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The Effect of the Sixth Revision of the International Lists of Diseases and Causes of Death Upon Comparability of Mortality Trends

FEDERAL SECURITY AGENCY

Public Health Service

National Office of Vital Statistics

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(Provisional Report Based Upon the 10-percent Sample of Deaths for 1949 and 1950)

A death rate takes on added significance when it is compared with the death rate for another place, or for the same place for another year. An important consideration in the comparison of death rates is that the two rates are comparable, that is, the collection and classification procedures employed in the compilation of data for the rates must be reasonably similar.

The comparability of statistics relating to causes of death assumes particular importance at this time because of the major changes that were made recently in the classification of causes of death. Some of these classification changes will bring about a precipitous drop or a sudden rise in the death rates for certain causes of death in 1949 which represent nothing more than artificial changes. Even those death rates showing no change between 1948 and 1949 must be examined to see whether or not the effects of classification changes have not obscured an increasing or decreasing death rate.

Classification of causes of death

Statistics on causes of death are derived from the medical certification of causes of death prepared by the attending physician, or by the coroner in cases of death by violence, or where a medical practitioner was not in attendance. The medical information so reported on the death certificate is classified according to the International Lists of Causes of Death. This classification scheme provides a uniform basis for the classification of causes of death.

When only one cause of death is reported on the death certificate, the assignment of the cause of death is simple. However, when more than one cause of death is jointly reported, there arises the problem of selecting one of the causes for tabulation. Approximately two-thirds of the death certificates now being filed mention more than one cause of death.

Before 1949, the selection of a cause of death for tabulation was made by reference to a set of priority tables published in the Manual of Joint Causes of Death. This manual, which was developed for use in the United States, was followed until 1949 when an international procedure for joint-cause selection was adopted. The Manual of Joint Causes of Death consists of priority tables based on a series of decisions made by clinicians regarding the relative importance of various diseases as causes of death. By the use of these priority tables, it was possible to select the primary cause for tabulation when more than one cause was jointly reported. The new international rules adopted for use in the United States in 1949 place the responsibility on the medical practitioner to indicate the underlying cause of death. If the medical certification is properly made, the physician's statement of the underlying cause of death is accepted for tabulation.

Effect of previous revisions on comparability

It has been the practice to revise the International List of Causes of Death every 10 years since 1900 to keep abreast of medical progress. Each decemnial revision of the International List has produced some break in comparability of cause-of-death statistics. For the most part, the degree of discontinuity in the trend has not been considered a problem of great concern.

Van Buren¹ described some of the major shifts in the cause-of-death statistics up to the 1938 revision due to changes in the classification of causes of death. Because studies of the quantitative effects of such changes on comparability of statistics were not made prior to 1940, Van Buren was not able to show the exact amount of difference resulting from various revisions.

In connection with the Fifth Revision (1938) of the International List of Causes of Death, Dunn and Shackley measured the change in mortality by cause due to the revision. This was done by coding mortality data for 1940 by the old and new coding procedures. The results of the study have been useful in evaluating the effects of the Fifth Revision of the International List and changes in the joint-cause selection procedure.

The effect of the recent revision

The Sixth Revision (1948) of the International Lists of Diseases and Causes of Death which was adopted for use in the United States in 1949 represents a more sweeping change than any other of the previous revisions. The classification scheme has been subject to considerable regrouping, particularly to accommodate the causes of morbidity which were not included as separate categories in previous lists because they were not important as causes of death. Regroupings were also made which make the meaning of certain causes different from that in previous revisions. For example, leukemia and aleukemia were classified under the Diseases of the blood and blood-forming organs in the previous revisions. In the 1948 Revision, these categories were transferred to the section on Neoplasms.

In addition to the changes in the classification

¹Van Buren, George H., "Some Things You Can't Prove by Mortality Statistics," Vital Statistics—Special Reports, vol. 12, No. 13, 1940.

²Dunn, Halbert L., and Shackley, William, "Comparison of Cause-of-Death Assignments by the 1929 and 1938 Revisions of the International List: Deaths in the United States, 1940," Vital Statistics—Special Reports, vol. 19, No. 14, 1944.

list itself, the method³ of selecting the cause of death for primary mortality tabulations was modified in 1949. All of these changes have introduced rather serious breaks in continuity of mortality trends for a number of causes of death. As data presented in this report indicate, it will be impossible to compare mortality statistics for the years prior to and subsequent to 1949 for causes such as diabetes mellitus without taking into consideration the changes in the classification list and the method of selecting the underlying cause of death for primary mortality tabulations.

Measurement of the effect of the revision

Dual coding of causes of death—that is, coding by the 1938 International List and the Joint Cause Manual and by the 1948 International Lists of Diseases and Causes of Death and the international rules—will show the net changes resulting from the two decennial revisions. Although this procedure does not give the effects of the revision of the different components of the coding procedure, it is sufficient for the purpose of developing a continuous time series. For example, when all deaths involving tuberculosis in the 10-percent sample for 1949 were coded, the following results were obtained:

Fifth Revision

Sixth Revision	Tuber- culosis	Not tuber- culosis	<u>Total</u>
Tuberculosis	3,562	374	3,936
Not tuberculosis	546		546
Total	4,108	374	4,482

In order to obtain the comparability ratio to continue the time series, only the marginal totals for deaths from tuberculosis classified by the Sixth Revision (3,936 deaths) and by the Fifth Revision (4,108 deaths) are needed. The ratio of these two figures (3,936 ÷ 4,108) represents the comparability ratio for tuberculosis.

As an aid in the interpretation of mortality data, it is essential that a study be made of data classified by the Fifth (1938) and Sixth (1948) Revisions of the International Lists of Diseases and Causes of Death. Such a study is now in progress. Mortality data for 1950 are being classified by procedures employed prior to the latest revision as well as by the new matheds. In view of the fact that it will be several years before the study can be completed, this report presents, as an interim measure, provisional data based upon a 10-percent sample of death certificates filed in 1949 and 1950.

The sample utilized for the present study does not constitute ideal material for a comparability study for several reasons. One of these relates to the fact that it was necessary to introduce certain changes in coding procedure during the first year's

experience with the new classification method. Ordinarily, such revisions would not be made during the course of the year. Because the sample data for 1949 provided the first opportunity to apply the new international coding rules on a large scale, it seemed desirable to utilize the sample for experimental purposes. This experience made possible the development of definitive coding rules for use in the regular annual processing operations.

In addition to the problems arising from a few changes in the procedures that affected certain cause-of-death categories, the use of the sample for studies of this kind has other limitations. For example, additional information on causes of death from queries is not available on the sample because it is drawn before such information can be obtained. Also, there is some bias in the representation of certain causes in the sample. Lastly, sampling variability in the 10-percent sample may produce results that differ from those to be obtained from the study of all death certificates for 1950. Despite these limitations, the findings of this study will serve to indicate the magnitude of the problem of comparability for the various causes of death.

Discussion of results

Table 1 is a summary of results of coding the 10-percent sample of death certificates for 1949 and 1950 according to the two methods of cause-of-death classification. The differences resulting from the use of the two procedures are expressed by a factor termed the comparability ratio. This ratio is obtained by taking the number of deaths assigned to a particular cause using the Sixth Revision and dividing it by the number of deaths assigned to that cause by the Fifth Revision. A comparability ratio of 1.00 indicates that approximately the same number of deaths would be assigned to a particular cause of death whether the new or old classification and coding procedures were used. This does not mean, however, that the classification of a particular cause of death remained the same in the two revisions. For example, the comparability ratio for malignant neoplasms is 1.01. However, examination of the two classifications will show that leukemia and aleukemia which were categories under the Diseases of the blood in the Fifth Revision are now classified under Neoplasms in the Sixth Revision. The transfer of these categories as well as some others such as Hodgkin's disease (Lymphogranulomatosis) would have increased the number of deaths ascribable to malignant neoplasms by the 1948 Revision had it not been for some losses resulting from the new rules for the selection of the underlying cause. According to these rules, deaths would not ordinarily be assigned to Neoplasms if the physician had certified the malignancy as a contributory cause; whereas, according to the old priority procedure, the neoplasm would probably have been selected as the primary cause of death even though reported as a contributory condition. In the case of malignant neoplasms, therefore, the loss due to the new selection procedure was compensated for by the gain resulting from the transfer of certain categories to the classification of malignant neoplasms.

