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REPORT ON THE RESEARCH PROGRAM ON MORTALITY STATISTICS IN THE AMERICAS

(Document presented by the Government of Mexico)

"RESEARCH PROGRAM ON MORTALITY STATISTICS"

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RESEARCH PROGRAM ON MORTALITY STATISTICS

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I.- INTRODUCTION

Mexico has one of the highest rates of population growth (3.4 per cent annual increase in 1960). Compared with those of 27 other countries, European and American, it is topped only by Paraguay, (4.0 per cent) and Venezuela and Panama, which (both 3.4 per cent in 1950). In the period 1940-1950 the United States of America registered 1.4 per cent; Egypt 2.1 per cent; Switzerland 1.2 per cent, and England and France 0.5 per cent each.

A significant fact is that Mexico's population growth is almost entirely based on natural increase (births less deaths). It results not only from great reproductive vigor but even more, especially during the last three decades, from a marked decrease in the mortality index. The trend since the beginning of this century is as follows:

DEATHS AND GENERAL MORTALITY IN MEXICO

<u>Year</u>	<u>Deaths</u>	<u>Mortality Rate</u> (per 1,000 population)
1900	457,327	33.6
1910	505,131	33.3
1920	364,832	25.3
1930	441,717	26.6
1940	458,906	23.2
1950	418,430	16.2
1960	402,545	11.5

Even more evident is the decline in infant mortality, as the following table shows:

INFANT MORTALITY AND DEATHS IN MEXICO

<u>Year</u>	<u>Deaths</u> <u>under age 1 year</u>	<u>Infant Mortality Rate</u> (per 1,000 live births)
1900	142,137	286.8
1910	156,650	323.1
1920	101,202	223.1
1930	107,921	131.6
1940	110,037	125.7
1950	113,032	96.2
1960	117,922	72.1

Comparing these two mortality indexes to the birth rate shows that the increase in the latter has not kept pace with the decrease in the former.

BIRTHS IN MEXICO

<u>Year</u>	<u>Births</u>	<u>Birth Rate</u> <u>(per 1,000 population)</u>
1900	495,542	36.4
1910	484,883	32.0
1920	453,643	31.4
1930	819,814	49.4
1940	875,471	44.3
1950	1,174,947	45.5
1960	1,534,838	46.0

A study of these tables shows that, from 1900 to 1960:

- (a) General mortality has decreased by 66.1 per cent.
- (b) Infant mortality has decreased by 73.9 per cent.
- (c) Births have increased by only 25 per cent.

Clearly, then, as has been said, the growth in population is being achieved mainly through a drop in the death rate -- the result of improved public health services.

Since deaths are the negative factor in the growth equation, it follows that this factor must be studied in its minutest details so that it may be controlled quantitatively and qualitatively to produce reliable results. This is particularly the case when it is used for measuring other public health phenomena.

This paper, therefore, deals with the method of preparing death statistics in Mexico, their use as a yardstick, and plans to improve them.

II. BACKGROUND ON DEATH STATISTICS IN MEXICO

Like all the other young countries on the various continents, Mexico has profited by older countries, knowledge and experience of science and techniques that can only be the product of time, need, and dedication.

The systems and methods Mexico has adopted for learning about phenomena in both time and space are based on what might be called universal principles. That is, they are not the domain of any particular country but are there to be used -- today more than ever, with countries increasingly undertaking by international agreement to follow certain uniform procedures in order that the data collected may be comparable.

Needles to say, Mexico could not fail to engage in observation of one of the basic phenomena of life itself: that negative factor in the equation that determines the preservation of the human species.

So it has done from time immemorial, even if by rudimentary means, depending on the period, the resources, and the degree of development.

The earliest information on deaths in Mexico predates the Spanish conquest. It is recorded in hieroglyphs in the various codices --the Mendocino, Tellerian, Borgian, Aubin, Ramirez, and others--, which tell of large-scale deaths owing to "plagues."

During the time of the Viceroyalty it became necessary to learn more about the conquered lands and their natural and human resources, and research in social statistics was undertaken. The oldest such document in colonial times is the "Summary of Visits to Villages, in Alphabetical Order", which was prepared in the sixteenth century, apparently by Franciscan, Augustine and Dominican monks, and is now at the Royal Library in Madrid. This document is in fact a report on the properties and customs of the indigenous populations, a tax roll, and a census of the 907 political jurisdictions that comprised the conquered territory.

Around 1571 Archbishop Alonso de Montufar produced a report containing data on social and economic phenomena with mention of the deaths occurring among the indigenous population. This and similar documents of the time were prepared by royal command of Philip II, who ordered his governors, corregidores, and mayors, and also the ecclesiastical authorities, to make a description of the Indies --or, as the decree itself reads, "... to list and report the Spanish and Indian settlements, describing the districts, the indigenous names and their meaning, who discovered and conquered them, the terrain, climate, fertility of the soil, mode of living of its inhabitants, ...communications facilities, and everything relating to the nature of the land or any other important information."

The collection of these data, ordered about 1579, was completed by 1584. They were used to produce the most useful statistical document produced during the sixteenth century, entitled "Geographical Reports", which contained references to deaths among the indigenous populations and to their characteristics and customs. Copies of it exist in the Royal Academy of History in Madrid and in the Archives of the Indies in Seville.

Many other papers on social statistics were prepared during the sixteenth century, and during the seventeenth (1607-1610) an investigation similar to that which had been ordered by Philip II was carried out. Also called "Geographic Reports", it was based on a more complete and extensive questionnaire that had been used for the first one. About 1646 this material appeared again in an interesting statistical document called "Royal Proceedings and Notes on the Empire of the West Indies."

The eighteenth century began with such relatively important documents as those prepared by Don José Antonio de Villaseñor y Sánchez: "Convent Matters" (1723) and "Royal Hospital for Natives" (1729). At the command of the Viceroy, the Count of Fuenclara, this same investigator took a general census of temples, schools, hospitals, convents, families, population movements, corn consumption, and so forth. These findings he compiled into a book entitled American Theater, which was published about 1746.

During the period 1777-1791 a new edition of "Geographical and Statistical Reports" was compiled. It contained data on the northern part of the country, an area that had not been included in the investigations made in the sixteenth and seventeenth centuries.

During the years 1791-1792 the so-called "Revillagigedo Census" was taken, 40 volumes of which are to be found in the General Archives of Mexico. This survey included every kind of information, and the numerical tables based on it were later used by Baron Alexander von Humboldt in the preparation of his "Geographical-Political Tables on the Kingdom of New Spain," which he presented to Viceroy Iturrigaray on 3 March 1804, and of his well-known "Political Essay on New Spain." This latter work may be considered a guide to vital-statistics research as well as to the socio-economic potential of New Spain. In 1805 the Tribunal of the Consulate published News from New Spain, which seems to be based on Humboldt's statistical tables and, includes population movement among the many subjects covered.

As background to the development of death statistics in more recent Mexican history, it should be noted that an immediate concern after independence was won, was for the country to know itself better so that it could achieve social, economic, and moral progress. A series of legal provisions were issued, such as the decree of 28 December 1821 in which the Sovereign Provisional Government Junta ordered that "the Provisional Municipal Juntas proceed with the work on statistics, land distribution and partition..." Another, enacted on 1 April 1822 by the Sovereign Constitutional Congress, stated that "with the aim of gathering general statistics in the Empire, it is resolved that the newly created provincial deputations carry out this task in accordance with the Decree circulated by the Regency to that effect."

These provisions resulted in such documents as "Statistics on the Province of Michoacan," published in 1824 by its compiler, Juan José Martínez de Lejarza.

A decree dated 30 September 1831 established a Registry of Property, which was responsible for compiling the general statistics of the country. On 19 April 1833 the National Institute of Geography and Statistics was created. Of its work down to 1846, Don José María Lafragua says, in the Proceedings of the Secretariat of Foreign Affairs: "as regards statistics,

the Institute gathered infinitely useful material on population, public income, and material worth... the General Classified Census and the General Statistical Table of the Republic which includes: (1) the territory; (2) the population; and (3) the status of administration." The Institute had its own Boletín, the first issue of which was published in 1839.

A law dated 22 April 1853 established the Ministry of Development, which was officially charged with compiling the general statistics for the Republic. On 16 September 1857 the Minister presented to Congress a statistical document containing numerical series on population movements.

