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VITAL and HEALTH STATISTICS
DATA EVALUATION AND METHODS RESEARCH

**comparability of
Marital Status, Race, Nativity,
and Country of Origin
on the Death Certificate
and Matching Census Record**

United States - May-August 1960

Statements of marital status, race, nativity, and country of origin on the death certificate were compared with corresponding statements on the matching census record for color, sex, and age groups. Based on a sample of death certificates for deaths occurring in the United States during May-August 1960 matched with 1960 census records.

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THIS REPORT compares the statements of marital status, race, nativity, and country of origin on the death certificate with those on the matching census records. Differences in statements are discussed in terms of their effect on death rates, which are based on death certificate and census information. A sample of death certificates for deaths which occurred in the United States during May-August 1960 was selected and matched with the 1960 census records to provide the data for this study.

For many of the variables studied agreement was high, and little or no changes in the death rates were indicated. These include death rates for the married; for most of the single and widowed; for the white, Negro, and Japanese; for the native-born; and for over half of the countries of origin tabulated.

Large discrepancies which would substantially affect the death rates were found for some of the variables. These include death rates for the divorced and young widowed; for the Indians, Filipinos, and "all other races;" for the foreign-born; and for persons born in the United Kingdom and Ireland (Eire) and the Eastern European countries.

SYMBOLS

Data not available-----	---
Category not applicable-----	...
Quantity zero-----	-
Quantity more than 0 but less than 0.05----	0.0
Figure does not meet standards of reliability or precision-----	*

COMPARABILITY OF MARITAL STATUS, RACE, NATIVITY, AND COUNTRY OF ORIGIN ON THE DEATH CERTIFICATE AND MATCHING CENSUS RECORD

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INTRODUCTION

This is one of three reports dealing with the comparability of selected items on the death certificate and the matching 1960 census record. The items selected for comparison are residence, age, marital status, race, nativity, and country of origin. Residence and age have been discussed in two separate publications,^{1,2} and the remaining four items are the subjects of the present report. All these data are an outgrowth of the study Social and Economic Differentials in Mortality, United States, 1960, which has been described in several articles.^{3,5}

Death certificates were matched with census records to provide information about social and economic characteristics of the decedent that were not recorded on the death records. Matching records also provided comparisons of responses to the same questions on the census record and the death certificate. Approximately 340,000 death certificates were selected from about 535,000 for deaths that occurred in the United States during the 4-month period May-August 1960. Certificates were selected for all nonwhite decedents as well as for all white decedents under age 65, for one-half of the white decedents 65-74 years old, and for one-fifth of the white decedents 75 years and older. Numbers presented here have been inflated by the reciprocal of these sampling fractions to represent the total deaths during the 4-month period. After the death certificates were selected,

1960 census files were manually searched for matching census records. If the decedent was found in the 100-percent census enumeration (stage I) and it was indicated there that a 25-percent sample census record (stage II) existed for him, the stage II files were also searched.

About 23 percent of the total sampled death certificates were not matched with the 1960 stage I census records. Four percent of the death certificates matched with stage I records were not matched with stage II records. The error introduced by sampling white decedents aged 65 and over was probably inconsequential compared with the potential bias introduced by using only matched records.

Death certificates matched with stage I census records provided results for marital status and race. Death records matched with stage II census records provided results for nativity and country of origin. For this study the stage I census records were manually coded, and age was converted from date of birth to age at time of death.

A number of records were excluded from the stage I comparisons. All records for decedents aged 100 years and over were omitted because a large proportion of the ages over 100 appeared to be coding errors. In addition, records were excluded which did not contain responses to color and/or sex in the stage I census. Finally,

records were excluded from the analysis whenever there was no response on either the death certificate or the census record to the variable being compared. For example, nonresponses to marital status were omitted from the marital status comparisons.

Stage II data were handled by the usual census procedures, where schedules were processed by FOSDIC (Film Optical Sensing Device for Input to Computer) and where nonresponses to color and/or sex were assigned responses by an allocation procedure. The stage II study group refers to sampled decedents whose death certificates were matched with the 25-percent sample census records whose ages were reported in the same 10-year age interval on the

death certificate and on the census record. Age agreement was introduced primarily to eliminate confounding age errors with errors in nativity and country of origin. Also it was expected that discrepancies would be minimized under the assumption that agreement in reporting other information would be higher for those individuals whose ages were in agreement than for those whose ages were not in agreement in 10-year intervals. Moreover, limiting the group in this way increased the likelihood that the two records compared were in fact for the same person. A more detailed description of the qualifications of the data is contained in another report.¹

MEASURING COMPARABILITY

Lack of correspondence between information on the census record and on the death certificate reflects the various stages at which the records could differ as well as response error. These differences include the nature of the record; the characteristics of the respondent; the care taken by the interviewer; the phrasing of the question; and the coding, editing, and processing of the responses. Since stage I census records and death certificates were manually coded and were not edited, they were probably subject to the same levels of coding and card punching errors. Differences in information could have been the result of the manner in which responses were elicited. A large proportion of the 1960 census records were filled out by the subject himself or his family (i.e., self-enumerated). About 72 percent of the population in metropolitan areas were self-enumerated. Personal data on the death certificate were usually recorded by the funeral director or the medicolegal officer from information provided by relatives of the deceased.