The net loss or gain indicated by the comparability ratios shows rather serious differences in comparability between the two revisions. For example, mortality data classified by the Sixth Revision would

³For further discussion, see Fales, W. Thurber, and Moriyama, Iwao M., "International Adoption of Principles of Morbidity and Mortality Classification," American Journal of Public Health, vol. 39, No. 1, January 1949.

show about 43 percent fewer deaths from diabetes mellitus when compared with data for the same period based on the Fifth Revision. Since the International List classification of diabetes has not been changed, all of this difference is the result of the revision in the method for selecting the cause of death to be tabulated. According to the physician's judgment, a death may be due to diabetes; or diabetes may be a contributory cause and not directly connected with the sequence of events leading to death. In the latter case, the death is not assigned to diabetes by the new coding procedure based upon the physician's judgment or opinion. In the former situation, diabetes is coded as the underlying cause of death. Since diabetes is reported as a contributory condition in a large proportion of cases, 4 the new coding procedure results in a significantly fewer number of deaths assigned to diabetes.

There are other causes of death in which trend data have been markedly affected by the new revision. For example, chronic nephritis has been one of the major causes of death in past years. However, in the Sixth Revision, the terms denoting arteriolar nephrosclerosis which were once classified under chronic nephritis were transferred to form new categories under hypertensive diseases. This has resulted in a very large decrease in the number of deaths now attributed to chronic nephritis. Another example may be found in the statistics for rheumatic fever. In the Fifth Revision, chronic rheumatic heart disease took precedence over rheumatic fever. In the Sixth Revision, deaths are assigned to rheumatic fever if reported as the underlying cause of chronic rheumatic heart disease. However, the rheumatic fever categories include only deaths in which rheumatic fever was present or active at the time of death.

Major re-alignments were made in various parts of the 1948 Revision. For example, in the section on Diseases of pregnancy, childbirth, and the puerperium in the 1938 Revision, the major factor in determining the classification was whether the death occurred before, during, or after childbirth. In the 1948 Revision, the classification is based on whether the condition arose during pregnancy, or was noted before delivery; whether the delivery occurred with complications; or whether there were some complications of the puerperium. Data on the detailed changes are not yet available, but it may be seen that even the total assigned to maternal causes has been affected by the revision. The classification procedures used in 1949 result in about 9 percent fewer deaths assigned to Deliveries and complications of pregnancy, childbirth, and the puerperium. Most of this is due to the fact that "childbirth" or certain complications of childbirth and the puerperium are frequently mentioned as a contributory cause rather than as an underlying cause of death.

About 5 percent more deaths are being classified as <u>Certain diseases of early infancy</u> by the Sixth Revision as <u>compared</u> with the previous classification. A large part of the apparent increase resulted from the reclassification of pneumonia among infants under 1 month and diarrhea of newborn under <u>Certain diseases</u>

of early infancy. Another major change made was with respect to prematurity. Although prematurity (or immaturity) does not appear in the list of 64 selected causes of death, mention is made of this change because of the significance attached to prematurity as a problem. In the 1938 Revision, prematurity was a separate category with priority over other diseases of early infancy, except injury at birth. In the 1948 Revision, prematurity or immaturity was made a secondary axis of classification. Since the various specific morbid conditions under Certain diseases of early infancy are now further categorized as to whether or not there was mention of immaturity, it is possible to assess how immeturity of the infant was associated with the various causes of death in infancy. The Sixth Revision provides for a residual category of immaturity, but comparable statistics on prematurity per se will not be available.

· Mention was made of the comparability of data for malignant neoplasms. Although the net change in the data for total malignant neoplasms is small, the statistics for specific sites of the malignancy have been affected. Except for the provision of categories for secondary neoplasms of the lung and bronchus, thoracic organs, and of the lymph nodes, all of the categories in the section on malignant neoplasms relating to specific sites in the 1948 Revision are now being used to classify the primary or the presumptive primary site of the neoplasm. In the past revisions, the neoplasms of the various sites were weighed according to the priority tables in the Manual of Joint Causes of Death. Therefore, this difference in procedure as well as in the classification will make it difficult to interpret cancer mortality trends for the various sites of the disease without data on comparability.

Provisional correction factors for national data

Although the data presented in table 1 relate to a limited number of groups of causes and are subject to various qualifications, they will be useful in bridging the gap between the two revisions until data from the complete study of all death certificates for at least 1 year become available. The comparability ratios may be applied as correction factors⁵ to data prior to 1948 to make them comparable with data for 1949 and subsequent years. In this connection, there is some question as to how far back one can correct data based on these comparability ratios, but at the moment it seems reasonably valid to carry the conversion back to 1939.

The application of the comparability ratios to death rates for the various causes in 1949 is illustrated in table 2. This table shows the death rates for 1949 and 1948 using the different classification procedures, and the percent annual changes in the death rates if (1) no allowance were made for comparability between the two revisions and (2) allowance is made for the classification change. It may be seen that for a number of infective diseases, comparability in classification does not present a problem. On the other hand, the interpretation of mortality changes

⁴For further discussion of this problem, see Moriyama, I. M., "Is Diabetes Mortality Increasing?" Public Health Reports, vol. 63, No. 41, October 8, 1948.

⁵In order to approximate comparability of data for years prior to 1949 classified by the Fifth Revision with those classified by the Sixth Revision, multiply number of deaths or death rates by the comparability ratio for the specific cause of death.

is seriously affected for many causes of death when allowance is not made for changes in classification. In some instances, the apparent change in the death rates over the 2 years is so great that the figures are immediately suspected of being in error. These comparisons show that no definitive conclusions can be reached in regard to changes in mortality without taking into consideration the factor of comparability.

The comparability ratios as derived would be suitable as correction factors to be applied to data for the past decade provided that there has been no significant change in the method of medical certification or in the distribution of deaths for the various causes by age, race, and sex. Since it is not practical to recode all of the data for the past years to determine if there has been any change in medical

certification practice, information on this factor is lacking. However, consideration should be given in any definitive study to changes in the distribution of deaths over the years. For example, it may be seen from the table below that the comparability ratio varies considerably by age for causes such as malignant neoplasms, diabetes mellitus, and diseases of the heart. It is obvious that the comparability ratio for all ages cannot be used to compute comparable rates on an age-specific basis. Because of the variation in comparability ratios by age, the comparability ratios for all ages will result in over- or under-correction if applied to data for past years which differ in age distribution from that obtained in 1949.

COMPARABILITY RATIOS FOR SPECIFIED CAUSES BY AGE FROM A 10-PERCENT SAMPLE OF DEATHS: UNITED STATES, 1949

•	All	Under	1-14	15-24	25-44	45-64	65-74	75 years	Not
	ages	1 year	years	years	years	years	years	and over	stated
Tuberculosis	0.958	0.971	0.985	0.991	0.981	0.953	0.920	0.909	0.846
	1.004	2.385	2.211	1.565	1.105	1.014	0.972	0.940	0.935
	0.580	0.500	0.900	1.025	0.752	0.573	0.557	0.576	0.600
	1.094	0.625	0.860	0.949	1.065	1.092	1.104	1.096	1.124

The data presented in the above table are for illustrative purposes and do not include all of the causes where the comparability ratios vary by age. Data for other causes may be found elsewhere. This report also includes comparability ratios by race and sex. However, these comparability ratios must be used with caution because they may be subject to considerable error since the computation is based on small frequencies.

Owing to the difference in distribution of deaths by cause, age, race, and sex from year to year, it will be found necessary to make small balancing adjustments after conversion of data to the new classification base. In all cases, the sum of the deaths from various causes should equal the total number of deaths registered for the year; and the sum of the subgroups should equal the corrected total for the subgroups. The necessity of making these balancing adjustments will undoubtedly produce inconsistent results unless a set computing procedure is developed.

Until such time that a standard computing procedure is developed, the following method of computation is suggested:

(1) The total for the various cause-of-death groups such as the cardiovascular-renal diseases and influenza and pneumonia should be derived by summing the corrected values of the subgroups under the groupings. Although more accurate results will be obtained by correcting each subgroup by applying the comparability ratio by age, race, and sex, this procedure cannot be

⁶See table 13, page 18, in "Current Mortality Analysis," vol. 7, No. 13, National Office of Vital Statistics, 1950.

consistently followed because data in those details are not readily available. Therefore, as a practical approach, it is proposed that for the time being the corrected data for each subgroup in the list of 64 selected causes of death be used as the correct total for that cause. If the total for any cause of death is obtained in any other way, the derived total and any component parts should be adjusted to the "correct" total. (2) After corrections are made in the cause-ofdeath groupings, it will be found that the grand total will differ somewhat from the total number of reported deaths for the year. Any difference in the grand totals should be adjusted by prorating the difference into the residual group, All other diseases.