The hazardous times that the country underwent from then until 1866 naturally caused statistics to suffer in both quantity and quality. With the Republic re-established in 1867, a series of measures were adopted to promote, reorganize, and consolidate statistical techniques. The honor of establishing the definitive bases for permanent or continuous statistics (vital, educational, fiscal, labor, and so on) belongs to the great President Benito Juárez. Invoking the laws on civil marriage (23 July 1859), the Civil Registry (28 July 1859), and the prohibition of ecclesiastical intervention in cemeteries (31 July 1859), the Ministers of Finance, Development, and Interior--on 6 August 1867, 8 February 1868, and 28 November 1868, respectively --ordered all governors to submit statistical reports. It was thus that statistics on population movement were consolidated. Basically, the standards established in those circulars are still in effect, with the changes required by time.

It did not take long for the results of such legal provisions to appear. In 1873, 1874, and 1875 the Ministry of Government published data on population movements, and in 1877 papers were published by Antonio García Cuba and Emiliano Busto that among other things contained data on deaths and alluded to mortality rates, calculated on the basis of population estimates. In fact, the first more or less reliable estimates of the total deaths and death rates date from that period.

One document that made what we would nowadays consider proper use of death statistics is the Report of the Committee on Statistics submitted through Dr. Reyes Agustín to the Higher Council of Public Health in 1879. It contained the deaths occurring in the country, offered mortality indexes based on population estimates, and stated that the average life expectancy in the capital was 25.5 years, a rather low figure compared with the 46.6 years estimated for Paris in 1876.

(a) Legal Basis for Death Statistics

The legal basis for death statistics is the Organic Law of the Civil Registry, promulgated on 27 January 1857 and supplemented by a Law dated 30 January 1857 relating to cemeteries. These legal provisions remained in abeyance owing to the outbreak of the War of Reform. On 23 July 1859 President Benito Juárez issued at Veracruz the law on civil

marriage, on the 28th of the same month the Organic Law of the Civil Registry, and on the 31st the one forbidding ecclesiastical interference with cemeteries.

After the War of Reform, the end of French intervention, and the re-establishment of order, circulars were issued by the Ministers of Development and Interior on 8 February and 28 November 1868 charging the governors to carry out the provisions of these laws.

On 10 July 1871 the rules for Civil Registry Courts were issued, and a decree dated 25 September 1874 ordered the addition of the above-mentioned laws to the Constitution of 1857. This measure guaranteed permanency to civil registration in Mexico.

Since the establishment of the Civil Registry there have been no fundamental changes, especially as regards the recording of weddings, births, and deaths. In general, the standards for Civil Registry operations are basically the same as those established in 1874.

(b) Official Agencies Furnishing Information for Death Statistics

The primary sources of information on population movement are the judges or officials of the Civil Registry, who are direct subordinates of on the state governments. There is usually a Civil Registry office in every municipality; large or densely populated municipalities have two or more.

At present there are 2,371 municipalities in the country and 3,769 Civil Registry offices.

The basic data relating to population movement (marriages, births, deaths, divorces) are taken from the records kept by the Civil Registry judges or officials and transferred to special forms, which are sent to the various government agencies interested. The death entries are in most cases accompanied by a death certificate issued by an authorized physician.

III. PROCEDURES FOR KEEPING DEATH STATISTICS

The procedure for keeping death statistics may be summarized as follows:

- a) A form No. 823 Reg. of Coord. No. 1416, is sent to the 3,769 Civil Registry offices in the country for the specific purpose of recording death statistics.
- b) Form 823 is filled out on a monthly basis, listing all deaths occurring in that month.

c. The entries required on Form 823 are as follows:

1. Place (state, municipality, and Civil Registry office)
2. References (number of death certificate, consecutive number of the death during the month, name of place where it occurred, permanent residence of the deceased, sex and age)
3. Cause of death, subdivided as follows:
 - (a) Direct cause of death
 - (b) Disease or cause, if any, giving rise to the direct cause of death
 - (c) Other prior pathological conditions related to the disease causing the death
 - (d) Secondary pathological conditions

Form 823 also states whether the cause of death is supported by a death certificate duly completed by an authorized physician.

All data contained in Form 823 are transcribed from the death certificate, which is submitted to the Civil Registry office in duplicate. One copy is retained in that office and entered on Form 823, which is later sent to the General Department of Statistics. The other is sent to the Health Office of the zone in which the Civil Registry is located, where it is used for purposes of epidemiology. After finishing with the death certificate, the Health Office sends it to the Department of Vital Statistics of the Ministry of Health and Welfare, where it is used for statistical compilations.

When the Forms 823 are received from the Civil Registry Offices, they are set in order, studied, and coded according to the International Classification of Diseases, and finally, tabulated.

General or crude statistics are compiled by the General Department of Statistics, and the more specific or analytic ones, strictly utilitarian the public health viewpoint, by the Ministry of Health and Welfare.

Judged against the historical background, and on the basis of the organization established for the purpose, the preparation of death statistics may be considered acceptable both in total results and in geographic distribution. But the classification of causes of death is not so satisfactory, for reasons that will be stated later. It is precisely to overcome this deficiency that specific research programs are being planned on certain causes of death, such as the cardiovascular diseases and malignancies.

The quantitative and qualitative breakdown of death statistics, given in the next chapter, follows current systems for compiling and classifying such data.

IV. QUANTITATIVE BREAKDOWN OF DEATH STATISTICS

The numerical breakdown of figures may be summarized as follows:

- (a) Total deaths in the country, by states and municipalities;
- (b) Deaths by cause, for the entire country and for the subdivisions called for in the WHO Nomenclature Regulations.
- (c) Deaths by cause, for the entire country, states and municipalities.
- (d) Deaths by cause, according to age group and sex, for the entire country and its divisions.
- (e) Deaths in children under one year, by cause, for the entire country and by states and municipalities.
- (f) Deaths in the urban and rural areas, for the entire country and its divisions.
- (g) Still-births and age of mother, for the country and divisions.
- (h) Still-births by cause, for the country and divisions.
- (i) Calculation of the respective mortality rates.

To provide an indication of the quality of the data, records of deaths by cause show how many are supported by a death certificate and how many are not.

The following table gives the main statistics, on a nationwide basis only:

1. TOTAL DEATHS, DEATHS OF CHILDREN UNDER ONE YEAR,
AND MORTALITY RATES (BY DECADES) *
(1893-1962)

Year	<u>DEATHS</u>		<u>MORTALITY</u>	
	Totals	Under one year of age	General (per 1,000 population)	Infant (per 1,000 live births)
1893	487,931	141,417	39.8	376.7
1902	478,926	155,395	34.4	331.9
1922	364,832	101,202	25.3	223.1
1932	447,532	102,147	26.1	137.5
1942	471,600	111,100	22.8	118.2
1952	408,823	107,313	15.0	89.8
1962 ^{1/}	404,935	111,384	10.4	68.0

* No data for 1912, because of Revolution.
1/ Preliminary data.

Brief mention may be made of the fact that general mortality is now a quarter, and infant mortality less than a fifth, of what they were 60 years ago.

The total deaths recorded in Mexico are broken down into as many categories as are required by the International Classification of Diseases.

As a result, the ten main causes of death are also determined.

The tables that follow show the deaths by main heading and by the ten leading causes.