Stage II census data differed further from death certificate data because they were mechanically processed and edited for errors, non-response, and internal inconsistencies. The allocation procedures for assigning information on the census record where no-response was given were designed to produce unbiased group statistics. The assigned response may be inappro-

priate for particular individuals without distorting the average results. When census records with assigned responses were compared with given responses on the death certificates, inconsistencies might be expected. Except for the race variable, nonresponses on the death certificate were left as unknown.

Two measures were selected to evaluate the correspondence in information between records, coinciding with the two major purposes of the report. One objective was to ascertain the extent to which the same response was found for an individual on both records. To this end, percent agreement was used which had as its numerator the number of identical responses to an item on the death certificate and census record and as its denominator the total number of responses to that item on the census record.

The other major objective was to determine the effect of the comparison results on published death rates, which are formed by using death certificate information in the numerator and census information in the denominator. One approach to this problem was to examine the total number of responses to an item on both records, ignoring the question of whether or not the same individual was represented in the two totals. For this purpose the net difference rate was used which had as its numerator the difference between the two totals in a given category

and as its denominator the total in that category on one of the records. This rate is then an estimate of the percent change between the usual death rate and a death rate that would have resulted if the information on one of the records was used in both the numerator and the denominator. (For a more complete discussion of the measures used in this study, see reference 1.) In this report, the census record totals were used as the denominator of the percent agreement and of the net difference rate. This was not done because census information was considered superior but because the results of this study came from a sample of death certificates matched with census records. The effect of the comparison on death rates may be determined by asking what would happen to the rate if the census information found for the sample of decedents was used for all decedents. Or, it may be determined by asking what would happen to the rate if the death certificate information found for sampled decedents was used for the total population. While both questions are meaningful, the former may be

more justifiable since it involves an inference from the sample of decedents to the total number of deaths rather than to the total living population. Either record could have been used to provide the denominator of the percent agreement where no generalizations were sought, but the census record was selected merely for the sake of consistency. Thus both measures estimate the similarities or differences between the records relative to the census information. It should be mentioned here that although the potential impact of the comparisons on the death rates are discussed in this report, no adjustments were made in the rates. Corrected rates for age¹ and the four variables dealt with in this report (marital status, race, nativity, and country of origin)⁶ have been published elsewhere.

The report is divided into three sections: marital status, race, and nativity and country of origin. Each item is dealt with separately, and the qualifications of the data specific to the item are contained in the explanatory notes at the end of each section.

MARITAL STATUS

Marital status, like age, sex, and color, is an important demographic variable implying on the average certain environmental characteristics of an individual. Many studies in mortality have indicated a close relationship between risk of death and marital status. For example, statements have been made such as, "Get married and live longer."⁷ and "Once you are married, hold on to your wife."⁸ For many years, mortality for married persons has been lower at practically every age than for single, widowed, or divorced persons.

It may be that errors existing in the data on marital status are responsible for this phenomenon. For example, some marital groups may be underenumerated in the census or on the death certificate or may be incorrectly reported on one or both records. The data in this study compare responses to the item on marital status on both records. While the results cannot provide estimates of underenumeration, they can be used to evaluate correspondence in the data. The amount of correspondence would suggest the extent to

which observed mortality patterns by marital status may be reflections of errors in the records.

RESULTS

Percent Agreement

The amount of agreement between the death certificate and the census record varied for each marital group. Of the four groups shown in table A, percent agreement between records was highest for married persons and lowest for the divorced in nearly every age group. The consistently high level of agreement among married persons was not surprising since there were more persons in this group than in any of the others. Also it was the one group for which one or the other spouse was available to respond on either one or both records. Low agreement among the divorced may reflect uncertainties about whether date of filing or date of decree constituted the divorce. For the single and widowed, the level of agreement was closely related to age. Among the younger

decedents (those under 45) agreement was somewhat higher for single persons than for the widowed. For older decedents (those over 65) agreement was higher for the widowed than for the single. These findings coincide with the probabilities of being in a particular marital group.

More younger people are apt to be single than widowed, and, conversely, more older people are likely to be widowed than single.

Results by sex are presented in table 1. Generally, there was slightly higher agreement among married men than among married women

Table A. Percent agreement on marital status and age between the death certificate and matching census record, by color, age, and marital status: United States, May-August 1960

Age and marital status	White			Nonwhite		
	Marital status		Age	Marital status		Age
	Total	Equal ages ¹		Total	Equal ages ¹	
<u>15-99 years</u>						
Total-----	94.8	95.2	91.9	87.8	88.7	73.7
Single-----	90.1	91.0	90.3	74.8	78.4	79.8
Married-----	96.5	96.9	93.3	91.4	92.3	76.9
Widowed-----	95.0	95.3	90.1	88.7	88.9	65.7
Divorced-----	72.4	73.5	90.8	54.5	57.6	80.0
<u>15-44 years</u>						
Total-----	95.2	96.5	91.7	87.4	88.9	83.5
Single-----	94.5	96.3	92.8	87.7	90.4	86.8
Married-----	96.8	97.7	92.1	90.3	91.3	83.1
Widowed-----	77.4	75.0	73.1	66.8	61.2	69.1
Divorced-----	80.5	83.4	86.1	61.7	65.5	83.0
<u>45-64 years</u>						
Total-----	95.2	95.9	92.5	85.8	87.0	80.4
Single-----	89.1	90.3	88.8	66.5	68.4	77.7
Married-----	97.6	98.0	94.0	91.6	92.5	82.4
Widowed-----	89.0	89.6	84.4	80.6	81.2	74.0
Divorced-----	79.8	81.1	91.6	57.9	59.7	84.5
<u>65-99 years</u>						
Total-----	94.5	94.8	91.7	89.2	90.0	65.9
Single-----	89.0	89.4	90.2	63.0	66.3	70.9
Married-----	95.8	96.0	93.0	91.7	92.6	68.0
Widowed-----	95.6	95.9	90.7	91.7	92.3	63.3
Divorced-----	63.5	64.1	91.3	44.1	47.3	70.6