Provisional correction factor for State data

The problem of correcting cause-of-death statistics for the individual States is made difficult at this time by lack of stable data for the various States. As an interim measure, comparability ratios based upon data for the 2-year period, 1949 and 1950, from the 10-percent sample are suggested for use. These ratios are shown in table 4. Comparability ratios have not been computed for causes, when the greater frequency was less than 20 for an individual State, and where the total for the United States is less than 3,000 because of the relatively large sampling errors involved in ratios based on small frequencies. Except in a few instances, it would appear that in the absence of data for States, the comparability ratio for the United States provides the best available estimate for individual States.

TABLE 1.—COMPARISON OF CAUSE-OF-DEATH ASSIGNMENTS FOR 64 SELECTED CAUSES OF DEATH BY THE SIXTH AND FIFTH REVISIONS OF THE INTERNATIONAL LISTS FOR A 10-PERCENT SAMPLE OF CERTIFICATES FILED IN 1949 AND 1950 IN STATE VITAL STATISTICS OFFICES: UNITED STATES

(Exclusive of fetal deaths and of deaths among armed forces overseas)

CAUSE OF DEATH	CATEGORY N	UMBERS •		F DEATHS TIED BY—	DIFFERENCE DUE TO REVISION	Provi- sional compara-
(Sixth Revision of the International Lists)	Sixth Revision	Fifth Revision	Sixth Revision	Fifth Revision	Number of deaths	bility ratio
Tuberculosis, all forms	001-019 001-008 010-019	13-22 13 14-22	7,346 6,771 575	7,659 7,066 593	-313 -295 -18	0.96 0.96 0.97
Syphilis and its sequelae	020-029 040 043 045-048 050,051	30 1- 4 27 8,115b	1,623 22 - 227 83	2,179 24 - 208 74	-556 -2 - +19 +9	0.74 * - 1.09 1.12
Diphtheria	055 056	10 9 6 3 36	105 187 179 - 408	105 188 181 - 417	0 -1 -2 -	1.00 0.99 0.99
Smallpox Measles Typhus and other rickettsial diseases Malaria All other infective and parasitic diseases	084 085 100-108 110-117 (030-039,041,042,044,049, (052-054,059-074,081-083, [086-096,120-138]	34 35 39 28 2,5,7,11,12,23-26,29, 31,32,37,38,40-44,	149 16 23 839	156 15 22 1,135	-7 +1 +1 -296	0.96 * *
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues	140-205 140-148 150-156A, 157-159 160-164 170 171-179 180, 181 156B, 165, 190-199 204 200-203, 205	45-55 45a,b,c,e,f 46 47 50 48,49,51 52 45d,53-55	41,366 1,056 16,230 3,977 3,792 6,832 1,970	² 40,814 1,056 17,028 4,195 4,050 7,378 2,013 5,094	+552 0 -798 -218 -258 -546 -43 +2,415	1.01 1.00 0.95 0.95 0.94 0.93 0.98
Benign neoplasms and neoplasms of unspecified nature Diabetes mellitus Anemias Meningitis, except meningococcal and tuberculous	260 290-293	56,57 61 73 81	1,183 4,955 858 428	1,133 8,707 536 345	+50 -3,752 +322 +83	1.04 0.57 1.60 1.24

Major cardiovascular-renal diseases	330-334,400-468,592-594	58,83,90-103,131,132	151.993	145,632	+6,361	1.04
Diseases of cardiovascular system	330-334,400-468	58,83,90-103	147,003	131,530	+15,473	1.12
Vascular lesions affecting central nervous system		83	30,478	26,875	+3,603	1.13
Rhoumatic fever	400-402	58	432	162	+270	2.67
Diseases of heart	410-443	90-95	105,820	97,357	+8,463	1.09
Chronic rheumatic heart disease	410-416	90a,92b,c,93c,95b		•	-427	0.91
	420	304,920,6,936,930	4,199	4,626	-401	0.91
Arteriosclerotic heart disease, including coronary disease	420	(om 01 00 1)				
Nonrheumatic chronic endocarditis and other	493 499	90b,91,92a,d,e	707 007	00 553		7 70
myocardial degeneration	421,422	93a,b,d,e	101,621	92,731	+8,890	1.10
Other diseases of heart	430-434	[94,95a,c]				
Hypertension with heart disease	440-443)					•
Hypertension without mention of heart	444-447·	1.02	2,630	402	+2,228	6.54
General arteriosclerosis		97 .	- 6,185	5,408	+777	1.14
Other diseases of circulatory system	451-468	96,98-101,103	1,458	1,326	+132	1.10
Chronic and unspecified nephritis and other renal sclerosis	592-594	131,132	4,990	14,102	-9,112	0.35
	·	'	, ,	•	1	
Influenza and pneumonia, except pneumonia of newborn	480-493	33,107-109	3 ₄ ,670	s _{5,249}	-579	0.89
Influenza	480-483	33	3 ₆₇₉	^ś 542	+137	1.25
Pneumonia, except pneumonia of newborn	490-493	107-109	33,991	3 _{4,707}	-716	0.85
Bronchitis	500-502	106	593	634	-41	0.94
DI ONOMI OID	300-302	100	0.50	00±		0.01
Ulcer of stomach and duodenum	540,541	117	1,584	1.853	-269	0.85
Appendicitis	550-553	121	691	753	-62	0.92
Hernia and intestinal obstruction		122	1,856	1,747	+109	1.06
nerma and incestinal obstruction	560,561,570	166	1,000	T) (#1	, +103	1.00
Gastritis, duodenitis, enteritis, and colitis, except	-4E -EE3 -EE6	770 700	7 744	3 700	.00	1.01
diarrhea of newborn		119,120	1,744	1,722	. +22	
	581	124	2,818	3,448	-630	0.82
Acute nephritis and nephritis with edema, including nephrosis		130	721	403	+318	1.79
Hyperplasia of prostate	610	137	1,240	1,219	+21	1.02
		·			t	•
Deliveries and complications of pregnancy, childbirth,	i					
and the puerperium	640-689	140-150	560	614	-54	0.91
Abortion	650-652	140,141	58	67	-9	0.87
All other complications	640-649,660-689	142-150	502	5 4 7	-45	0.92
Congenital malformations	750-759	1.57	3,650	3,743	-93	0.98
Certain diseases of early infancy	760-776	158-161	12,053	11,430	+623	1.05
Birth injuries, postnatal asphyxia, and atelectasis	760-762	(⁴)	4,806	(*)	(*)	(⁴)
Infections of newborn	763-768	l , (' 4)	817	{ 4 }	(4)·	(⁴)
Other diseases peculiar to early infancy, and		` '	·	` '	` '	• .*
immaturity unqualified	769-776	(4)	6,430	(4)	(4)	(4)
Immooration disquosition .	,,,,,	. ` '	*,	` '	\ ',	` '
Symptoms, senility, and ill-defined conditions	780-795	162,199,200	5,641	5,674	-33	0.99
All other diseases	Residual	Residual	0,011	0,014		•••
Accidents	E800-E962	169-176,178-195	17,511	18.425	-914	0.95
Motor-vehicle accidents	E810-E835	170	6,074	6.077	-314	1.00
All other accidents	1		, ,		- 1	
All other accidents	E800-E802,E840-E962	169,171-176,178-195	11,437	12,348	-911	0.93
Suicide	E963,E970-E979	163,164	3,241	3,234	+7	1.00
Homicide	E964,E980-E985	165-168,198	1,496	1,494	. +2	1.00
Injury resulting from operations of war	E965,E990-E999	196,197	10	. 1	+9	*
	L	L	l			

¹Ratio of deaths classified by the Sixth Revision to deaths classified by the Fifth Revision.

²Excludes 474 deaths from <u>Lymphogranulomatosis</u>, <u>Hodgkin's disease</u> (Fifth Revision number 44b and Sixth Revision number 201); and 1,738 deaths from <u>Leukemia</u> and aleukemia (Fifth Revision number 74 and Sixth Revision number 204). When these deaths are added to the number assigned to Fifth Revision numbers 45-55, the comparability ratio (41,366 ÷ 43,026) becomes 0.96. The comparability ratio for <u>Leukemia and aleukemia</u> is 1,721 ÷ 1,738, or 0.99; and for <u>Lymphogranulomatosis</u> (Hodgkin's disease), 475 ÷ 474, or 1.00.