DEATHS BY CAUSES.-LARGE GROUPS

(International Classification of Diseases)

Groups	1922	1932	1942	1952	1957	1960
TOTAL	364,832	447,532	471,600	408,823	414,545	402,545
I. Infectious and parasitic diseases	83,283	111,166	96,774	67,441	61,387	44,725
II. Tumors (Neoplasms)	2,377	3,947	5,685	9,037	11,999	13,481
III.-Allergic diseases of the endocrine glands, of the metabolism and of nutrition	1,000	3,305	691	13,962	10,133	9,793
IV. Diseases of the blood and of the blood-forming organs	1,756	2,733	-	-	3,327	3,480
V. Mental diseases, psychoneurosis and personality disturbances	-	-	-	2,226	2,235	2,138
VI. Diseases of the nervous system and of the sensory organs	14,183	17,982	14,739	13,030	10,683	11,273
VII. Diseases of the circulatory system	6,981	11,203	14,982	25,176	28,535	28,728
VIII. Diseases of the respiratory system	64,083	77,603	86,019	71,674	76,573	70,937
IX. Diseases of the digestive system	25,667	105,660	122,703	88,670	87,984	83,190
X. Diseases of the genito-urinary system	2,664	5,845	7,344	6,015	4,338	3,979
XI. Childbirths and complications of pregnancy, of childbirth and of the puerperium	4,004	4,872	4,540	2,969	3,217	3,102
XII. Diseases of the skin and of the cellular tissue	1,013	693	1,816	1,937	448	348
XIII. Diseases of the bones and of the limbs	524	76	1,711	-	1,464	1,424
XIV. Congenital malformations	477	342	-	1,620	3,502	3,611
XV. Diseases of early infancy	11,269	15,558	21,023	31,300	42,549	47,081
XVI. Symptoms, senility and ill-defined states	89,509	66,934	68,585	47,935	40,393	48,943
XVII. Classification of accidents, poisonings, and violence according to the external cause	9,573	19,613	23,065	25,831	25,778	26,312

TEN PRINCIPAL CAUSES OF DEATH AND THEIR RANK

1 9 4 0			1 9 5 0			1 9 6 0		
Causes	(a)	(b)	Causes	(a)	(b)	Causes	(a)	(b)
Gastroenteritis (543-571-572)	96,556	1	Gastroenteritis	72,386	1	Gastroenteritis	59,553	1
Pneumonia (480-483-490-493)	74,959	2	Pneumonia	69,941	2	Pneumonia	49,388	2
Malaria (110-117)	23,917	3	Diseases of early infancy	25,296	3	Senility	45,534	3
Senility (780-795)	20,773	4	Malaria	22,996	4	Heart diseases	23,731	4
Diseases of early infancy (760-776)	20,465	5	Senility	22,852	5	Diseases of early infancy	16,153	5
Measles (085)	17,928	6	Heart diseases (410-443)	18,506	6	Accidents	13,602	6
Homicides (E964-E999)	13,175	7	Homicides	12,403	7	Malignant tumors (140-205)	12,484	7
Bronchitis (500-502)	13,126	8	Accidents (E800-E962)	11,994	8	Pneumonia of the newly born (763)	12,340	8
Tuberculosis (001-019)	11,199	9	Whooping cough (056)	11,888	9	Homicides	11,110	9
Dysentery (045-048)	10,951	10	Tuberculosis (001-019)	10,588	10	Bronchitis	10,785	10
Total of the ten causes	303,049			278,850			254,680	
TOTAL DEATHS	458,906			418,430			402,545	
% of the ten principal causes	66.04			66.64			63.27	

(a) - Deaths
(b) - Rank

To determine the reliability of the statistical compilations, the figures should be studied to see if they withstand quantitative and qualitative analysis.

V. ANALYSIS OF DEATH STATISTICS

From the quantitative point of view, the death statistics are correct --that is, their totals with, of course, a reasonable margin of error. But this cannot be said when they are broken down into partial figures or categories, for the following reasons:

- a) Not all the causes of death are supported by death certificates issued by a physician. Although great improvement has been made since 1930, the fact remains that some 32 per cent of the deaths registered (the percentage varies widely according to municipality and federal division) are not supported by medical certification.

The table that follows shows the picture by decades:

CAUSES OF DEATH WITH AND WITHOUT MEDICAL CERTIFICATION

(Percentage)

<u>Years</u>	<u>With medical certification</u>	<u>Without medical certification</u>
1940	51.66	48.34
1950	59.32	40.68
1960	68.02	31.98

- b) Death statistics are processed in the General Department of Statistics, which is under the Ministry of Industry and Commerce, and are based on Form No. 823. This is a transcript made by the Civil Registry offices from the death certificates issued by physicians and from the records of deaths at the offices. Where there is no death certificate, the cause of death is inferred by the judge or official in charge of the Civil Registry office. Qualitatively speaking, therefore, Form 823 --the basis of death statistics-- is about 32 per cent inconsistent.
- c) Two additional circumstances that bear on the quality of death statistics are the "mobility" of the judges in charge of executing them at the Civil Registry office and the fact that the death certificates are not 100 per cent uniform. This last is because they are not provided to the Civil Registry offices by the Ministry of Health and Welfare but rather, as a rule, by the private funeral agencies.

This combination of factors explains why death statistics are not 100 per cent reliable qualitatively.

To learn the truth about causes of death, which is of extreme importance both quantitatively and qualitatively, requires specific research, preferably by medical professionals using the direct method. By this means data almost 100 per cent reliable can be obtained on these two points:

1. The quantitative and qualitative importance of a given cause of death and its behavior in time and space.
2. Determination of the coefficient of error for that cause in the death statistics processed as described above from Form 823.

VI. RESEARCH PROGRAM ON SPECIFIC CAUSES OF DEATH

The epidemiology of diseases comprises numerous complex factors whose qualitative import cannot be included in its entirety on the death certificate, and far less on Form 823. Therefore, in order to raise the quality of statistics and to make them highly reliable, at least for certain specific causes of death, the following research plans have been elaborated:

- A. In 1956 and 1957 research was conducted on the cause of death listed as Pneumonia, which appeared to be the main cause in Mexico City.

In brief outline, the main results were that the true underlying cause that had preceded bronchopneumonia had been omitted --acute infections of the upper respiratory tract, measles, and so on-- and that, in the case of adults, the correct diagnosis had been altered as a result of social prejudices to conceal such actual causes as tuberculosis or cancer.

- B. Four very important surveys on morbidity, in the nature of preliminary investigations on causes of death, were carried out:
 1. Accidents in the Republic of Mexico (1959)
 2. Vital Statistics at the General Mental Hospital (1960)
 3. Characteristics of 4,094 Malignancy Patients (1960)
 4. First National Survey on Neurological and Psychiatric Patients (1961)

C. Since October 1961, a research program on mortality statistics has been under way in accordance with a proposal by the Pan American Sanitary Bureau (See Annex I). The plan is as follows:

A. Pre-Pilot Study in Mortality Statistics Research in Mexico City

This study was carried out during the months of October, November, and December 1961.

The deaths included were of residents aged from 15 to 75 years.

A total of 120 cases was investigated.

Manner of Conducting the Pre-Pilot Study:

1. Collection of death certificates from each Civil Registry office: An interview was held with each head of a Ministry of Health and Welfare Health Center and each Civil Registry office chief to inform them of the purpose of the survey. Ten certificates were then taken from these agencies, and immediately investigated. After photostating those of the Health Centers were returned as soon as possible to avoid interfering with their epidemiological work. Ten more certificates were then taken from another Civil Registry office and investigated, and so on for all 12 Civil Registry offices located in Mexico City.
2. Investigation:
 - a) An interview with the family was held by a nurse, who gathered data on the medical care received by the deceased, place of birth, residence, and occupation.
 - b) Interviews were held with the physician who issued the certificate or the hospital or clinic where the deceased received care, with a view to obtaining a better diagnosis.
 - c) In cases of death without a physician in attendance, a special questionnaire was completed by the nurse on her home visit.
 - d) Subsequently, the physician's opinion on the cause of death was recorded.
 - e) The principal investigator participated in making summary of the study, which included comments on morbid conditions leading to the death and an assignment of underlying cause.
 - f) Immediately thereafter, the completed questionnaires were photostated and sent every two weeks to the Pan American Sanitary Bureau in Washington, D. C.

3. Problems arising during research:

- a) Work schedule of physicians in Mexico City: most doctors work at their offices only from 5 to 7:30 p.m. employing the earlier hours for hospital visits and for home calls; therefore, the researcher cannot hold more than three interviews per day.
- b) A large number of private physicians and of private clinics and sanatoria do not keep clinical files.
- c) Some physicians hide their ignorance of the underlying cause of death, owing to a mistaken fear that they might be considered ill-qualified.
- d) A limited number of physicians trade in deaths certificates with funeral agencies.

Ignorant of the cause of death they often issue the certificate without even having seen the corpse.