¹Includes only those decedents with age reported in same 10-year interval on the death certificate and matching census record.

and considerably more agreement among widowed women than among widowed men. The largest differences were for widowed decedents under age 65, corresponding perhaps to the fact that young men are less likely than young women to be widowed. For decedents over age 65 the differences in agreement between widowed males and widowed females were much smaller, probably reflecting the increased likelihood for persons of both sexes at older ages to be widowed. For the divorced agreement was higher for males than for females. There were other differences between males and females, but the patterns were less easily determined. For all marital groups combined, percent agreement was about the same for both males and females.

Agreement was higher for white decedents than for nonwhite in each marital group shown in table A. Color differences were smallest among married persons and older widowed persons where correspondence in information for the total group was the highest. The largest color differences were found among the divorced and older single persons where correspondence in information for the total group was the lowest. Agreement declined with increasing age for single persons in both color groups but much more so for nonwhite decedents. For ages 15-44 years agreement was 95 percent for white single decedents compared with 88 percent for the nonwhite. Agreement declined to 89 percent for white and 63 percent for nonwhite single persons aged 65-99 years. Apparently, information can be reliably obtained for the married and the older widowed for both white and nonwhite persons. On the other hand, data for the single and divorced contained substantial discrepancies which were even larger for nonwhite than for white persons.

Some of the discrepancies in information on marital status may reflect changes in marital status between the date of the census enumeration and date of death. Rough estimates were made of the proportion of disagreements which could have resulted from changes in marital status using rates for marriage, remarriage, divorce, and death. The estimates suggest that for the most part probably not more than 20 percent of the discrepancies could have resulted from changes in marital status.

Persons under 45 enumerated as single, widowed, and divorced were most often listed as married on the death certificate when the two records did not agree. Estimates of marriage rates indicate that all the single people may have married; and about 75 percent of the divorced and less than one-third of the widowed may have remarried. The chance of changing marital status, of even becoming widowed, after age 45 is very small in a short time interval. When the proportion of persons who could have changed marital status is eliminated from the discrepancies observed, 80 percent of the disagreements remain, and these are probably the result of an error in information on one of the records. The impact of these disagreements on the death rate will be discussed in the section on net difference rates.

Age and Marital Status

Data comparing responses on marital status were tabulated separately for individuals whose stated ages were in the same 10-year age interval ("equal ages") on both records and separately for those whose ages were not in the same 10-year interval ("unequal ages"). Agreement on marital status for both color groups was almost always slightly higher for those with "equal ages" than for the total group, regardless of age agreement. There is a chance that some of the records which disagreed both on marital status and on age may be mismatches that would artificially inflate the reporting differences seen in the total group. For the majority of records, however, higher agreement on marital status for those with age agreement than for the total group might be expected under the assumption that records for which one item was consistently reported would be more likely to have other items consistently reported.

From another viewpoint, however, the assumption was not completely borne out by the results. Table A shows agreement on age in 10-year intervals regardless of agreement on marital status, on marital status for the total group regardless of age agreement, and on marital status for those with "equal ages." High agreement on marital status among the married and low agreement among the divorced might have suggested that age agreement would be higher for the married

than for the divorced, following the same pattern described above of consistent reporting from item to item. However, despite much more agreement on marital status among married persons than among divorced, age agreement for the white group was only slightly higher for the married than for the divorced. And although agreement on marital status among the nonwhite married group was nearly twice as great as that among the divorced, age agreement was usually higher for the divorced than for the married. A tentative conclusion from these results would be that for those records with age agreement there is a good chance that they will agree also on marital status. For those with agreement on marital status,

however, no inference can be made about whether they will agree on age. The explanation for this may be that marital status is an inherently easier piece of information to know about oneself or a relative than age.

Net Difference Rates

Along with the fairly high agreements for most marital groups, the net difference rates were small. The largest net difference rates were for the divorced in each age group and for the widowed under age 45. Table B shows the results for the total study group and for those whose ages were in the same 10-year interval on both records.

Table B. Net difference rates for marital status between the death certificate and matching census record, by color and age: United States, May-August 1960

Age and marital status	White		Nonwhite	
	Total	Equal ages ¹	Total	Equal ages ¹
<u>15-99 years</u>				
Net difference rates				
Single-----	-2.7	-2.9	-3.0	-2.9
Married-----	-1.6	-1.4	-2.7	-2.4
Widowed-----	2.4	2.3	3.4	3.5
Divorced-----	16.1	15.5	22.1	20.5
<u>15-44 years</u>				
Single-----	-1.8	-1.1	0.7	1.5
Married-----	-1.3	-0.7	-4.1	-3.5
Widowed-----	45.4	10.5	26.8	13.7
Divorced-----	14.5	16.1	31.6	34.5
<u>45-64 years</u>				
Single-----	-2.6	-2.8	-2.7	-3.5
Married-----	-1.2	-0.9	-2.8	-2.4
Widowed-----	5.4	4.0	6.2	6.1
Divorced-----	14.3	13.9	18.7	17.3
<u>65-99 years</u>				
Single-----	-3.1	-3.7	-9.0	-10.7
Married-----	-2.0	-1.9	-2.0	-1.8
Widowed-----	2.0	2.2	1.9	2.3
Divorced-----	18.1	16.9	21.9	16.7

¹Includes only those decedents with age reported in same 10-year interval on death certificate and matching census record.