Trequencies are from the 1950 sample only. Data for 1949 were not used because changes in coding rules were made during the time the sample was being processed.

⁴Comparability ratios for subdivisions of Certain diseases of early infancy will be published in a later report on infant mortality.

(Exclusive of fetal deaths and of deaths among armed forces overseas. Rates per 100,000 estimated midyear population excluding armed forces overseas. See table 1 for comparable category numbers in both revisions)

	DEATH	RATE		Comparable		FERENCE BETWEEN 948 AND 1949
CAUSE OF DEATH (Sixth Revision of the International Lists)	1949 (coded by Sixth Revision)	1948 (coded by Fifth Revision)	Provisional comparability ratio ¹	death rate 1948 ² (Sixth Revision)	No allowance for change in classifi- cation ³	Allowance for change in classifi- cation ⁴
_ ALL CAUSES	971.7	989.0	• • •	•••	•••	***
Tuberculosis, all forms	26.3 24.2 2.1	30.0 27.7 2.3	0.96 0.96 0.97	28.8 26.5 2.3	-12.3 -12.6 -8.7	-8.7 -8.7 -8.7
Syphilis and its sequelae	5.8 0.1 0	8.0 0.1	· 0.74 *	5.9	-27.5 0	-1.7
Dysentery, all forms	1.0	0.7 0.3	1.09 1.12	0.8 0.4	+42.9	+25.0 -25.0
Diphtheria	0.4 0.5 0.6 0.0	0.4 0.8 0.6 0	1.00 0.99 0.99 *	0.4 0.8 0.6	0 -37.5 0 *	0 -37.5 0
Acute poliomyelitis	1.8 0.0 0.6	1.3 0.0 0.6	0.98 * 0.96	1.3 0.0 0.6	+38.5 0 0	+38.5 0
Typhus and other rickettsial diseases	0.0 0.1 2.6	0.1 0.1 3.9	* ·* 0.74	2.9	* 0 -33.3	-10.3
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues	138.9 3.4 55.4 13.1 12.5 23.3 6.6 24.6	5134.9 3.3 58.2 13.0 13.1 24.7 6.7	1.01 1.00 0.95 0.95 0.94 0.93 0.98	136.2 3.3 55.5 12.3 12.3 22.4	+3.0 +3.0 -4.8 +0.8 -4.6 -5.7 -1.5	+2.0 +3.0 -0.2 +6.5 +1.6 +2.2 0
Benign neoplasms and neoplasms of unspecified nature Diabetes mellitus	3.9 16.9 3.0 1.4	3.7 26.5 1.8 1.3	1.04 0.57 1.60 1.24	3.8 15.1 2.9 1.6	+5.4 -36.2 +66.7 +7.7	+2.6 +11.9 +3.4 -12,5

				A 700 A			
Major cardiovascular-renal diseases	502.5	488.2	1.04	506.2	+2.9	-0.7	⋖
Diseases of cardiovascular system	485.0	436.6	1.12	488.0	+11.1	-0.6	<u>?</u>
. Vascular lesions affecting central nervous system		89.7	1.13	101.8	+12.5	-0.9	ය
Rheumatic fever		0.6	2,67	1.7	+166.7		-
Diseases of heart						-5.9	
		322.8	1.09	350.8	+8.1	-0.5	No.
Chronic rheumatic heart disease		, 15.9	0.91	14.5	-13.2	-4.8	
Arteriosclerotic heart disease, including coronary disease		,			1		10
Nonrheumatic chronic endocarditis and other myocardial degeneration		306.9	1.10	336.3	+9.3	-0.3	
Other diseases of heart	• [[300.9	1.10	330.0	73.5	-0.3	
Hypertension with heart disease	. []			,			
Hypertension without mention of heart	8.2	1.3	6.54	8.7	+530.8	-5.7	
General arteriosclerosis		17.5	1.14	20.1	+17.1	+2.0	
Other diseases of circulatory system							
Chronic and unspecified nephritis and other renal sclerosis		4.6	1.10	5.0	+2.2	-6.0	
omente and ampheetited meaning and other renai scierosis	17.5	51.5	0.35	18.2	-66.0	-3.8	
Influenza and pneumonia, except pneumonia of newborn	30.0	38.7	0.89	34.2	-22.5	-12.3	
Influenza			i e		1	1	
Pneumonia, except pneumonia of newborn		3.5	1.25	4.3	-11.4	-27.9	
Bronchitis	27.0	35.2	0.85	29.9	-23.3	-9.7	,
proncultis	2.2	2.4	0.94	2.2	8,3	0	뵨
Ulcer of stomach and duodenum	5,3	6.0	0.85	5.1	-11.7	+3.9	널
Appendicitis							FECT
Hernia and intestinal obstruction		2.9	0.92	2.6	-13.8	-3.8	ក
	6.6	6.9	1.06	7.3	-4.3	-9.6	ij
Gastritis, duodenitis, enteritis, and colitis, except							_
diarrhea of newborn		6.0	1.01	6.1	+11.7	+9.8	, OF
Cirrhosis of liver		11.3	0.82	9.2	-18.6	· 0	. 7
Acute nephritis and nephritis with edema, including nephrosis		1.5	1.79	2.6	+60.0	-7.7	2
Hyperplasia of prostate	4.6	4.6	1.02	4.7	0	-2.1	THE
Deld-series and comelded the series of the s					07.4	١ ,	. 02
Deliveries and complications of pregnancy, childbirth, and the puerperium		2.8	0.91	2.6	-21.4	-15.4	SIXTH
Abortion		. 0.3	0.87	0.3	0	0	녈
All other complications	1.9	2.5	0.92	2.3	-24.0	-17.4	
Congenital malformations	12.7	13.2		ı i o		1	REVISION
			0.98	12.9	-3,8	-1.6	
Certain diseases of early infancy		42.1	1.05	44.4	+2.6	-2.7	1
Birth injuries, postnatal asphyxia, and atelectasis		·(a)	(()				Ħ
Infections of newborn		(8) (8)	(e) (e)	,			¥
Other diseases peculiar to early infancy, and immaturity unqualified-	23.0	(~)	(°)				-
O	15.0	30.7		, 30.0			
Symptoms, senility, and ill-defined conditions	15.8	18.7	0.99	18.6	-15.5	-15.1	
All other diseases		44.6		747.1	-1.6	-6.8	
Accidents		66.9	0.95	63.6	-9.3	-4.6	-
Motor-vehicle accidents		22.1	1,00	22.1	-3.6	-3.6	
All other accidents	39.3	44.8	0.93	41.5	-12.3	-5.3	
Suicide		77.0	, ,,	3.0			
		11.2	1.00	11.2	+1.8	+1.8	
Homicide		5.9	1.00	5.9	-8.5	-8.5	
Injury resulting from operations of war	0.0	0	*	•••	*	, •••	

¹Ratio of deaths classified by the Sixth Revision to deaths classified by the Fifth Revision, based on a 10-percent sample of deaths filed in State vital statistics offices, 1949 and 1950.

²Based on estimated deaths computed by applying the comparability ratio to deaths for 1948 coded by the Fifth Revision.

³Comparison between rates for Sixth Revision (1949) and for Fifth Revision (1948).

⁴Comparison between rates for Sixth Revision (1949) and for Sixth Revision (1948).

^{**}Comparison between lates 1 of State Action (2015), and 2015 of See footnote 2, table 1.

**Geometrison between lates 1 of State Action (2015), and 2015 of See footnote 2, table 1.

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**Geometrison between lates 1 of State Action (2015), and 2015 of See footnote 2, table 1.