- e) These same physicians also, on occasion, list a false address. This occurs when the deceased lived on the outskirts of the Federal District in an area under the jurisdiction of Mexico State. In order avoid funeral difficulties and expenses, they therefore indicate some non-existent address within the capital city.
- f) Because Mexico City is so large, and growing every year, it is often difficult to locate the home or family of the deceased or the physician who attend him.
- g) Difficulties were encountered in determining the cause of certain lesions in the case of violent deaths because the records kept by the Mexico City coroner's office do not specify whether they were due to accident, suicide, or homicide.

B. Inter-American Mortality Research (Definitive)

Mexico City

During the months of January and February 1962, personnel were trained for this research.

In March the definitive study was begun through a random sample taken from Forms 823 of the General Department of Statistics, one from each 7 deaths occurring in Mexico City residents in age groups from 15 to 74 years.

Procedure for Collecting Data in Mexico City1. Sampling of death certificates at the General Department of Statistics

The following data are taken from Form 823:

Official number, folio, entry number, date of death, age, sex, diagnosis, and classification code number, one from each 7 deaths occurring in Mexico City residents in age groups from 15 to 74 years.

Subsequently the death certificates are located at the Department of Public Health of the Federal District.

Photostatic copies are then made of each such document and taken to the local office of the Inter-American Mortality Investigation.

2. At the local office of Inter-American Mortality Investigation

- a) When the documentation arrives at this office, data from the death certificate are entered on pages 1, 2, 3, and 6 of the Investigation form, one to each individual, by secretariat personnel.
- b) The visiting nurse then goes to the family of the deceased and completes page 1. Special attention is paid to filling in this part of the form, for it facilitates subsequent study of the case.

Any difficulties arising during the interview are recorded under "Observations."

- c) The interviewing physician, after consulting the clinical information available, talks with the attending physician to determine the last diseases suffered by the deceased, and fills in pages 2 and 3. All information that may be useful in arriving at a correct diagnosis is gathered.

During the interview he does not show the death certificate unless absolutely necessary, to avoid influencing the answers of the attending physician.

- d) If an autopsy was made, he fills in the information on page 4.
- e) If the deceased did not receive medical care during his last illness but is known to have received previous treatment, the medical investigator attempts to find information at the hospital or from the doctor that may be related to the cause of death. If there is none, he visits the deceased's home, and then fills out page 5.

- f) With the combined information he has gathered, he fills in the first part of page 6, with emphasis on the attending physician's opinion as to the cause of death.
- g) He then meets with the principal investigator and together they proceed to reconstruct the history and analyze the conditions that led to death, with emphasis on the presumed underlying cause. Then, in cooperation with personnel specially trained for the purpose, the classification of the underlying cause of death is made.
- h) When the entire history has been completed, a typed copy is made, verified and dated by the principal investigator, and sent off.

3. Pan American Sanitary Bureau (Washington, D. C.)

- a) When these files are received, they are placed in order, numbered, and annotated as necessary, after which they are sent to the medical referees for assignment of cause of death.
- b) When they have been returned, the information and the medical referees' classification are systematically studied, so that each form may be sent to the pertinent Inter-American local office for its use.

VII. FIRST FRUITS OF DEATH STATISTICS RESEARCH IN MEXICO CITY

The research program being conducted in Mexico City is scheduled to be completed by the end of 1963. The results to date point to the following two conclusions:

- a) Mortality in Mexico City is being overestimated owing to false residence entries. A careful check of the documents and subsequent certification of attending physicians and statements of families have shown that often the deceased had not lived in Mexico City but in its environs.
- b) Many medical certificates are not issued by the attending physician but rather by a general practitioner in the employ of a funeral agency who, to make possible a speedy interment within the law issues a death certificate with an approximate diagnosis made on the basis of information furnished by relatives of the deceased.

Probably many more useful conclusions will be derived from the investigation now under way. Together, they will make it possible to adjust and correct the death statistics of Mexico City and thus make them more reliable, both quantitatively and qualitatively. That is the basic aim of this service.

Mexico, D. F., 19 June 1962

RODOLFO FLORES TALAVERA (ENG.)
DIRECTOR OF BIOSTATISTICS

Annexes

PAN AMERICAN HEALTH ORGANIZATION
Pan American Sanitary Bureau
Regional Office of the
WORLD HEALTH ORGANIZATION

PROPOSAL OF THE PAN AMERICAN HEALTH ORGANIZATION FOR
DEVELOPMENT OF MORTALITY STATISTICS FOR EPIDEMIOLOGICAL STUDIES*

Introduction

Cardiovascular diseases and cancer are today the causes responsible for the highest toll of lives in most well-developed countries, and emphasis is being placed on the expansion of medical research on these two causes to reach a better understanding of their natural history. The epidemiology of these diseases involves numerous and complex factors and existing mortality data are far from adequate and are often difficult of interpretation when geographical comparisons are attempted.

This proposal aims at investigating the circumstances of fatal illness of all kinds in samples of deaths occurring among the residents of approximately ten cities between the ages of 15 and 75 with a view to obtaining for these cities death rates by cause which are as comparable as possible and will serve as the background for epidemiological research.

The working documents prepared for the Planning Conference point out the difficulties of using the existing data for the countries as a whole as bases for epidemiological studies. Because of differences in extent of certification by lay personnel, terminology in use, nosological viewpoints, lack of diagnostic standards, and methods of certifying the underlying cause of death, the nation-wide statistics are not satisfactory, and it is advisable as a first step to try to obtain data from cities where some of these problems are not so great since most deaths are certified by physicians and medical facilities are readily available.

The specific aim of this proposal for development of mortality statistics for selected cities of the Americas is to obtain accurate death rates of adults in specific age groups from cardiovascular diseases, cancer and other diseases as an initial step in developing epidemiological studies and research programs through careful investigation of circumstances of the fatal illness and the evaluation of supporting diagnostic evidence. To obtain comparability of assignment of the underlying cause of death and classification in accordance with international rules, two medical statisticians with extensive experience in medical certification and the International Classification of Disease, and with responsibility for WHO Centers - to be termed medical referees - will be responsible for reviewing case histories and assignment of the category of the International Classification. Death rates by cause will be analysed by age, sex and occupation for the cities included and differences of significance will be determined, eliminating as far as possible those arising from varying ideas about medical terminology and nosology. Thus the analyses are to provide the international organizations, participating investigators, medical schools and health services with statistics in which the significant differences suggest fields for further investigation of the reasons for them.

* Prepared by
Working group, Dr. Percy Stocks, Consultant, Dr. Dario Curiel, Dr. Iwao Moryiama, Miss Mary Burke, Dr. Ruth R. Puffer, April 19-28, 1961.
Amendments incorporated from Planning Conference, 2-4 May 1961.

The project will provide measures of mortality from cardiovascular diseases in the cities in which the Inter-American Atherosclerosis Project H-4152 is being carried on. Although it is believed that there are wide variations in morbidity and mortality from coronary and cerebral vascular disease, the differences have not been evaluated, and more reliable death rates are needed if the significance of the autopsy findings in the Atherosclerosis Study are to be interpreted.

Investigation of each death will provide more adequate data about the clinical features of cardiovascular and other chronic diseases. Analysis will be made of cancer mortality by site, method of diagnosis, occupation, etc., to indicate possible leads for future research; and it is hoped that the study of histories of the decedents from cardiovascular and cerebro-vascular diseases will also provide clues to further investigations. Some of the results of this study may indicate the desirability of specific research projects in a country. Others may suggest further regional or world-wide collaborative morbidity studies with participation of several specialists. Medical schools should be able to provide the necessary talent and leadership in countries for such research and to utilize the results in teaching. The mortality statistics developed through this program will form a basis for the activities of these centers. The development of research centers in which the medical statistician, epidemiologist, pathologist, professor of preventive medicine and clinicians can work together on epidemiological studies will be stimulated in selected medical schools through their participation in the research.

Examples of the kind of inquiries which may be stimulated are research into the relations between Chagas disease and mortality from heart disease, and into the reasons for the high death rate from cancer of the stomach in Chile.