The two series of net difference rates were generally similar. For the young widowed, however, the difference was extreme. For example, among white widowed decedents 15-44 years, the net difference rate was 45 percent for the total group compared with 11 percent for the group with "equal ages."

In both series of rates (total and "equal ages") the net differences for the single and married were generally small and negative. Rates for the divorced and for the young widowed were large and positive; those for the older widowed were small and positive. Observed trends in death rates have consistently shown large differentials between married persons and those in the other marital groups. The married at most ages, but particularly at younger ages, have had much lower mortality than the other groups. If the net difference rates of either series are applied to the death rates, the observed mortality differentials would be diminished. "Corrected" death rates for the married and single would be higher while those for the widowed and divorced would be lower than the observed death rates. The changes indicated for the single are small compared with those for the divorced and young widowed. Therefore, "corrected" rates may result in some shifting of relative mortality risks among the single, widowed, and divorced. The data suggest that the observed low mortality for married persons is probably not a result of inconsistencies in information between the records. However, the amount by which the mortality risk is lower for the married than for the other groups may be influenced by the extent of disagreements in data for the other groups.

If marital status is the only variable to be corrected, then the net difference rates for the total group would be the appropriate correction factor for discrepancies in marital status for age-specific and marital-specific death rates. If, however, both age and marital status are to be corrected, it is suggested that net difference rates for age (published elsewhere¹) be applied first and net difference rates for marital status for the "equal age" group be applied second. In other words, once age errors are eliminated, the next step is to eliminate only errors in marital status.

Net difference rates for marital status for the total group would contain errors in both age and marital status.

COMPARISON WITH THREE OTHER STUDIES

1961 British Study

As part of the evaluation of the 1961 Census of England and Wales⁹ all death-registration records for persons under 75 years of age who died during May and June 1961 were selected and matched with census records in order to compare responses to certain items on the death-registration record and the census form. Table C shows that, except for the divorced, percent agreement for each marital group was quite high (higher than that found in the present study) for decedents under age 75. According to the British report, the largest discrepancy was in the number (not the proportion) of persons reported as married at the time of the census but widowed at death. Since a similar tendency was noted in the present study, it seems worthwhile to discuss the British findings. Records were checked for 118 men aged 65-74 years who were reported as married at the time of the census but widowed at death. Of these, 28 percent had been enumerated in institutions. The following quotations are taken from the British report.⁹ "There is likely to be some element of unreliability here in the census record to the extent that elderly sick people cannot always be very helpful to those responsible for the completion of census schedules in institutions." Another 28 percent did not have a wife recorded on the census schedule. "This group may represent a tendency noted elsewhere for widowed people to regard themselves as married despite the death of their spouse.... The term widowed may have been used at death registration if the couple were in fact separated." For 37 percent a wife was recorded on the census. "While it is possible that some of this group were not married to the woman returned as their wife, on the whole, the more likely explanation here is that the information given at death registration was in error." The remaining 7 percent may have become widowed

Table C. Percent agreement and net difference rates for marital status: 1961 British Study and 1960 United States Census-Death Certificate Matched Record Study

Marital status	1961 British Study ¹		1960 U.S. Census-Death Certificate Matched Record Study ²			
	Percent agreement	Net difference rate	Total		White	
			Percent agreement	Net difference rate	Percent agreement	Net difference rate
Total, 15-74 years-	97.9	...	94.1	...	95.0	...
Single-----	95.2	-2.7	89.2	-2.1	90.7	-2.2
Married-----	98.5	-0.7	96.7	-1.4	97.2	-1.3
Widowed-----	97.9	3.9	91.1	3.7	92.2	3.5
Divorced-----	80.0	17.5	74.6	16.8	76.9	16.0

¹Great Britain General Register Office, 1961 Census of England and Wales, General Report, H.M. Stationery Office, London (personal communication).

²Refers to the total study group regardless of age agreement.

during the time interval between the census and their death. This kind of analysis would appear to be a fruitful approach in determining which record is in error when discrepancies in information are found.

The similarities in results between the British Study and the present study are remarkable. Although agreement was higher in the British Study, it was usually within a few percentage points of the results in the present study. Agreement among the divorced in both studies was the lowest compared with the other marital groups. The net difference rates were nearly identical in the two studies. Statements of single and married were found more often on the census record, while statements of widowed and divorced were found more often on the death certificate.

1950 Occupation Study

The study "The Comparability of Reports on Occupation From Vital Records and the 1950 Census"¹⁰ was done in the United States in 1950; its major objective was the comparison of occu-

pation statements. Data are available from this study which compare statements of marital status on the death certificate with that on the matching 1950 census record for white male decedents aged 45-64 years. Table D contains the percent agreement and net difference rates for marital status found for the sample in the 1950 Occupation Study and the sample in the present study. For the single, married, and widowed the percent agreement was nearly the same in both studies, but for the divorced the present study had much higher agreement. On the other hand, the net difference rate for the divorced in the 1950 Occupation Study was considerably smaller than in the present study. Possible differences in the sample composition between the two studies and the use of self-enumeration in the 1960 census could have contributed to dissimilarities in results.