**Geometrison between lates 2 of See footnote 2, table 1.

**Geometrison between lates 2 of See footnote 2 of See footnot

(Exclusive of fetal deaths. Rates per 100,000 estimated midyear population. Numbers after causes of death are category numbers of the Sixth Revision of the International Lists, 1948)

	, 1949	CON	PARABLE I	EATH RATE	ÉS BASED (ON THE SIX	TH REVISI	ON OF THE	E INTERNAT	CIONAL LIS	STS ¹
CAUSE OF DEATH	1949 (final)	1948	1947	1946	1945	1944	1943	1942	1941	1940	1939
ALL CAUSES	971.7	989.0	1,008.1	997.6	1,060.8	1,064.2	1,089.4	1,035.6	1,050.4	1,074.2	1,060.4
Tuberculosis, all forms	26.3	28.8	32.2	34.9	38.4	39.6	40.8	41.4	42.7	43.9	45.2
	24.2	26.5	29.7	32.2	35.4	36.6	37.5	38.0	39.1	40.4	41.3
	2.1	2.3	2.4	2.8	3.0	2.9	3.3	.3.4	3.6	3.6	3.9
Syphilis and its sequelae	5.8	5.9	6.6	6.9	7.9	8.4	9.0	9.1	9.9	10.7	11.2
	0.1	20.1	20.2	20.2	20.4	20.4	20.5	20.5	20.8	21.0	21.5
	0	0	0	0	0	0	0	0	0	0	0
	1.0	0.8	0.7	0.7	1.3	1.5	1.6	1.5	2.0	2.0	2.1
	0.3	0.4	0.4	0.6	0.9	1.0	1.2	1.2	1.4	1.8	2.2
Diphtheria	0.4	0.4	0.6	0.9	1.2	0.9	0.9	1.0	1.0	1.1	1.5
	0.5	0.8	1.4	0.9	1.3	1.4	2.5	1.9	2.8	2.2	2.3
	0.6	0.6	0.6	0.9	1.3	2.1	2.2	0.7	0.5	0.5	0.7
	0.0	0	0.0	0	0	0	0.0	0	0.0	. 0.0	0
Acute poliomyelitis	1.8	1.3	0.4	1.3	0.9	1.0	0.8	0.4	0.6	0.8	0.6
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.6	0.6	0.3	0.9	0.2	1.4	0.9	0.9	1.6	0.5	0.9
Typhus and other rickettsial diseases	0.0	² 0.1	² 0.2	² 0.2	² 0.3	² 0.3	² 0.3	² 0.2	2 _{0.2}	² 0.2	² 0.2
	0.1	² 0.1	² 0.1	² 0.2	² 0.3	² 0.4	² 0.5	² 0.6	2 _{0.9}	² 1.1	² 1.3
	2.6	2.9	2.9	3.1	3.6	3.6	4.0	4.0	4.2	4.3	4.6
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues	138.9 3.4	136.2	133.6 3.3	131.2	135.2 3.5	130.0	125.4 3.3	123.3 3.2	121.0 3.2	120.8	118.3
peritoneum	55.4	55.5	55.3	55.1	57.9	56.0	54.5	53.3	52.3	52.6	52.2
	13.1	12.3	11.5	10.3	9.9	9.0	8.3	7.8	7.3	6.9	6.3
	12.5	12.3	11.8	11.7	12.1	11.6	11.3	11.2	10.9	11.0	10.6
	23.3	22.8	22.8	22.6	23.4	22.7	21.7	21.3	21.8	21.7	21.3
	6.6	6.6	6.4	6.1	6.2	5.9	5.6	5.6	5.7	5.6	5.4
unspecified sites	24.6	23.4	22.6	22.0	22.3	21.4	20.7	21.1	19.8	19.9	19.4
Benign neoplasms and neoplasms of unspecified nature210-239 Diabetes mellitus260 Anemias290-293 Meningitis, except meningococcal and tuberculous340	3.9	3.8	4.2	4.5	4.8	5.1	5.1	4.7	4.9	5.2	5.2
	16.9	15.1	14.9	14.1	15.1	15.0	15.4	14.5	14.5	15.1	14.5
	3.0	2.9	3.1	3.2	3.9	3.9	4.3	3.9	3.7	3.8	3.8
	1.4	1.6	1.7	1.8	1.9	2.3	2.4	2.1	2.0	2.1	2.0

Major cardiovascular-renal diseases 330-334,400-468,592-594	502.51	506.21	507.5	490.5	520 . 9 i	509.7	517.6 [483.5	475.9 i	480.8	459.0	⋖
Diseases of cardiovascular system330-334.400-468	485.0	488.0	488.2	470.5	498.1	486.0	492.2	458.7	450.1	452.8	430.6	Vol.
Vascular lesions affecting central nervous system330-334	100.9	101.8	103.6	101.9	110.8	106.2	107.8	102.3	101.1	102.9	99.6	36,
Rheumatic fever400-402	1.6	1.7	1.9	2.1	2.7	3.0	3.0	3.0	3.3	3.5	3.5	•
Diseases of heart410-443	349.1	350.8	348.9	333.1	348.4	341.8	345.0	320.0	314.3	316.0	298.2	No.
Chronic rheumatic heart disease410-416	13.8	14.5	15.1	15.3	17.0	17.5	18.4	17.2	18.0	18.9	18.2	-
Arteriosclerotic heart disease, including) I	1	- 1	ŀ	ŀ				1	1		10
coronary disease420		- 1	- 1		Ì				- 1	l		
Nonrheumatic chronic endocarditis and other myocardial degeneration421,422	335.3	336.3	333.8	317.8	331.4	324.3	326.5	302.8	296.3	297.2	280.0	
Other diseases of heart430-434	1	1			ŀ		- 1		1	- 1		
Hypertension with heart disease440-443	1	1	- 1	i			[1			
Hypertension without mention of heart444-447	ا م م ا		ا م	ا ۾ د				0.7				
General arteriosclerosis450	8.2 20.5	8.7	8.7	8.5	9.2	8.6 22.1	8.9 23.2	8.3 20.8	7.7	6.8	6.2 19.4	
Other diseases of circulatory system451-468	4.7	5.0	4.8	4.5	4.5	4.3	4.4	4.2	4.1	3.9	3.6	
Chronic and unspecified nephritis and other	'	5. °	7.0	Ŧ.5	#. 0	Ŧ.0	***	*		٥.٠١	3.0	
renal sclerosis592-594	17.5	18.2	19.3	20.1	22.8	23.7	25.4	24.8	25.8	27.9	28.4	
			-	l	- 1		- 1		1			
Influenza and pneumonia, except pneumonia of newborn 480-493	30.0	34.2	38.7	40.3	47.0	57.6	62.2	50.5	60.6	65.6	70.8	
Influenza480-483	3.1	4.3	6.7	7.9	9.7	16.4	16.1	10.2	19.8	19.1	20.5	뎐
Pneumonia, except pneumonia of newborn	27.0	29.9	32.0	32.5	37.3	41.2	46.1	40.3	40.7	46.5	50.3	F
PLOUGHT £18	2.2	2.2	2.3	2.1	2.2	2.5	2.6	2.5	2,5	2.8	2.7	편
Ulcer of stomach and duodenum540,541	5.3	5.1	5.1	5.0	5.8	5.6	6.0	5.9	5.7	5.8	5.8	EFFECT
Appendicitis550-553	2.5	2.6	3.1	3.5	4.7	5.4	5.6	5.7	7.4	9.0	9.9	
Hernia and intestinal obstruction560,561,570	6.6	7.3	8.0	8.5	9.3	9.6	9.9	9.1	9.2	9.6	10.0	QF
Gastritis, duodenitis, enteritis, and colitis, except	ŀ			1	- 1		,	1	-	ļ		1-3
diarrhea of newborn543,571,572	6.7	6.1	5.7	5.9	8.8	10.0	9.7	8.9	10.6	10.4	11.7	THE
Cirrhosis of liver581	9.2	9.2	8.5	7.9	7.8	7.1	7.6	7.7	7.3	\$ 7.0	6.8	
Acute nephritis and nephritis with edema, including nephrosis590.591	2.4	2.6	2.6	3.1	3.9	4.0	4.2	4.0	4.1	4.5	4.5	Ħ
Hyperplasia of prostate610	4.6	4.7	5.0	5.4	5.7	5.9	6.3	6.1	6.3	6.8	4.5 6.7	SIXTH
	2.0		•••	0.1	٠.,١	•••	0.0	-	•••	•••	0.1	
Deliveries and complications of pregnancy, childbirth,	ľ	l		1	ł		1					쿒
and the puerperium640-689	2.2	2.6	3.2	3.4	3.9	4.4	4.9	4.9	5.4	6.1	6.3	₹
Abortion650-652	0.3	0.3	0.4	0.5	0.6	0.6	0.8	0.8	0.9	1.1	1.2	<u> </u>
All other complications640-649,660-689	1.9	2.3	2.8	2.9	3.3	3.7	4.1	4.1	4.5	5.0	5.2	REVISION
Congenital malformations750-759	12.7	12.9	13.8	12.4	11.9	12.3	12.2	11.6	10.2	9.7	9.2	24
Certain diseases of early infancy760-776	43.2	44.4	48.0	46.5	40.5	42.0	43.7	43.7	42.3	41.2	41.0	•
Birth injuries, postnatal asphyxia, and atelectasis 760-762	17.2	(8)	(3)	/31	(³)	/31	/3\	(8)	(3)	(3)	(³)	
Infections of newborn763-768	3.0	(s)	(a)	(a)	(3) (3)	(3)	(2)	(s)	(3) (3)	(a)	(3) (3)	
Other diseases peculiar to early infancy,				'		- 1			i	Į.		
immaturity unqualified769-776	23.0	(³)	(^a)	(³)								
Symptoms, senility, and ill-defined conditions780-795	15.8	18.6	19.1	19.6	21.8	22.1	23.1	22,2	22.2	23.5	22.2	
All other diseasesResidual	43.9	447.1	450.0	452.8	461.9	465.3	471.3	471.3	474.5	483.9	487.8	
AccidentsE800-E962	60.7	63.6	65.8	66.4	68.5	67.5	69.4	67.6	72.5	69.5	67.0	
Motor-vehicle accidentsE810-E835	21.3	22.1	22.8	23.9	21.2	18.3	17.8	21.2	30.0	26.1	24.7	
All other accidentsE800-E802, E840-E962	39.3	41.5	43.0	42.5	47.2	49.2	51.7	46.5	42.5	43.4	42.2	
SuicideE963,E970-E979	11.4	11.2	11.6	11.6	11.2	10.0	10.3	12.1	12.9	14.4	14.2	
HomicideE964,E980-E985	5.4	5.9	6.1	6.4	5.7	5.0	5.1	5.9	6.1	6.3	6.5	
Injury resulting from operations of warE965,E990-E999	0.0	0	0	20.0	20.1	2 0.0	20.0	20.2	20.0	0	20.0	
	·		·				l					