There are several by-products of this study which may contribute substantial benefits. One of these will be the clarification of the concept of the underlying cause of death utilizing the death certificates and supporting diagnostic evidence of physicians in perhaps ten countries. The concept of underlying cause first introduced in England was incorporated on the international form of medical certificate of cause of death which was included in Regulations No. 1 of WHO, 1948. The International Classification of Diseases which is required for use by all Member States of WHO provides the classification to be used. The definition of underlying cause of death is given in the Manual of International Classification of Diseases and also the concept is explained in the pamphlet, Medical Certification of Cause of Death, WHO, 1952. However, this present investigation provides an opportunity to review certification in relation to the history of fatal illness and for further development of the concept with examples. The medical referees through pilot studies and the first years work of assigning underlying cause would make clarifying statements of decisions and procedures which would be useful for others. Early in 1963 it is recommended that a working group be held for consideration of progress on this and preparation of a pamphlet for Spanish speaking countries.

The need for comparable clinical information for assignment of underlying cause will probably indicate the need for diagnostic standards and this is especially true in classifying cardiovascular diseases. The joint work of the medical referees with staff of Headquarters, especially of the Heart Section of WHO may result in the development of more precise definitions of the types of heart disease. Likewise in the field of nutrition clarification of definitions and standards is needed to attain the comparability desired.

This provision of more complete data on the fatal illness may produce results which indicate the desirability of new concepts for expressing the aggregate of diseases responsible for death, and if fully explored this research by

the Organization with the active participation of the investigators may have considerable influence on the entire process of recording and certifying causes of death.

The method of procedure is to have all deaths between the ages of 15 and 75 years, or a large sample of the deaths, investigated through interviews in the home, hospital, clinic and with the physician to obtain as complete a record as possible of the fatal illness, results of laboratory and other examinations, and autopsy findings. A sample of approximately 2,000 deaths is recommended from each city, to be obtained by taking alternate deaths within the age limits 15-74 in cities where the last annual total at those ages was between 3,000 and 5,000, every third death where it was between 5,000 and 7,000, every fourth death where it was between 7,000 and 9,000, and so on. Approximately ten cities would be included with one or more from the United States and perhaps one from England. A questionnaire has been developed for use in the collection of data in the cities.

The underlying cause of death will be assigned by medical referees following the same standards, and utilizing the history of fatal illness for deaths in all cities included in the study. The assignment of the rubric of the Classification will be in accordance with international rules and comparable mortality statistics by age, sex and cause will be developed.

The following nine phases of development of this project are considered, namely:

1. Questionnaire for individual investigation of each death.
2. Selection of cities and investigators.
3. Types of interviewers.
4. Pilot projects.
5. Analyses of results of pilot projects.
6. Conference of investigators.
7. Initiation of program.
8. Plans for analysis.
9. Time table of program.

1. Questionnaire for individual investigation of each death

The questionnaire consists of five pages designed to record the various kinds of information, obtained by:

- (1) Interview with a near relative at the home of the deceased.
- (2) Inquiry at the hospital, where death had occurred or where as ascertained at the home interview, the deceased had received medical attention.
- (3) Inquiry from the physician who had attended the deceased, if death had not occurred in hospital.
- (4) Extraction of information from such autopsy records, as may be available.
- (5) Extended inquiry into deaths of persons who had not received medical attention recently.

On a sixth summary sheet the original statement of cause of death and subsequent assignments of the underlying cause of death based upon the total information will be recorded.

Supplementary information concerning Instructions for Interviewers, Method of Determining the Underlying Cause of Death, and Coding List for Statistical Analysis of the records have been prepared.

2. Selection of Cities and Investigators

The following requirements are advisable for inclusion of a city in the Inter-American Mortality Investigation.

a. A recent census has been taken and data will be available by age and sex within defined geographical limits of the city.

b. Records of death will be available for use for the city with same defined limits.

c. Certificates will be needed of all deaths of residents of the city.

d. The principal investigator would be a statistician, epidemiologist or other member of department of preventive medicine who is interested in participating and collaborating in the investigation.

- (1) For value for team approach, for instruction of medical students and for research program of medical school, a member of the faculty of the Medical School or School of Public Health would be an excellent choice for investigator.
- (2) A close working relationship between the principal investigator and pathologists is highly desirable. The advice and continuous support of the pathologist participating in the Inter-American Atherosclerosis Project will be valuable.
- (3) The advice of cardiologists, clinicians and internists will be valuable.

e. An announcement of the plans for this investigation will be prepared and distributed on an exploratory basis by Dr. McGill, Dr. Tejada, Statistical Consultants of the Organization or members of the Planning Conference. Persons expressing interest in participation will be visited.

f. Applications for grants will be prepared by the principal investigators in accordance with the procedures of NIH with the assistance of the staff of the Pan American Health Organization.

g. A meeting of the investigators will be scheduled for January 1962 in order that the project may start with 1962 data.

h. Interviewers will be employed by the investigators to complete a questionnaire for each death and completed questionnaires will be transmitted monthly to the Organization.

i. The investigation of deaths in the city will be continued for 2 years with all or a sample of all deaths of residents from 15-74 years of age obtained.

j. A copy of sheets of the assignment of the underlying causes and tabulations will be returned to the investigator. The investigators will participate in discussions of the results and plans for specific research projects.

3. Type of Interviewers

Interviewers well qualified in terms of health and medical work would be employed. In certain cities medical students would be available and would be assisted in obtaining accurate and complete data by the principal investigator. In some areas a retired statistician or health officer or other physician might be employed. In other cities nurses or social workers trained in interviewing could be employed. It is expected that there will be variation in types of interviewer selected but it is hoped that the investigators will insure that complete data are provided. The quality of the records obtained in the Atherosclerosis Project indicates that the procedures followed in the development of that collaborative program have worked out well. The planning conference of investigators is a sound method of working out mutually satisfactory definitions and procedures.

4. Pre-Pilot Projects

Pre-Pilot projects in which the questionnaires are tested would be carried out as soon as possible, preferably in July, August, and September of 1961. It is proposed that 100 questionnaires be completed in at least one city in the United States and two or three in Latin America. These projects would serve not only to test the questionnaire and to improve written procedures but also to test the analytical procedures.

5. Analysis of Results of Pre-Pilot Projects

The completed questionnaires would be processed in accordance with the plans for analysis given under 8. The adequacy of the information for coding and for assignment of the underlying cause of death would be determined. Two medical referees would review these questionnaires for adequacy. The analysis of the pre-pilot procedures would be completed before the conference of investigators for they would be the basis of discussion of procedures at this meeting.

6. Conference of Investigators

This conference should be scheduled for January 1962. The investigators of the projects in approximately 10 cities would review in detail the plans for the investigation of mortality in the cities and, working together, necessary extensions or descriptions of procedures would be developed. This would be similar to the protocol planning conference for the Atherosclerosis Study.

7. Initiation of the Program

Investigation of deaths should begin in January 1962 in order that data for the complete year 1962 will be used. Analysis of data for cities for the working documents indicated the need of recent census data. Censuses have been conducted or will be conducted on the following dates:

Conducted	Scheduled	Others
1. Argentina (Sept.) 1960	Bolivia 1961	Costa Rica 1961?
2. Brazil (July) 1960	Canada 1961	Ecuador
4. Chile (Nov.) 1960	Colombia 1961	Guatemala
4. Dominican Republic (Aug.) 1960	El Salvador 1961	Haiti)
5. Mexico (June) 1960	Honduras 1961	Nicaragua) 1962?
6. Panama (Dec.) 1960	Peru 1961	Paraguay
7. U. S. (April) 1960	Venezuela (Feb.) 1961	Cuba 1963?
		Uruguay none

Because of the continual growth of cities it is important to have recent census data available for use in analysis. Thus the census plans must be considered in selection of cities. Also because some of the censuses were taken in 1960, the initiation of the program on January 1, 1962 is urgent.

A selection of cities will probably be made from those included in the Inter-American Atherosclerosis Project and others known to have certain research possibilities, namely:

Argentina: Buenos Aires or La Plata	Guatemala: Guatemala City
Brazil: Recife, Ribeirão Preto and/or São Paulo	Jamaica: Kingston
Chile: Santiago	Mexico: Mexico City
Colombia: Bogota and/or Cali	Peru: Lima
Costa Rica: San José	Puerto Rico: San Juan
El Salvador: San Salvador	United States: New Orleans
	Venezuela: Caracas

The program would continue for two years in these cities.