Except for the single group, the direction of the net difference rates was the same for both studies. Statements of married were more prevalent on the census records than on the death certificates. Statements of widowed and divorced were more prevalent on the death certificates

Table D. Percent agreement and net difference rates for marital status of white male decedents aged 45-64 years for the United States: 1950 Occupation Study and 1960 Census-Death Certificate Matched Record Study

Marital status	1950 Occupation Study ¹		1960 Census-Death Certificate Matched Record Study	
	Percent agreement	Net difference rate	Percent agreement	Net difference rate
Single-----	87.5	4.0	88.1	-2.3
Married-----	96.5	-2.0	97.9	-1.0
Widowed-----	81.6	8.0	80.8	6.0
Divorced-----	69.2	9.0	81.4	17.1

¹National Office of Vital Statistics: The comparability of reports on occupation from vital records and the 1950 census, by D.L. Kaplan, E. Parkhurst, and P.K. Whelpton, Vital Statistics—Special Reports, Vol. 53, No. 1. Public Health Service, Washington, D.C., June 1961.

than on the census records. Similarity in size and direction of the net difference rates between the studies supports the reliability of the results of each study. These results suggest that the excess mortality observed for the widowed and divorced over the last decade compared with that observed for the married is too high.

1960 Current Population Survey-Census Match Study

The U.S. Bureau of the Census evaluated some of the 1960 census results by matching records with the Current Population Survey (CPS).¹¹ CPS-Census comparisons of marital status data resulted in fairly high agreement in each category except the divorced (table E). In four-fifths of the sex, age, and marital groups, agreement was higher in the CPS-Census Study than in the present study. In terms of the gamut of procedures, from interviewing to tabulating, the census is probably more similar to the CPS than to the death certificate. Correspondence in information between the census and the CPS, therefore, might be expected to be greater than between the census and the death certificate.

Despite CPS-Census procedural similarities, however, large discrepancies in marital status

were observed for the divorced at all ages and for the young widowed under age 45. This is as much the same as what was found in the present study. It was suggested earlier that some of these discrepancies could have resulted from mismatched records or from changes in marital status between the time of the census enumeration and the date of death. The time lag between census and CPS enumeration was less than 1 month; therefore it is unlikely that a substantial portion of the differences in information arose through changes in marital status. It is improbable, moreover, that mismatches occurred to the same extent in both studies or that they would be concentrated in the same marital groups.

Whatever reasons account for the discrepancies, they appear to have been operating in both studies. The CPS-Census results support the findings of the present study. That is, data on marital status can be obtained with a high degree of reliability for most marital groups with the notable exceptions of the young widowed and of the divorced of all ages. In situations where the respondent is different from the person being enumerated, confusion may easily arise about the correct marital status of a subject who lives alone.

Table E. Percent agreement on marital status, by sex and age for the United States, 1960: CPS-Census Match Study and Census-Death Certificate Matched Record Study

Age and marital status	CPS-Census Match Study ¹		Census-Death Certificate Matched Record Study	
	Male	Female	Male	Female
<u>14 years and over</u>				
Total-----	97.8	97.5	94.2	94.1
Single-----	98.1	98.8	87.7	90.6
Married-----	98.8	98.5	96.8	94.3
Widowed-----	87.3	92.9	91.1	95.9
Divorced-----	63.6	82.2	74.6	63.5
<u>14-44 years</u>				
Total-----	98.4	98.1	94.0	93.6
Single-----	98.6	98.7	93.8	92.9
Married-----	98.6	98.6	95.5	95.8
Widowed-----	62.7	82.9	62.7	77.3
Divorced-----	82.9	85.7	76.8	77.9
<u>45-64 years</u>				
Total-----	97.0	96.8	94.4	93.6
Single-----	95.8	98.5	85.9	88.5
Married-----	99.0	98.6	97.4	96.2
Widowed-----	80.0	90.6	78.9	91.1
Divorced-----	52.1	80.0	78.5	74.2
<u>65 years and over</u>				
Total-----	96.9	96.5	94.0	94.2
Single-----	88.9	100.0	85.0	90.8
Married-----	98.7	98.1	96.7	92.4
Widowed-----	92.6	95.3	92.5	96.6
Divorced-----	² 56.1	68.9	69.8	49.6

¹U.S. Bureau of the Census: Evaluation and research program of the U.S. Censuses of Population and Housing 1960: accuracy of data on population characteristics as measured by CPS-Census Match, Series ER60, No. 5, Washington, U.S. Government Printing Office, 1964.

²Based on fewer than 100 CPS records.

SUMMARY AND CONCLUSIONS

Comparison of response results indicated generally high correspondence for the single, married, and widowed but relatively low correspondence for the divorced. No substantial differences in levels of agreement were found between males and females except for the greater agreement among widowed females than among widowed males. In most cases agreement was higher for white decedents than for nonwhite. The largest color differences were observed for the single; the smallest differences were for the married. With increasing age, agreement declined among single persons and increased among widowed persons.

The size of the net difference rates suggests that relatively lower mortality levels observed for married persons compared with other persons are probably accurate. The extent of the differential, however, is probably not as large as observed rates indicate. If the net difference rates from this study were applied to the death rates, "corrected" rates for the single and married would be higher than the observed rates. "Corrected" death rates for the widowed and divorced would be lower than the observed. These changes would narrow the gap in mortality differentials between the married and the other groups and might alter the relative mortality positions of the single, widowed, and divorced.