Based on estimated deaths computed by applying the provisional comparability ratio to deaths coded by the Fifth Revision.

Based on deaths coded by the Fifth Revision. No comparability ratio available.

Rates will be published in a later report on infant mortality.

*Computed from the difference between total deaths and sum of estimated deaths for specified causes.

HOTE. -For 1940-49, deaths exclude those among armed forces overseas. Rates based on population excluding armed forces overseas.

TABLE 4.--COMPARISON OF CAUSE-OF-DEATH ASSIGNMENTS FOR SPECIFIED CAUSES BY THE SIXTH AND FIFTH REVISIONS OF THE INTER-UNITED STATES

(By place of occurrence. Exclusive of fetal deaths and of deaths among armed forces overseas. Comparability ratios are puted where the greater

		TUBERCU	LOSIS, ALL	FORMS	NEÓPLASM	IT NEOPLASM IS OF LYMPH OPOIETIC TI	ATIC AND	DIAI	BETES MELLI	TUS
	. AREA	Sixth Revision	Fifth Revision	Provi- sional compara- bility ratio	Sixth Revision	Fifth Revision	Provi- sional compara- bility ratio	Sixth Revision	Fifth Revision	Provi- sional compara- bility ratio
1	UNITED STATES	7,346	7,659	0.96	41,366	40,814	1.01	4,955	8,707	0.57
2	AlabamaArizonaArkansasCalifornia	160	169	0.95	584	563	1.04	75	109	0.69
3		105	114	0.92	134	128	1.05	12	22	0.55
4		124	128	0.97	343	342	1.00	37	54	0.69
5		497	538	0.92	2,936	2,939	1.00	211	544	0.39
6	Colorado Connecticut Delaware District of Columbia	77	79	0.97	338	329	1.03	23	41	0.56
7		78	85	0.92	681	669	1.02	71	145	0.49
8		17	17	*	90	90	1.00	17	19	*
9		60	61	0.98	277	278	1.00	36	53	0.68
10	Florida	117	124	0.94	737	721	1.02	91	151	0.60
11	Georgia	168	172	0.98	659	628	1.05	77	111	0.69
12	Idaho	11	10	*	98	93	1.05	6	23	0.26
13	Illinois	•479	492	0.97	2,828	2,808	1.01	387	623	0.62
14	Indiana	136	145	0.94	1,081	1,085	1.00	132	219	0.60
15		44	49	0.90	777	800	- 0.97	85	151	0.56
16		47	· 47	1.00	509	511	1.00	66	105	0.63
17		236	246	0.96	639	620	1.03	62	94	0.66
18	Louisiana	144	146	0.99	593	571	1.04	69	104	0.66
19		34	36	0.94	333	335	0.99	32	72	0.44
20		199	201	0.99	670	670	1.00	90	141	0.64
21		191	198	0.96	1,611	1,623	0.99	189	392	0.48
22	Michigan	259	263	0.98	1,721	1,705	1.01	218	382	0.57
23	Mimesota	78	78	1.00	957	909	1.05	100	181	0.55
24	Mississippi	118	121	0.98	409	394	1.04	46	69	0.67
25	Missouri	194	206	0.94	1,258	1,240	1.01	145	223	0.65
26 27 28 29	Montana Nebraska Nevada New Hampshire	22 31 7 9	24 30 8 9	0.92 1.03 *	152 373 34 175	146 370 35 175	1.04 1.01 0.97 1.00	8 51 5 28	22 69 6 42	0.36 0.74 * 0.67
30	New Jersey New Mexico New York North Carolina	275	280	0.98	1,568	1,510	1.04	181	328	0.55
31		69	72	0.96	107	104	1.03	10	15	*
32		833	866	0.96	5,179	5,168	1.00	606	1,329	0.46
33		169	183	0.92	615	589	1.04	84	133	0.63
34	North Dakota	17	· 16	*	122	118	1.03	22	36	0.61
35		370	393	0.94	2,337	2,294	1.02	324	495	0.65
36		91	· 94	0.97	532	531	1.00	47	82	0.57
37		40	43	0.93	413	410	1.01	41	71	0.58
38 39 40 41	Pennsylvania	50 <u>4</u> 51 86 22	525 51 86 22	0.96 1.00 1.00 1.00	279 319	3,206 271 300 155	0.99 1.03 1.06 1.05	464 68 55 20	96	0.57 0.71 0.69 0.67
42 43 44 45	Tennessee Texas Utah Vermont	256 439 7 20	265 445 8 22	0.97 0.99 * 0.91	134 116	709 1,498 136 111	1.04 1.04 0.99 1.05	63 179 21 14	226 31 22	0.60 0.79 0.68 0.64
46 47 48 49 · 50	Virginia	168 67 85 131 4	180 75 88 145 4	0.93 0.89 0.97 0.90	417	1,166	1.03 1.01 1.03 1.05 1.00	69 57 57 199 5	117 79 315	0.54 0.49 0.72 0.63

See footnotes at end of table.

NATIONAL LISTS, FOR A 10-PERCENT SAMPLE OF DEATH CERTIFICATES FILED IN 1949 AND 1950 IN STATE VITAL STATISTICS OFFICES: AND EACH STATE

the ratio of deaths classified by Sixth Revision to deaths classified by Fifth Revision. The ratios have not been comfrequency is less than 20)