8. Analysis of Results of Pilot and Subsequent Project

The essential aim is to obtain death rates, specific for sex, age and underlying cause in the cities participating, as free as possible from bias arising through faulty or incomplete statements on the medical certificates and through differences in local practice in deriving the underlying cause from those statements. Evaluation of the total effect of these upon resulting rates, while facilitating better comparability of geographical incidence of different diseases, should also lead to improvements in death certification and classification and in the International Classification of Diseases itself as applied to Latin American countries. The method of dealing with the data collected must be based on (1) classification of causes of death by the same Medical Referee who takes account of all the information available and assigns what he considers to be the underlying cause, and (2) analysis of the results in such a way as to facilitate correlation of the underlying cause with various clinical and environmental factors, which will require the codification of those factors on a punch card for each death along with the code for the cause.

A Medical Referee for this work must be medically qualified to enable him to understand the implications of the clinical information from hospitals, physicians and pathologists, and must be well versed in the International Classification of Diseases and rules and also in epidemiology. It is a sine qua non that all records of deaths where more than one cause seems to be involved from every city in the project shall be assessed by each Referee; and it is desirable that he should also see the questionnaires where a single circulatory or ill-defined cause should be implicated.

As to the number of Referees, although it would be simpler to have only one, this is undesirable because of the possibility that he might be unable for some reason to finish the whole series, in which event all the work already done would have to be repeated by another Referee replacing him. With two Referees, should A fail to finish the series it would be possible to fall back on the findings of B alone, disregarding the uncompleted work of A. The employment of a large number of Referees, all working through the whole series, though theoretically desirable is not practicable, and in point of fact considerations of time and cost limit the number to two. The examination of several thousand case histories every 4 months through one or two years could be accomplished for each batch in about 4 weeks, which in any event would be the maximum duration feasible for such monotonous work at a stretch. The next quarter's documents could be dealt with when they come to hand after a break of some 3 months.

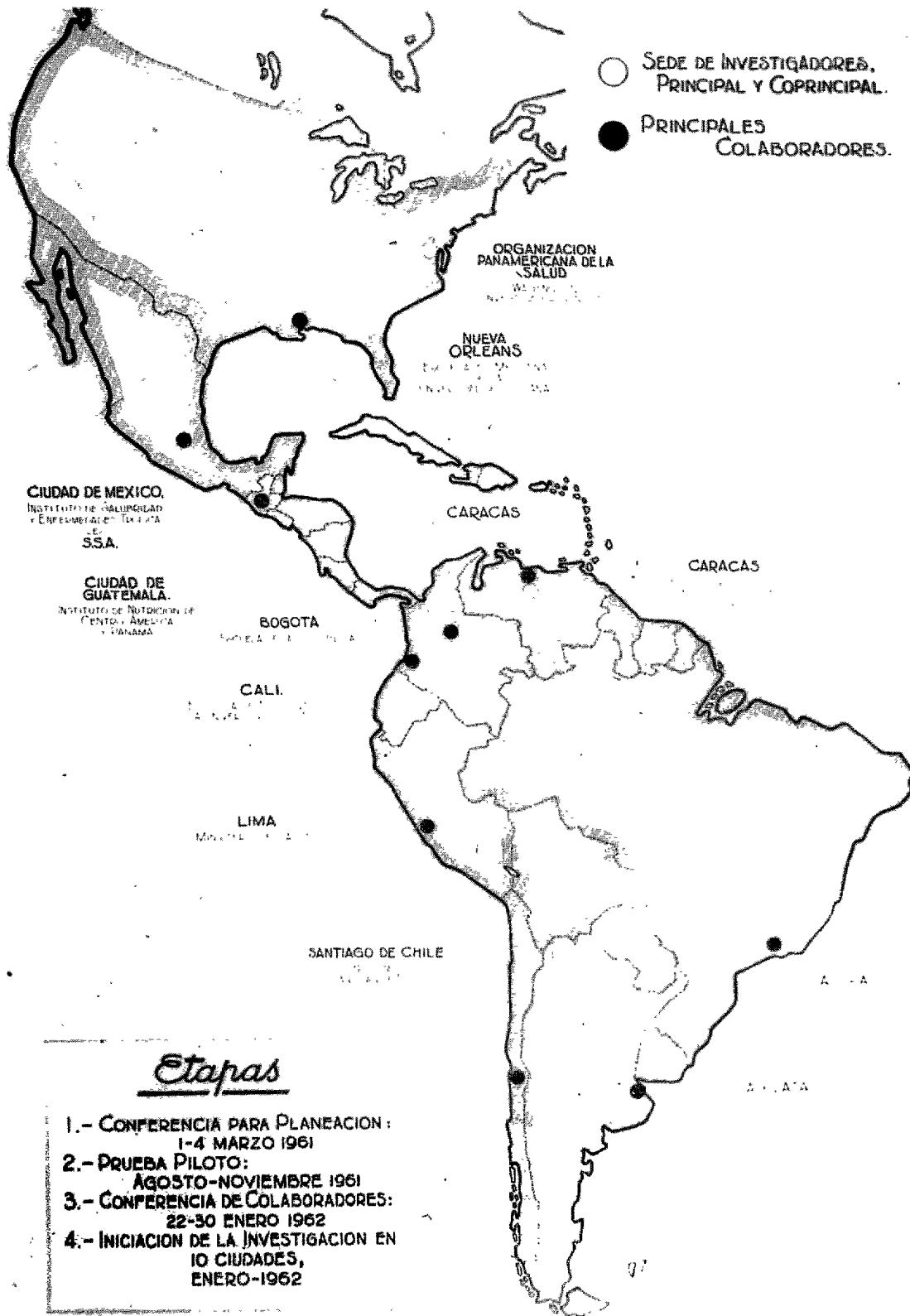
It is suggested that the Referees would be the present Director of the Latin American Centre (Dr. Dario Curiel) and the first Director of the WHO Centre for Classification of Diseases (Dr. Percy Stocks) during its early years in England, the latter to work at WHO Headquarters at Geneva. The plan of analysis given in detail in a separate document has been based on the assumption that this could be arranged.

9.- Timetable of Program

A timetable as given below has been prepared for this project. The pilot projects would be conducted in January 1962 and the work in this month may not be included, thus necessitating a slight extension. However, the Conference recommended that this timetable be carried out if possible.

ACTIVITY	DATE
Planning Conference Award of Grant Announcement of plans to possible investigators Visits to possible investigators for consideration of inclusion and completion of application forms Pre-Pilot Studies Analysis of pre-pilot studies	1 - 4 May 1961 By July 1, 1961 May, June, 1961 July, August, 1961 July, August, Sept. 1961 October, November, December, 1961
Initiation of Investigation Meeting of Investigators Coding and Review by Medical Referees	January 1, 1962 January 1962 April-May 1962, July-August 1962 November-December 1962
Coding and Review by Medical Referees Analysis of Results of First Years Work	Feb.-Mar. 1963 April-May 1963 Sept.-October 1963 June-September 1963
Coding and Review by Medical Referees Analysis of Results of 2 years Investigations	Jan.-Feb. 1964 July-August 1964 July-December 1964
Analysis of Results (cont.)	Jan.-July 1965

INVESTIGACION INTERAMERICANA
DE CAUSAS DE MORTALIDAD



ESQUEMA GEOGRAFICO Y CRONOLOGICO

ESTUDIO INTERAMERICANO DE LA MORTALIDAD

Confidencial

Nº serial _____

(La información que aquí se recoge será tenida como estrictamente confidencial y se usará solamente con fines de investigación estadística)

Ciudad y País _____ Nº del certificado _____

Nombre del difunto _____ Sexo _____ Edad al morir _____ Fecha de la defunción _____
Dirección de la casa de habitación _____

Investigación en la casa

Informante: Nombre _____ Tel. Nº _____ Parentesco o nexos _____ ¿Cuánto hace que conocía Ud. al difunto? _____

Difunto

Asistencia médica: ¿Qué clase de asistencia médica tuvo el difunto durante el último año de vida?