Other studies comparing responses to marital status between records produced results similar to those of the present study. In all cases, the married, single, and widowed groups contained small discrepancies and the divorced group contained large discrepancies. Although reasons may be advanced to account for the errors, these reasons cannot eliminate the errors. In order to obtain reliable data for the divorced (and for the young widowed group), it may be necessary to modify the question on marital status. Internal checks might be introduced which in conjunction with the main question would provide the basis for tabulating the response. For example, where the subject is the respondent, questions might be inserted requesting the year the divorce was decreed or the year of death of the spouse. If it is worthwhile to collect and tabulate data on marital status, some effort should be made to assure its reliability.

EXPLANATORY NOTES

Definitions

For both the census records and the death certificates, definitions of marital status are the same. Individuals reported as separated or living in common-law marriages are coded as married; individuals never married or whose only marriage was annulled are coded as single. For this study, no allocations were made for individuals whose marital status was not stated on the census record.

Record Losses

Of the original sample of death certificates selected for searching in the 100-percent census enumeration for matching records, about 70 percent were used in the analysis of marital status. The largest single loss was for records not found in the census files—about 20 percent of the selected sample. Further losses came about through nonresponse to the items on marital status, age, sex, and/or color, and because certain age groups were omitted from the analysis. The study group for analysis by marital status included decedents 15-99 years of age with matched records whose sex, color, and marital status were reported on both the census record and the death certificate. Table F shows the percent distribution of total, matched, and unmatched records by marital status on the death certificate. Each marital group, except the married, was overrepresented among the unmatched records.

Age and Marital Status

Two separate tabulations were prepared for marital status: one tabulation was done for records in which the age statement on both the census and the death certificate was within the same 10-year interval, and the second was done for those records in which the age statement was not within the same 10-year interval on the census and the death certificate. The percent distributions of records by marital status for the groups with "equal ages" and with "unequal ages" are shown in table G. There were relatively more widowed and divorced decedents among those with "unequal ages" than among those with "equal ages."

Table F. Percent distribution of total, matched, and unmatched records and percent unmatched, by marital status on the death certificate: United States, May-August 1960

Marital status	Total	Matched	Un- matched	Percent un- matched
Percent distribution				
Total-----	100.0	100.0	100.0	20.2
Single-----	12.9	12.0	16.6	26.0
Married-----	50.0	52.9	38.8	15.7
Widowed-----	32.5	31.5	36.5	22.7
Divorced-----	3.7	3.0	6.3	34.7
Not stated or not valid-----	0.8	0.5	1.8	45.7

Table G. Number and percent distribution of total study group, group with equal ages, and group with unequal ages, by marital status: United States, May-August 1960

Marital status	Total	Equal ages ¹	Unequal ages	Total	Equal ages ¹	Unequal ages
	Number			Percent distribution		
Total-----	395,664	352,345	43,319	100.0	100.0	100.0
Single-----	47,521	42,348	5,173	12.0	12.0	11.9
Married-----	209,348	190,466	18,882	52.9	54.1	43.6
Widowed-----	124,675	107,499	17,176	31.5	30.5	39.7
Divorced-----	12,008	10,405	1,603	3.0	3.0	3.7
Not stated or not valid-----	2,112	1,627	485	0.5	0.5	1.1

¹Includes only those decedents with age reported in the same 10-year interval on the death certificate and matching census record.

RACE

The designation of race on vital and enumeration records is complicated by the lack of objectivity inherent in the characteristic. Unlike age or marital status, for example, race can be defined by a number of criteria which are neither mutually exclusive nor exhaustive. In some cases racial classifications are synonymous with national origins such as Japanese and Chinese. In other cases, legal definitions may exist but are subject to individual interpretation such as those for American Indians. For the most part, the death-registration system and the Bureau of the Census have relied on what is commonly accepted by the general public as the basis for recording race. Therefore, responses to the race item will not reflect legal definitions, definitions of biological stock, or cultural heritage. Probably the most practical classification of race would be based on the individual's assignment of himself or his family. Self-identification should result in a closer representation of reality than would result from an outsider's opinion of the appropriate designation. This would be particularly true for racial groups which are difficult to identify on the basis of observation alone. Such individuals would include those of mixed racial ancestry and those from areas of the world not frequently enough represented in an area to be familiar to the public.

Procedural differences between the records would have an impact on the extent to which the race responses reflected self-identification. Instructions for completing the personal information on the death certificate, which in 1960 existed mostly verbally (except in about one-third of the States in which manuals were available) indicated that the decedent's race be recorded on the basis of what the informant (usually the family of the deceased) reported. However, the variation in actual practice from State to State and among areas within States may have been great. Under certain circumstances, the procedure might not have been strictly adhered to for a variety of reasons, including local attitudes. If a decedent or his family appeared to be of a particular racial group based on visual inspection, the funeral director may have recorded his observation without questioning the informant. Since the death certificate is a legal document, however, copies are often given to the family to arrange for insurance

and other benefits. This may oblige the person completing the form to ask the race of the family beforehand, averting difficulties later. In some cases the informant's answer may have been ambiguous or have referred to an infrequently mentioned race. Such responses may have been recorded as one of the more frequently occurring groups or recorded as "other."

Some of these problems prevailed on the census record, but a different dimension was introduced. On the majority of census records in 1960, the respondent filled out the form and assigned himself and the members of his household to a racial group. Sometimes when the response was omitted or was not definitive, the judgment of the enumerator based on observation was substituted. The census record, uniform throughout the Nation, provided 10 specific race categories and "etc." or an open-ended category as suggested groups which should have aided those in doubt as to which races constituted separate groups. But in cases where self-enumeration was not used, other factors influenced the recording of data, such as local attitudes, enumerator observation, and the tendency of the enumerator to designate all families within an area in which a particular ethnic group is predominant as members of that group.

