spanish) United Nations Department of Public Information document.
29. *Universal Declaration of Human Rights*. Booklet. (In Spanish) United Nations Department of Public Information document.
30. "What is UN Doing?" series. (In Spanish) United Nations Department of Public Information document series.
31. "What it is." Folders. (In Spanish) United Nations Department of Public Information document.

II. Materials supplied through the World Health Organization

1. *Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death*. Sixth Revision of the International Lists of Diseases and Causes of Deaths, Adopted in 1948. (In Spanish) Bulletin of the World Health Organization. Supplement 1. WHO, Geneva, Switzerland, 1948. 276 pp.
2. *Report of the First Session of the Expert Committee on Health Statistics*. Geneva, 23-28 May 1949. World Health Organization Technical Report Series No. 5, Geneva, March 1950. 10 pp.
3. *Report on the Second Session of the Expert Committee on Health Statistics*. (In English and in Spanish) World Health Organization document WHO/HS/26, 21 April 1950. 6 pp.
4. *Report on the First Session of the Subcommittee on the Registration of Cases of Cancer as well as their Statistical Presentation*. World Health Organization Expert Committee on Health Statistics. Document WHO/HS/Canc/12/Rev.1, 21 April 1950. 12 pp.
5. *Report on the First Session of the Subcommittee on Hospital Statistics*. World Health Organization Expert Committee on Health Statistics. Document WHO/HS/Hosp. Stat/7.Rev.1, 21 April 1950. 6 pp.
6. *Report on the First Session of the Subcommittee on the Definition of Stillbirth and Abortion*. World Health Organization Expert Committee on Health Statistics, document WHO/HS/STDEF/9.Rev.1. 21 April 1950. 8 pp.
7. *National Committees on Vital and Health Statistics*. (In English and in Spanish) Third World Health Assembly document A3/83, 12 May 1950. 20 pp. and A3/83.Add.1, 15 May 1950, 2 pp.
8. *Evolution of Mortality in Europe during the Twentieth Century*. (First Part) World Health Organization. Epidemiological and Vital Statistics Report. Vol. II, No. 4. April 1949. EVS 23, pp. 63-86.
9. *Deaths by Cause, Sex and Age in Europe*. World Health Organization. Epidemiological and Vital Statistics Report. Vol. II, No. 10, October 1949, EVS 29. pp. 191-227.
10. *Evolution of Mortality in Europe during the Twentieth Century*. (Second Part) World Health Organization. Epidemiological and Vital Statistics Report. Vol. III, Nos. 2-3, February-March 1950. EVS 33-34. pp. 29-80.

11. *Typhoid and Paratyphoid Fevers, Paratyphoid Fevers, Influenza, and Malaria*. World Health Organization. Epidemiological and Vital Statistics Report. Vol. III. No. 14. April 1950. EVS 35. pp. 81-108.

III. Materials supplied through Pan American Sanitary Bureau

1. *Bulletin of the Pan American Sanitary Bureau*. Pan American Sanitary Bureau Monthly publication.
2. *Monthly Epidemiological Report*. Vol. VII, No. 5, May 1950. Pan American Sanitary Bureau, Regional Office of the World Health Organization.
3. *Weekly Epidemiological Report*. Pan American Sanitary Bureau publication.
4. *Guide for the Epidemiological Reporting by American Nations to the Pan American Sanitary Bureau*. (In Spanish)
5. *Constitution of the Pan American Sanitary Organization*. (In Spanish) Pan American Sanitary Bureau publication No. 235, 5 May 1948.
6. *Pan American Sanitary Indices-Schedule*. (In Spanish) Pan American Sanitary Bureau publication No. 229. December 1945, 46 pp.
7. *International List of Causes of Death, 1938*. (In Spanish) Pan American Sanitary Bureau publication No. 137. 25 pp.
8. *Pan American Sanitary Code*. Pan American Sanitary Bureau publication No. 43. January 1931. 23 pp.
9. *Organization of the Biostatistical Services in Chile, United States, and Mexico*. Pan American Sanitary Bureau publication No. 217, September 1945. 37 pp.
10. *Pan American Sanitary Indices*. Information. Pan American Sanitary Bureau publication No. 161. 3 pp.
11. *Pan American Public Health Appraisal Form*. (In Spanish) Pan American Sanitary Bureau. Section of Epidemiology and Statistics. PASB/ST Form No. 15 (Spanish), No. 17 (English, 56 pp.) May 1950.
12. *Manual of Diseases Transmissible to Man*. (In Spanish) Pan American Sanitary Bureau publication.

IV. Materials supplied through Inter American Statistical Institute

1. *Vital Statistics Rates in the United States, 1900-1940*. (First four Chapters) by Forrest E. Linder and Robert D. Grove. (In Spanish) U.S. Department of Commerce. Bureau of the Census, U.S. Gov. Printing Office, Washington: 1943. Spanish translation and reproduction of first four chapters by Inter American Statistical Institute, Washington, D.C., 28 August 1950. IASI document 813, 102 pp.
2. *Test deck employed in the United States for instruction in the coding of Causes of Death according to the Sixth Revision of the International Statistical Classification of Diseases, Injuries, and Causes of Death*. (In Spanish) Prepared by the

National Office of Vital Statistics of the U.S. Public Health Service, translated by the Division of Epidemiology and Vital Statistics of the Public Health Service in the Ministry of Health and Welfare, Venezuela, and reproduced by the Inter American Statistical Institute, document 833. 4 October 1950. 35 pp.