MAJOR CA	RDIOVASCUI DISEASES	ar-renal	DISEASES	OF CARDIC SYSTEM	OVASCULAR		R LESIONS A L NERVOUS		DIS	eases of He	EART	
Sixth Revision	Fifth Revision	Provi- sional compara- bility ratio	Sixth Revision	Fifth Revision	Provi- sional compara- bility ratio	Sixth Revision	Fifth Revision	Provi- sional compara- bility ratio	Sixth Revision	Fifth Revision	Provi- sional compara- bility ratio	
151,993	145,632	1.04	147,003	131,530	1,12	30,478	26,875	1.13	105,820	9 7,3 57	. 1.09] 1
2,391 475 1,429 10,737	2,349 472 1,435 9,963	1.02 1.01 1.00 1.08	2,244 453 1,363 10,492	1,981 422 1,277 9,230	1.13 1.07 1.07 1.14	569 103 299 2,015	556 101 288 1,593	1.02 1.02 1.04 1.26	1,542 318 975 7,652	1,337 300 926 7,067	1.15 1.06 1.05 1.08	3 4
1,238 2,184 371 880	1,188 2,073 360 837	1.04 1.05 1.03 1.05	1,193 2,144 350 855	1,033 1,937 306 712	1.15 1.11 1.14 1.20	243 418 50 140	208 358 45 119	1.17 1.17 1.11 1.18	856 1,574 270 656	763 1,474 239 550	1.12 1.07 1.13 1.19	6 7 8 9
2,772 2,908 485 10,128	2,674 2,863 458 9,702	1.04 1.02 1.06 1.04	2,661 2,736 466 9,743	2,405 2,397 419 8,772	1.11 1.14 1.11 1.11	625 783 109 1,708	562 724 88 1,463	1.11 1.08 1.24 1.17	1,844 1,737 323 7,462	1,717 1,540 306 6,920	1.07 1.13 1.06 1.08	11 12 13
4,460 3,013 2,099 2,721	4,335 2,898 2,013 2,671	1.03 1.04 1.04 1.02	4,314 2,924 2,026 2,602	3,786 2,619 1,793 2,352	1.14 1.12 1.13 1.11	970 700 482 587	884 600 426 £551	1.10 1.17 1.13 1.07	2,975 1,999 1,354 1,805	2,609 1,861 1,256 1,652	1.14 1.07 1.08 1.09	15 16
2,265 1,100 2,437 5,831	2,219 1,031 2,346 5,484	1.02 1.07 1.04 1.06	2,176 1,055 2,348 5,723	1,982 939 2,042 5,135	1.10 1.12 1.15 1.11	422 256 410 1,077	403 210 369 919	1.05 1.22 1.11 1.17	1,601 706 1,808 4,269	1,489 666 1,594 3,993	1.08 1.06 1.13 1.07	
6,044 3,008 1,738 4,694	5,735 2,861 1,713 4,558	1.05 1.05 1.01 1.03	5,864 2,951 1,595 4,486	5,278 2,673 1,416 4,053	1.11 1.10 1.13 1.11	1,407 702 413 965	1,161 593 380 875	1.21 1.18 1.09 1.10	4,025 1,962 1,069 3,232	3,825 1,877 946 2,971	1.05 1.05 1.13 1.09	23 24 25
1,306 149 702	1,268 1,45 671	1.04 1.03 1.03 1.05	539 1,256 146 686	496 1,132 136 624	1.09 1.11 1.07 1.10	127 309 24 136	112 282 19 119	1.13 1.10 1.26 1.14	369 853 113 491	358 778 109 469	1.03 1.10 1.04 1.05	26 27 28 29
5,608 320 17,364 3,112	5,379 307 16,133 3,046	1.04 1.04 1.08 1.02	5,490 300 17,021 2,964	4,984 268 15,114 2,612	1.10 1.12 1.13 1.13	1,014 56 2,684 787	881 47 2,162 724	1.15 1.19 1.24 1.09	4,137 218 13,252 1,963	3,819 206 12,260 1,733	1.08 1.06 1.08 1.13	30 31 32 33
525 8,618 1,757 1,490	515 8,331 1,727 1,409	1.02 1.03 1.02 1.06	510 8,400 1,685 1,458	475 7,584 1,558 1,278	1.07 1.11 1.08 1.14	125 1,944 422 306	114 1,760 408 265	1.10 1.10 1.03 1.15	345 5,741 1,128 1,026	330 5,306 1,050 927	1.05 1.08 1.07 1.11	
11,962 779 1,772 586	11,448 736 1,758 580	1.04 1.06 1.01 1.01	11,567 751 1,693 568	10,242 653 1,493 528	1.13 1.15 1.13 1.08	2,050 147 477 132	1,828 116 454 130	1.12 1.27 1.05 1.02	8,694 553 1,072 394	7,857 505 941 366	1.11 1.10 1.14 1.08	38 39 40 41
2,716 5,369 471 466	2,653 5,342 462 450	1.02 1.01 1.02 1.04	2,591 5,131 458 461	2,367 4,779 415 415	1.09 1.07 1.10 1.11	704 1,164 84 92	668 1,130 84 86	1.05 1.03 1.00 1.07	1,718 3,573 345 320	1,581 3,392 316 304	1.09 1.05 1.09 1.05	42 43 44 45
3,021 2,394 1,587 3,741 208	2,934 2,252 1,557 3,554 195	1.03 1.06 1.02 1.05 1.07	2,873 2,338 1,514 3,637 202	2,521 2,076 1,380 3,270 171	1.14 1.13 1.10 1.11 1.18	669 548 340 639 45	602 485 316 564 43	1.11 1.13 1.08 1.13 1.05	1,976 1,600 1,074 2,706 145	1,779 1,465 998 2,511 119	1.11 1.09 1.08 1.08	46 47 48 49 50

TABLE 4.—COMPARISON OF CAUSE-OF-DEATH ASSIGNMENTS FOR SPECIFIED CAUSES BY THE SIXTH AND FIFTH REVISIONS OF THE INTER-UNITED STATES AND

(By place of occurrence. Exclusive of fetal deaths and of deaths among armed forces overseas. Comparability ratios are puted where the greater

<u></u>	Sixth Revision Fifth Revision Revision Sixth Revi													
		OF HE	ART AND GE	NERAL	NEPHRITI	S AND OTHE		INFLUEN EXC. PNE	ZA AND PNE UMONIA OF	umonta, newborn ²				
	AREA .			sional compara- bility			sional compara- bility			Provi- sional compara- bility ratio				
1	UNITED STATES	8,815	5,810	1.52	4,990	14,102	0.35	4,670	5,249	0.89				
2 3 4 5	Arizona Arkansas	23 78	15 51	1.53 1.53	22 66	50 158	0.44 0.42	25 77	28 75	0.88 0.89 1.03 0.84				
6 7 8 9	Connecticut Delaware	130 22	80 17	1.63 1.29	40 21	136 54	0.29 0.39	43 12	47 14	1.13 0.91 * 0.87				
10 11 12 13	Georgia Idaho Illinois									0.93 0.86 * 0.94				
14 15 16 17	Indiana Iowa Kansas Kentucky	325 195 163 179	254 138 93 130	1.28 1.41 1.75 1.38	146 89 73 119	549 279 220 319	0.27 0.32 0.33 0.37	128 68 64 128	132 76 77 144	0.97 0.89 0.83 0.89				
18 19 20 21	Louisiana	121 80 110 312	71 50 66 179	1.70 1.60 1.67 1.74	89 45 89 108	237 92 304 349	0.38 0.49 0.29 0.31	98 32 -63 136	112 33 71 172	0.88 0.97 0.89 0.79				
22 23 24 25	Michigan Minnesota Mississippi Missouri	335 236 90 240	231 161 68 161	1.45 1.47 1.32 1.49	180 57 143 208	457 188 297 505	0.39 0.30 0.48 0.41	142 77 97 163	175 100 105 192	0.81 0.77 0.92 0.85				
26 27 28 29	Montana	36 73 4 56	22 59 5 30	1.64 1.24 * 1.87	23 50 3 16	46 136 9 47	0.50 0.37 * 0.34	20 27 2 17	23 35 2 21	0.87 0.77 * 0.81				
30 31 32 33	New Jersey New Mexico New York North Carolina	294 22 915 164	244 12 546 115	1.20 1.83 1.68 1.43	118 20 343 148	395 39 1,019 434	0.30 0.51 0.34 0.34	105 34 375 122	116 38 435 123	0.91 0.89 0.86 0.99				
34 35 36 37	North DakotaOhioOklahomaOregon	31 585 106 105	. 411 82 69	1.29 1.42 1.29 1.52	15 218 72 32	40 747 169 131	0.38 0.29 0.43 0.24	18 25 <u>+</u> 78 37	22 289 80 53	0.82 0.87 0.98 0.70				
38 39 40 41	Pennsylvania	692 42 113 36	449 22 78 24	1.54 1.91 1.45 1.50	395 28 79 18	1,206 83 265 52	0.33 0.34 0.30 0.35	279 18 73 27	309 20 85 26	0.90 0.90 0.86 1.04				
42 43 44 45	Tennessee Texas Utah Vermont	137 309 19 45	89 203 11 21	1.54 1.52 * 2.14	125 238 13 5	286 563 47 35	0.44 0.42 0.28 0.14	158 263 17 14	164 305 11 13	0.96 0.86 * *				
46 47 48 49 50	Virginia	179 153 80 247 10	111 100 52 151 8	1.61 1.53 1.54 1.64	148 56 73 104 6	413 176 177 284 24	0.36 0.32 0.41 0.37 0.25	120 67 81 148 13	124 92 77 155 15	0.97 0.73 1.05 0.95				

See footnotes at end of table.