Nombres de clínica, hospital, o médico	Dirección	Fechas aproximadas

Si la respuesta es "ninguna", llene el Formulario Nº5 después de llenar lo de abajo

Datos sobre residencia (residencias de 2 años o más de duración)

Residencia	Ciudad y país	Nº de años	Observaciones
Lugar de nacimiento			
Otros lugares (dos años y más)			
Ultimo lugar			

Datos sobre ocupación (posiciones de 2 años o más de duración)

Ocupación	Períodos de edad	Lugar de trabajo					
		Casa	Oficina	Tienda	Fáb.	Espacio ext.	Otros
Primera							
Otras ocupaciones de dos años o más							
Ultima							

Observaciones _____

ESTUDIO INTERAMERICANO DE LA MORTALIDAD

Ciudad y País _____ No del certificado _____
 Nombre del difunto _____ Sexo _____ Edad al morir _____ Fecha de la defunción _____
 Dirección de la casa de habitación _____

Información en el hospital

Nombre del hospital _____ Fecha de admisión _____
 Nombre del médico _____
 Resuma la historia de la enfermedad _____

Hallazgos quirúrgicos _____
 Hallazgos significativos de laboratorio _____
 Hallazgos a los Rayos X _____
 Electrocardiograma _____
 Tensión arterial durante la hospitalización: Sistólica _____ Diastólica _____
 Hallazgos anatómo-patológicos Biopsia _____
 de significación: Autopsia _____
 Otros _____
 Diagnósticos principales _____

Razones para el diagnóstico _____
 Razones para la falta de certeza _____

Enfermedades anteriores: Si en el último año, subraye Sí y Reciente; si anterior a esto, subraye Sí y Antiguo; si nunca, subraye No; si ignorado, subraye Ign.

Angina de pecho	Sí (Rec.)(Ant.)	No	Ign.	Diabetes	Sí (Rec.)(Ant.)	No	Ign.
Enfermedad coronaria	Sí (Rec.)(Ant.)	No	Ign.	Enfisema,			
Enfermedad congestiva del corazón	Sí (Rec.)(Ant.)	No	Ign.	bronquitis	Sí (Rec.)(Ant.)	No	Ign.
Hipertensión	Sí (Rec.)(Ant.)	No	Ign.	Asma	Sí (Rec.)(Ant.)	No	Ign.
Fiebre reumática	Sí (Rec.)(Ant.)	No	Ign.	Pneumonía	Sí (Rec.)(Ant.)	No	Ign.
Enfermedad cerebrovascular	Sí (Rec.)(Ant.)	No	Ign.	Otras enfermedades			
Enfermedad renal	Sí (Rec.)(Ant.)	No	Ign.				

Para las muertes por cáncer

Primer síntoma _____
 Duración de los síntomas: Años _____ Meses _____
 Tumor primitivo: Sitio _____
 Tipo histológico _____
 Como fue diagnosticado: Inspección o palpación del tumor Si No Autopsia Si No
 Biopsia Si No Sangre Si No
 Citología Si No Otros _____
 Metástasis: (a) Regional _____
 (b) A distancia _____

Observaciones _____

ESTUDIO INTERAMERICANO DE LA MORTALIDAD

Ciudad y País _____ No del certificado _____

Nombre del difunto _____ Sexo _____ Edad al morir _____ Fecha de la defunción _____

Dirección de la casa de habitación _____

Información del médico o de la clínica _____ Fechas allí atendido _____

Nombre de la clínica (de haber habido) _____

Nombre del médico _____ Fecha de su última asistencia _____

Resuma la historia de la enfermedad _____

Hallazgos significativos de laboratorio _____

Hallazgos a los Rayos X _____

Electrocardiograma _____

Tensión arterial durante la hospitalización: Sistólica _____ Diastólica _____

Hallazgos anatomo-patológicos de significación: Biopsia _____

Autopsia _____

Otros _____

Diagnósticos principales _____

Razones para el diagnóstico _____

Razones para la falta de certeza _____

Enfermedades anteriores: Si en el último año, subraye Sí y Reciente; si anterior a esto, subraye Sí y Antiguo; si nunca, subraye No; si ignorado, subraye Ign.

Angina de pecho	Sí (Rec.)(Ant.)	No	Ign.	Diabetes	Sí (Rec.)(Ant.)	No	Ign.
-----------------	-----------------	----	------	----------	-----------------	----	------

Enfermedad coronaria	Sí (Rec.)(Ant.)	No	Ign.	Enfisema,			
----------------------	-----------------	----	------	-----------	--	--	--

Enfermedad congestiva del corazón	Sí (Rec.)(Ant.)	No	Ign.	bronquitis	Sí (Rec.)(Ant.)	No	Ign.
-----------------------------------	-----------------	----	------	------------	-----------------	----	------

Hipertensión	Sí (Rec.)(Ant.)	No	Ign.	Asma	Sí (Rec.)(Ant.)	No	Ign.
--------------	-----------------	----	------	------	-----------------	----	------

Fiebre reumática	Sí (Rec.)(Ant.)	No	Ign.	Pneumonía	Sí (Rec.)(Ant.)	No	Ign.
------------------	-----------------	----	------	-----------	-----------------	----	------

Enfermedad cerebrovascular	Sí (Rec.)(Ant.)	No	Ign.	Otras enfermedades	_____		
----------------------------	-----------------	----	------	--------------------	-------	--	--

Enfermedad renal	Sí (Rec.)(Ant.)	No	Ign.				
------------------	-----------------	----	------	--	--	--	--

Para las muertes por cáncer _____

Primer síntoma _____

Duración de los síntomas: Años _____ Meses _____

Tumor primitivo: Sitio _____

Tipo histológico _____

Como fue diagnosticado: Inspección o palpación _____

del tumor	Si	No	Autopsia	Si	No
-----------	----	----	----------	----	----

Biopsia	Si	No	Sangre	Si	No
---------	----	----	--------	----	----

Citología	Si	No	Otros	_____	
-----------	----	----	-------	-------	--

Metástasis: (a) Regional _____

(b) A distancia _____

Observaciones _____

ESTUDIO INTERAMERICANO DE LA MORTALIDAD

Nº serial _____

Ciudad y País _____ Nº del certificado _____

Nombre _____ Sexo _____ Edad _____ Fecha de la defunción _____

Dirección de la casa de habitación _____

Servicio en donde fue practicada la autopsia: Hospital → Especifíquese _____
 Médico-legal → Especifíquese _____
 Otro → Especifíquese _____

Protocolo de autopsia número: _____ Prosector _____

Diagnósticos anatomopatológicos

I. Enfermedad(es) principal(es) responsable(s) por la muerte	
II. Estados patológicos que contribuyeron a la muerte o que tuvieron relación con la causa principal de ella	
III. Otros estados patológicos de significación	

Autopsia completa: Sí No → Especifíquese _____

Caso incluido en el Estudio Interamericano de la Arterioesclerosis: No Sí → Número de acceso _____

ESTUDIO INTERAMERICANO DE LA MORTALIDAD

No serial _____

Ciudad y País _____ No del certificado _____
Nombre del difunto _____ Sexo _____ Edad al morir _____ Fecha de la defunción _____
Dirección de la casa de habitación _____

Información sobre las personas fallecidas que no recibieron asistencia médica durante su última enfermedad

¿Cuándo fue el difunto por última vez al hospital? _____

Nombre del hospital _____

Motivo de la hospitalización _____

¿Cuándo fue el difunto visto por última vez por un médico? _____

Nombre del médico _____

¿Por qué se consultó al médico? _____

¿Cuánto tiempo duró la última enfermedad? _____

¿Cómo se inició? _____

¿Cuál fue la naturaleza de la última enfermedad? _____

¿Le impidió la enfermedad ir al trabajo? _____

De ser así ¿por cuánto tiempo? _____

¿Lo obligó la enfermedad a permanecer en cama? _____

De ser así ¿por cuánto tiempo? _____

¿Tuvo anteriormente el difunto ataques de la misma enfermedad? _____

De ser así ¿cuántos? _____ ¿Durante cuántos años? _____

¿Tiene usted alguna idea de cuál fue la causa de la última enfermedad? _____

¿Ocurrió la muerte súbitamente? _____ ¿Se la esperaba así? _____

¿Hubo examen post-mortem? _____

De ser así ¿dónde? _____

Información adicional obtenida de otras fuentes _____

ESTUDIO INTERAMERICANO DE LA MORTALIDAD

Nombre del difunto _____ Ciudad y País _____ No del certificado _____
Sexo _____ Edad al morir _____ Fecha de la defunción _____
Dirección de la casa de habitación _____