3. *Test deck employed in Venezuela and edited for use in the Latin American Countries for Instruction in Coding Causes of Death According to the Sixth Revision of the International Statistical Classification of Diseases, Injuries and Causes of Death.* (In Spanish) Developed in the Division of Epidemiology and Vital Statistics of the Public Health Service in the Ministry of Health and Welfare, Venezuela; reproduced by the Inter American Statistical Institute, document 834, 4 October 1950, 26 pp.
4. *Principles of Medical Statistics*, by A. Bradford Hill. The Lancet Limited, London, 1937. (In Spanish) First translation into Spanish by José Augusto Coll, National University of the Litoral, Sante Fé, Argentina, and published by the University, 31 October 1950. 259 pp. Copies made available for the Seminar by the Inter American Statistical Institute.
5. *Methods of Testing in the 1950 Census the Completeness of Birth Registration*, by Frank S. Morrison and Adolfo Lola Plén. (In Spanish) Inter American Statistical Institute. Committee on the 1950 Census of the Americas, document 448a (COTA), 12 January 1949, 10 pp.

V. Materials supplied through the United States Public Health Service, National Office of Vital Statistics, Washington, D.C.

1. *Summary of International Vital Statistics, 1937-1944*, by Nora P. Powell. Federal Security Agency. U.S. Public Health Service, National Office of Vital Statistics, U.S. Gov. Printing Office, Washington, 1947. 299 pp.
2. *Vital Statistics Manual*, by Forrest E. Linder. (In Spanish) Ministry of Public Health, Montevideo, Uruguay, 1942. Reprinted by Bureau of the Census, Division of Vital Statistics, Washington, D.C., 1942. 76 pp.
3. *Vital Statistics Instruction Manual. Part II, Cause-of-Death Coding 1950.* (In Spanish) Prepared in English in the U.S. Public Health Service, National Office of Vital Statistics; translated into Spanish and reproduced for Seminar by the Division of Epidemiology and Vital Statistics in the Ministry of Health and Welfare, Venezuela.
4. *Provisional Alphabetic Index to the International Statistical Classification of Diseases, Injuries, and Causes of Death.* Sixth Revision of the International Lists of Diseases and Causes of Death, adopted 1948. (In Spanish) Developed in English by the U.S. Public Health Service, National Office of Vital Statistics, which Office also reproduced copies for the Seminar. Translated by Division of Epidemiology and Vital Statistics in the Ministry of Health and Welfare, Venezuela. November 1949. 106 pp.
5. *Accident Facts, 1950 Edition.* National Safety Council, Statistical Division. Chicago, Ill. 97 pp.
6. *Industrial Accident Records and Analysis.* Safe Practices Pamphlet, No. 21. National Safety Council, Chicago, Ill.

7. *A Short Method for Constructing an Abridged Life Table*, by Lowell J. Reed and Margaret Merrell. Federal Security Agency, U.S. Public Health Service, National Office of Vital Statistics. Vital Statistics - Special Reports, Vol. 9, No. 54, 29 June 1949. pp. 681-712.
8. *United States Summary of Vital Statistics, 1948*. Vital Statistics - Special Reports; Vol. 34, No. 50, 1 June 1950. pp. 883-929.
9. *Maternal Mortality by Race and by Urban and Rural Areas, United States, Each Division and State, 1947*. Vital Statistics - Special Reports, Vol. 31, No. 6, 20 July 1949, pp. 73-78.
10. *Infant Mortality by Race and by Urban and Rural Areas, United States, Each Division and State, 1947*. Vital Statistics - Special Reports. Vol. 31, No. 12, 20 September 1949, pp. 147-156.
11. *Effect of Changing Birth Rates upon Infant Mortality Rates*, by Iwao M. Moriyama and Thomas N.E. Greville. Vital Statistics - Special Reports, Vol. 19, No. 21. 22 March 1948, pp. 401-412.
12. *Demographic Responsibilities of a Registration Office as Developed in Baltimore, Maryland*. Vital Statistics - Special Reports, Vol. 23, No. 5, pp. 87-96.
13. *Introduction to Mortality Summaries for the United States, 1941-1945*. Vital Statistics - Special Reports, Vol. 27, No. 14. 5 February 1948. pp. 247-254.
14. *Mortality Summary for the United States, 29 Selected Causes*. Vital Statistics - Special Reports, Vol. 27, Nos. 15-51, pp. 255-333.
15. *Description of Methods used in the Construction of Variation Charts for the "Current Mortality Analysis"*, by Theodore D. Woolsey. Vital Statistics - Special Reports, Vol. 17, No. 26, 18 June 1943, pp. 471-498.
16. *Current Mortality Analysis*. Vital Statistics - Special Reports, Vol. 8. No. 3.
17. *Physician's Handbook on Birth and Death Registration*. Ninth Edition. U.S. Department of Commerce, Bureau of the Census, U.S. Gov. Printing Office, Washington, 1943, 94 pp. (Obsolete edition)
18. *Vital Statistics Organization in the United States*, by Robert Grove. U.S. Public Health Service, National Office of Vital Statistics; June 1950. 8 pp.
19. *The Confidential Nature of Birth Records*, U.S. Federal Security Agency, Children's Bureau and National Office of Vital Statistics. Children's Bureau Publication No. 332-1949. January 1949. 11 pp.
20. *Principles Applying to Collection of Information on Health as Related to Socio-Environment Factors*, by L.J. Reed.
21. *Prospectus on Vital Statistics Training Grants in the United States*.
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