NATIONAL LISTS, FOR A 10-PERCENT SAMPLE OF DEATH CERTIFICATES FILED IN 1949 AND 1950 IN STATE VITAL STATISTICS OFFICES: EACH STATE—Continued

the ratio of deaths classified by Sixth Revision to deaths classified by Fifth Revision. The ratios have not been comfrequency is less than 20)

CIRR	HOSIS OF I	LIVER	CONGENI	TAL MALFOR	MATIONS		IN DISEASE RLY INFANC			S, SENILII FINED COND		
Si xt h Revision	Fifth Revision	Provi- sional compara- bility ratio	Sixth Revision	Fifth Revision	Provi- sional compara- bility ratio	Sixth Revision	Fifth Revision	Provi- sional compara- bility ratio	Sixth Revision	Fifth Revision	Provi- sional compara- bility ratio	
2,818	3,448	0.82	3,650	3,743	0.98	12,053	11,430	1.05	5,641	5,674	0.99	1
30 13 20 340	37 16 24 421	0.81 * 0.83 0.81	73 20 32 245	69 18 31 249	1.06 1.11 1.03 0.98	292 98 129 797	269 92 118 769	1.09 1.07 1.09 1.04	339 51 119 125	337 51 123 136	1.01 1.00 0.97 0.92	2 3 4 5
13 53 7 27	19 57 6 30	0.93 * 0.90	44 55 11 30	41 51 11 29	1.07 1.08 * 1.03	135 127 32 85	130 -124 32 81	1.04 1.02 1.00 1.05	12 22 7 7	17 23 7 5	0.96 * *	6 7 8 9
44 40 4 212	59 50 5 286	0.75 0.80 * 0.74	61 66 12 203	70 75 16 215	0.87 0.88 * 0.94	218 349 56 601	211 318 54 565	1.03 1.10 1.04 1.06	194 175 24 182	191 172 24 189	1.02 1.02 1.00 0.96	10 11 12 13
52 25 15 32	67 28 30 37	0.78 0.89 0.50 0.86	102 69 58 84	11 <u>4</u> 70 57 91	0.89 0.99 1.02 0.92	303 215 128 259	290 203 121 240	1.04 1.06 1.06 1.08	54 51 37 101	54 64 40 99	1.00 0.80 0.93 1.02	14 15 16 17
39 14 39 119	46 14 44 137	0.85 * 0.89 0.87	79 22 76 98	83 24 77 101	0.95 0.92 0.99 0.97	70 170 238	297 68 167 226	1.07 1.03 1.02 1.05	94 20 31: 34	101 17 32 31	0.93 1.18 0.97 1.10	18 19 20 21
111 28 11 83	149 36 14 104	0.74 0.78 * 0.80	167 89 4 1 95	180 95 45 97	0.93 0.94 0.91 0.98	526 217 207 326	495 209 189 310	1.08 1.04 1.10 1.05	153 58 575 135	152 56 578 144	1.01 1.04 0.99 0.94	22 23 24 25
11 23 4 9	14 28 6 12	* 0.82 * *	20 32 1 22	22 31 1 19	0.91 1.03 * 1.16	47 103 15 55	45 100 15 55	1.04 1.03 * 1.00	45 44 9 9	49 46 9 8	0.92 0.96 * *	26 27 28 29
119 6 425 33	135 6 523 43	0.88 * 0.81 0.77	82 22 348 105	82 25 353 106	1.00 0.88 0.99 0.99	310 86 966 400	300 81 925 370	1.03 1.06 1.04 1.08	24 136 196 205	31 136 194 196	0.77 1.00 1.01 1.05	30 31 32 33
4 177 23 18	7 208 27 23	* 0.85 0.85 0.78	19 217 37 30	19 212 38 27	* 1.02 0.97 1.11	57 622 183 107	56 599 175 106	1.02 1.04 1.05 1.01	33 252 134 47	29 248 140 52	1.14 1.02 0.96 0.90	34 35 36 37
220 34 12 2	259 38 15 4	0.85 0.89 *	228 26 36 23	232 26 32 22	0.98 1.00 1.13 1.05	759 67 218 58	734 62 210 55	1.03 1.08 1.04 1.05	532 2 136 22	527 2 135 23	1.01 * 1.01 0.96	38 39 40 41
44 99 5 9	51 104 5 11	0.86 0.95 *	72 200 26 15	87 196 25 13	0.83 1.02 1.04 *	319 848 60 35	296 783 57 34	1.08 1.08 1.05 1.03	390 411 42 10	396 411 42 9	0.98 1.00 1.00	42 43 44 45
32 31 29 74 4	39 38 42 89 5	0.82 0.82 0.69 0.83	83 58 63 50 3	86 65 60 51 4	0.97 0.89 1.05 0.98	323 180 225 72 41	317 167 207 64 39	1.02 1.08 1.09 1.13 1.05	117 63 125 51 6	110 65 123 44 6	1.06 0.97 1.02 1.16	46 47 48 49 50

TABLE 4.—COMPARISON OF CAUSE-OF-DEATH ASSIGNMENTS FOR SPECIFIED CAUSES BY THE SIXTH AND FIFTH REVISIONS OF THE INTERNATIONAL LISTS, FOR A 10-PERCENT SAMPLE OF DEATH CERTIFICATES FILED IN 1949 AND 1950 IN STATE VITAL STATISTICS OFFICES: UNITED STATES AND EACH STATE—Continued

(By place of occurrence. Exclusive of fetal deaths and of deaths among armed forces overseas. Comparability ratios are the ratio of deaths classified by Sixth Revision to deaths classified by Fifth Revision. The ratios have not been computed where the greater frequency is less than 20)

	MOTOR-VEHICLE ACCIDENTS			ALL OTHER ACCIDENTS		
AREA	Sixth Revision	Fifth Revision	Provi- sional compara- bility ratio	Sixth Revision	Fifth Revision	Provisional comparability ratio
UNITED STATES	6,074	6,077	1.00	11,437	12,348	0.93
Alabama	149 64 69 581 73 9	149 64 69 581 74 9	1.00 1.00 1.00 0.99	230 87 143 643 113 50 28	240 90 147 745 134 57 34	0.96 0.97 0.97 0.86 0.84 0.88
District of Columbia Florida Georgia Idaho Illinois	22 147 134 45 299	22 147 135 44 299	1.00 0.99 1.02 1.00	71 242 271 47 593	76 243 277 52 661	0.93 1.00 0.98 0.90 0.90
Indiana	206 121 91 154 93	208 121 91 154 92	0.99 1.00 1.00 1.00	333 201 193 275 224	359 233 208 290 225 86	0.93 0.86 0.93 0.95 1.00 0.83
Maine	32 85 94 300 103	32 88 95 301 106	1.00 0.97 0.99 1.00 0.97	71 150 381 435 240	167 400 482 261	0.90 0.95 0.90 0.92
Mississippi	95 185 41 53 21	95 184 41 52 21	1.00 · 1.01 1.00 1.02 1.00	162 371 84 133 22 55	166 393 82 141 22 60	0.98 0.94 1.02 0.94 1.00 0.92
New Jersey New Mexico New York North Carolina North Dakota	85 67 388 210	84 66 392 207 27	1.01 1.02 0.99 1.01	240 63 1,136 279	286 67 1,262 304 61	0.84 0.94 0.90 0.92 0.93
OhioOklahoma	329 90 93 290	332 90 91 288	0.99 1.00 1.02	584 213 142 753	621 215 154 797	0.94 0.99 0.92 0.94
Rhode Island	14 98 37 158	14 98 36 157	1.00 1.03 1.01	68 131 55 235	75 129 58 251	0.91 1.02 0.95 0.94
Texas Utah Vermont Virginia	418 39 16 154	416 39 16 155	1.00 1.00 *	638 49 25 268	647 50 34 281	0.99. 0.98 0.74 0.95
Washington	97 7 <u>4</u> 65 28	96 74 68 29	1.01 1.00 0.96 0.97	259 208 147 39	272 215 199 39	0.95 0.97 0.74 1.00

¹See footnote 2, table 1.

²Frequencies are from the 1950 sample only. Data for 1949 were not used because changes in coding rules were made during the time the sample was being processed.

NOTE.—See table 1 for comparable category numbers for causes of death, Sixth and Fifth Revisions of the International Lists.