Insofar as instructions were followed on both records, the mechanism for eliciting response on race was theoretically closer between the death certificate and the 1960 census record in which self-enumeration was used than was previously the case. On censuses before 1960, race was usually based on the enumerator's observations unless unsolicited information from the respondent during the interview was offered.

RESULTS

Percent Agreement

For most vital statistics purposes, the population is divided into two and sometimes three groups—white and nonwhite; or white, Negro, other nonwhite—rather than into detailed race groups. The reason for these divisions is pragmatic. Since the overwhelming majority of the nonwhite group in the United States is Negro

(92 percent in 1960), whatever differences exist among the races comprising the nonwhite category would contribute negligibly to the total. From this point of view, comparison of color statements on the two records is more important than the comparison of race statements. However, data are available by race and the results will be discussed at some length to show the problems of obtaining such information on official records.

Comparison of Statements on Color

For the total group of decedents in this study, 99.6 percent were in the same color group on both records. Percent agreement was 99.8 percent for the white group and 97.7 percent for the nonwhite (table H). Some of the 2.3 percent of records with nonwhite assignments on the census record but with white assignments on the death certificate probably include those death certificates where race was not reported but was assigned to the white category. The number of such cases was not recorded in 1960 (see "Explanatory Notes" for coding rules). For example, in 1965 when such assignments were discontinued, 2,741 death certificates had no race information—0.15 percent of all

deaths. The effect of allocating all these decedents to the white category can be measured by assuming that the same proportion of nonresponse existed in 1960 and further that all these non-responses should have been nonwhite; then agreement between the census record and death certificate for nonwhites would have been 99.1 percent instead of the 97.7 percent found. There was no parallel situation for missing race information on the census record since these records were omitted from the stage I study group.

When the nonwhite group is divided into Negro and "other nonwhite," the high agreement seen for the nonwhite group is largely a reflection of the high agreement for Negroes. Lack of correspondence in data for "other nonwhite" may be related to the heterogeneous nature of the category. It includes several specific race groups and a residual group. Moreover, the "other nonwhite" group represents a relatively small number of decedents—less than 1 percent of the total study group. The effect of numbers on the size of the percent agreement can be seen when the data are analyzed by geographic region of residence as shown in the table on the following page.

For example, nonwhite decedents were 5 percent of the total study group in the Northeast and 22 percent of the group in the South. Corresponding to this distribution, agreement for the nonwhite group was 96 percent in the Northeast and 99 percent in the South. The lowest agreement for the nonwhite group was in the West (94 percent) even though this region did not contain the lowest proportion of nonwhite to total decedents. Negroes comprised 97 percent or more of the nonwhite group in the other regions, but they comprised only 52 percent of the nonwhite group in the West. The relationship between the number of nonwhite decedents and percent agreement shows up clearly in these results. Agreement among Negroes is lowest in the West, where their proportion of the population is smallest. In contrast, agreement for the "other nonwhite" group is highest in the West, where the proportion is largest.

In areas where there are relatively few persons of certain racial groups, these persons may be included with the predominant racial group. In fact, in the majority of cases where there were discrepancies between race as stated on the census record and as stated on the death certificate, the race on the death certificate was white.

Table H. Percent agreement and net difference rates for race between the death certificate and matching census record: United States, May-August 1960

Race on census record	Percent agreement	Percent white on death certificate	Net difference rate
Total--	99.6	...	...
White----	99.8	...	0.0
Nonwhite--	97.7	2.3	-0.1
Negro-----	98.2	1.8	0.3
Other non-			
white-----	86.9	11.2	-6.8
Indian-----	79.2	16.9	-11.0
Japanese---	97.0	1.2	-1.4
Chinese----	90.3	5.0	-6.8
Filipino---	72.6	19.4	-22.0
All other			
races-----	60.4	29.7	18.9

Race	United States	Region			
		North east	North Central	South	West
<u>Nonwhite</u>					
Percent agreement-----	97.7	95.8	97.0	98.9	94.1
Percent of total-----	9.6	4.9	5.5	21.5	5.2
<u>Negro</u>					
Percent agreement-----	98.2	96.0	97.7	99.1	94.5
Percent of nonwhite-----	94.8	97.0	96.5	99.0	52.2
<u>"Other nonwhite"</u>					
Percent agreement-----	86.9	70.3	73.1	76.4	93.1
Percent of nonwhite-----	5.2	3.0	3.5	1.0	47.8

Comparison of Statements on Race

Results of the detailed race comparisons are shown in table H. (Results by sex and geographic region are given in table 2.) The major discrepancies occurred for persons reported as white on one record and as of a nonwhite race on the other. Only infrequently was a nonwhite race on the census record classified as a different nonwhite race on the death certificate. Lack of correspondence in race statements was greatest among the Indians, Filipinos, and the residual group "all other races." In each of these groups, however, agreement was higher in the West than in the United States total. From this it might be inferred that agreement might have been higher if these groups were represented in each region to the extent that they were in the West.

Consider the problem, for example, of properly identifying a Filipino in terms of the fact that of the 186 deaths of Filipinos (as stated on the census) in this study, 155 had resided in the West. The remaining 31 deaths occurred in the remainder of the United States, making the death of a Filipino in any one area an extremely unlikely event.