Copie del certificado de defunción I. (a) _____
(b) _____
(c) _____
II. _____

Otra información _____
Clasificación original _____

Opinión del médico de causa _____

Sumario de la investigación médica _____

Clasificación _____ Firmas _____

TRANSLATION

Copy of certificate of death I. (a) _____
(b) _____
(c) _____
II. _____

Other information _____
Original classification _____

Opinion of the doctor of the cause _____

Summary of medical investigation _____

Classification _____ Signed _____

INVESTIGACION INTERAMERICANA DE MORTALIDAD

México, D. F. México

1. No. de orden _____

Confidencial

2. Nombre del difunto _____ 3. No. del certificado _____
 4. Fecha de muerte _____ 5. Lugar _____ 6. Sexo _____ 7. Edad _____ 8. Estado civil _____
 9. Dirección de la casa _____

INVESTIGACION EN LA CASA

Informante: _____ No. _____ ¿ desde cuándo conoce al difunto? _____
 10. Nombre _____ 11. Tel. _____ 12. Parentesco _____ 13. difunto? _____

Difunto:

14. Clase de asistencia médica durante el último año de vida o la última enfermedad

Nombres de hospital, clinica y médico	Dirección	Fechas

15. Para muertes sin atención médica durante la última enfermedad, atención médica anterior relevante

Nombres de hospital, clinica y médico	Dirección	Fechas y razones

16. Autopsia: si no

Servicio en donde fue practicada la autopsia: Hospital - Especifíquese _____
 Médico - Legal - Especifíquese _____
 Otros - Especifíquese _____

17. Datos sobre residencia (residencias de 2 años o más de duración):

Residencia	Ciudad y país	No. de años	Observaciones
Lugar de nacimiento			
Otros lugares 1.			
2.			
Ultimo lugar			

18. Ocupación

Características económicas		No. de años	Características Económicas		No. de años
Primera			Otra		
Categoría ocupacional			Categoría ocupacional		
Ocupación			Ocupación		
Rama de actividad			Rama de actividad		
Principal			Final		
Categoría ocupacional			Categoría ocupacional		
Ocupación			Ocupación		
Rama de actividad			Rama de actividad		

19. Observaciones _____

INVESTIGACION INTERAMERICANA DE MORTALIDAD

Confidencial

México, D. F. México

1. No. de orden _____

2. Nombre del difunto _____ 3. No. del certificado _____
4. Fecha de muerte _____ 5. Lugar _____ 6. Sexo _____ 7. Edad _____ 8. Estado civil _____
9. Dirección de la casa _____

INFORMACION CLINICA

20. Fuente de la información:

- Hospital Médico privado
 Médico forense Otro (especificar) _____

21. Sitio de la defunción:

- Casa Hospital
 Serv. Emerg. Vía pub.
 Otros _____

22. Nombre del hospital o clínica _____

23. Nombre del médico _____

24. Resumen de la historia clínica _____

25. Enfermedades anteriores:

- a. Angina de pecho Sí (Rec) (Ant) (Relac) No Ign
b. Infarto miocardio Sí (Rec) (Ant) (Relac) No Ign
c. Enf. congestiva del corazón Sí (Rec) (Ant) (Relac) No Ign
d. Hipertensión esencial Sí (Rec) (Ant) (Relac) No Ign
e. Fiebre reumática Sí (Rec) (Ant) (Relac) No Ign
f. Enf. cerebro-vascular
Trombosis cerebral Sí (Rec) (Ant) (Relac) No Ign
Hemorragia cerebral Sí (Rec) (Ant) (Relac) No Ign
Otra (esp.) _____
g. Enf. renal
Nefritis glomerular Sí (Rec) (Ant) (Relac) No Ign
Otra (esp.) _____

- h. Diabetes mellitus Sí (Rec) (Ant) (Relac) No Ign
i. Tuberculosis (resp.) Sí (Rec) (Ant) (Relac) No Ign
j. Otra enf. resp. (esp.) _____
k. Artritis reumática Sí (Rec) (Ant) (Relac) No Ign
l. Osteoartritis Sí (Rec) (Ant) (Relac) No Ign
m. Gota Sí (Rec) (Ant) (Relac) No Ign
n. Otras (esp.) _____

26. Hallazgos quirúrgicos _____

27. Hallazgos de laboratorios _____

INVESTIGACION INTERAMERICANA DE MORTALIDAD

México, D. F. México

1. No. de orden _____

Confidencial

2. Nombre del difunto _____ 3. No. del certificado _____
4. Fecha de muerte _____ 5. Lugar _____ 6. Sexo _____ 7. Edad _____ 8. Estado civil _____
9. Dirección de la casa _____

INFORMACION CLINICA

Continuación

28. Hallazgos de Rayos X Sí No

Sitio	Fecha	Resultado
T o r a x		
Gastrointestinal		
Otros (especifique)		

29. Electrocardiograma Sí No Fecha(s) de examen _____
Informe _____

30. Tensión arterial: Fechas y lecturas

1. _____ 2. _____ 3. _____

31. Hallazgos anatomopatológicos

Biopsia o espécimen quirúrgico:

Fecha _____ Organó _____ Diagnóstico _____

Autopsia: Sí No

Otros: Fecha _____ Tipo _____ Resultado _____

32. Diagnósticos principales _____

33. Razones para el diagnóstico _____

34. Razones para la falta de certeza _____

35. Muertes por cáncer

a. Sitio primitivo _____ b. Metástasis: Sí No

c. Método de diagnóstico

Histología Citología Otros (especifique) _____

Radiología Examen Físico _____

INVESTIGACION INTERAMERICANA DE MORTALIDAD

Confidencial

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INFORME DE AUTOPSIA

36. Diagnósticos Anatomopatológicos

I. Enfermedad(es) principal(es)
responsable(s) por la
muerte

II. Estados patológicos que
contribuyeron a la muerte
o que tuvieron relación
con la causa principal
de ella

III. Otros estados patológicos
de significación

37. Autopsia completa: Sí No Especificquese _____

38. Tipo de autopsia: I II III

39. Protocolo de autopsia número _____

40. Caso incluido en el Estudio Interamericano
de la Aterosclerosis: No Sí Número de acceso _____

INVESTIGACION INTERAMERICANA DE MORTALIDAD

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INFORMACION SOBRE LAS PERSONAS FALLECIDAS
SIN ASISTENCIA MEDICA

41. Cuánto tiempo duró la última enfermedad? _____

42. Cómo se inició? _____

43.Cuál fue la naturaleza de la última enfermedad? _____

44. Le impidió la enfermedad ir al trabajo? _____

De ser así ¿por cuánto tiempo? _____

45. Le obligó la enfermedad permanecer en cama? _____

De ser así ¿por cuánto tiempo? _____

46. Tuvo anteriormente el difunto ataques de la misma enfermedad? _____

De ser así ¿cuántos? _____ ¿Durante cuántos años? _____

47. Tiene usted alguna idea de cuál fué la causa de la última enfermedad? _____

48. Ocurrió la muerte súbitamente? _____ ¿Se le esperaba así? _____

Lapso en horas y minutos entre el comienzo del ataque y la muerte _____

49. Hubo un accidente o herida grave? _____

50. Hubo examen post-mortem? _____

De ser así ¿dónde? _____

51. Información adicional obtenida de otras fuentes _____

INVESTIGACION INTERAMERICANA DE MORTALIDAD

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SUMARIO

52. Cópiese del certificado de defunción I. (a) _____
(b) _____
(c) _____
II. _____
53. Otra información _____
54. Clasificación original _____
55. Opinión Diagnóstica del médico tratante _____

56. Sumario de la investigación médica _____

57. Clasificación _____ 58. Firmas _____

SUMMARY
(to be completed by medical referees)

Underlying Cause of Death	Weight	International Classification Number	
(1) <u>From death certificate</u>			
Original _____	—		
Reviewed _____	—		
(2) <u>From all data</u>		A	B
Group (b) All deaths for review			
Not in doubt	3		
Uncertain (Most likely	2		
(But might be	1		
(3) <u>Final assignment</u> col. _____ code		Int. Class. Number	Columns on card
Group (a) One cause indicated	6		
Group (b) Causes selected (Sum A+B)			