Small numbers alone cannot account for the differences in results obtained among the various racial groups. Although the number of Japanese

decedents in the study group was smaller than the number of Indians, percent agreement indicated much more correspondence in the reporting of Japanese than in the reporting of Indians. Probably, specific explanations are needed for each race.

For the American Indian there are several complicating factors. Those living on reservations (many of them in the West) would be easy to classify, but those who have moved to urban areas might be less clearly distinguished. Furthermore, the health and other benefits to which Indians are entitled might have encouraged them to report themselves as Indian on the census. After death, however, there would obviously be no such motivation. Still another difficulty would arise in assigning the appropriate category to individuals of mixed white, Negro, and Indian ancestry.

The problem of identifying Filipinos was mentioned as resulting from the small number of such individuals, but it may also include the factor of mixed racial ancestry.

The low agreement found in the residual category "all other races" could have several explanations: the number of such individuals was very small; they included individuals of mixed racial origin; and some probably belonged to one of the major categories. In connection with the last statement, the Bureau of the Census in its

official publication remarked: "Respondents and enumerators ... sometimes report, for the racial classification, such entries as 'Puerto Rican,' 'Turk,' and 'Germanic,' and others, which should have been included within one of the Census Bureau's broader categories such as 'white,' or 'Negro.'"¹²

A number of reasons make the high agreement among the Japanese and Chinese plausible: proper identification could be facilitated by the distinctive family names of those individuals; some live in fairly well-defined ethnic group areas of a city; and a number of these decedents were probably born in Japan or China which would be recorded on the death certificate under place of birth and would have been used in coding race.

Net Difference Rates

As seen in table H, the net difference rate for each specific nonwhite race except Negroes was negative. Thus, in varying degrees (depending on the racial group), the census records contained more statements of nonwhite than the death certificates. It is possible that much of this excess on the census resulted from the assignment of white on the death certificate in cases of nonreporting. However, it is also possible that self-enumeration in the census yielded more reports of nonwhite races than may have been unrecognized by the funeral director.

Whatever the reasons, the effect of these discrepancies on death rates by race may be pronounced. Observed death rates for the Indians, Chinese, and Filipinos were much lower than death rates would have been if only census information had been used. The net difference rate for "all other races" indicates that the observed mortality figures are too high. When the detailed races were combined into three groups—white, Negro, and "other nonwhite"—only the "other nonwhite" group had a net difference rate large enough to suggest bias in the death rates. Observed death rates for the white and Negro or for the white and nonwhite population appear to be essentially unbiased.

In summary, correspondence between the records in statements of color was very high, and death rates by color are probably unbiased; discrepancies in statements of race were slight for white, Negro, and Japanese decedents but great

for Indians, Filipinos, and "all other races"; each nonwhite group except Negroes and "all other races" was understated on the death certificate relative to the census record, which may have resulted from the tendency to record decedents as white or "other" on the death certificate when the specific race was not known; and death rates for four of the six races tabulated understated the risk of dying that would have resulted if race designations on the census record had been used as numerator and denominator of the death rate.

Comparisons of race were also made for stage II data. These results are not shown because they were very similar to those described above. More agreement in race might have been expected among records with age agreement (stage II) than among records regardless of age agreement (stage I). This was not found, however. In fact, slightly less agreement was found in stage II than in stage I among the "other nonwhite" group. Editing, greater sampling error, and allocating for nonresponses in stage II could have contributed to increasing discrepancies between census and death certificate statements of race. Race comparisons by age were available for stage II data, but the observed levels of correspondence in race did not vary by age.

COMPARISON WITH TWO OTHER STUDIES

1950 Birth Study

Some information on race comparability between a vital record and the census record is available from the study "Matched Record Comparison of Birth Certificate and Census Information,"¹³ which was done as part of the 1950 Birth Registration Test in the United States. The relevant data concern race of the infant as derived from the birth certificate and the matching infant card. The infant cards were filled out by enumerators during the 1950 census for infants born in the month of March of that year.

Table J compares the percent agreement between the Birth Study and the present study for four race categories—white, Negro, Indian, and "other nonwhite." For the total United States, agreement was nearly the same in both studies—high among white and Negro persons and low among Indians. Also, in both studies, agreement

Table J. Percent agreement on race between the vital record and matching census record for the United States and the West Region: 1950 Birth Study and 1960 Census-Death Certificate Matched Record Study

Area and race	1950 Birth Study ¹ (Infants)		1960 Census-Death Certificate Matched Record Study	
	Percent agreement	Percent white on birth certificate	Percent agreement	Percent white on death certificate
<u>United States</u>				
White-----	99.7	...	99.8	...
Negro-----	98.9	1.1	98.2	1.8
Indian-----	67.2	31.5	79.2	16.9
Other nonwhite ² -----	55.9	42.0	90.9	7.7
<u>West Region</u>				
White-----	99.6	...	99.8	...
Negro-----	97.3	2.5	94.5	5.1
Indian-----	88.6	11.2	87.4	11.2
Other nonwhite ² -----	68.6	30.3	94.7	5.1

¹National Vital Statistics Division: Matched record comparison of birth certificate and census information: United States, 1950, Vital Statistics--Special Reports, Vol. 47, No. 12, Public Health Service, Washington, D.C., Mar. 1962.

²Includes Japanese, Chinese, Filipino, and "all other races."

among the Indians was higher in the West Region than in the entire country.

There were two notable differences in the results of the two studies. For the "other nonwhite" group, correspondence was much lower in the Birth Study (56 percent) than in the present study (91 percent). Secondly, agreement for Indians for the total United States in the present study was higher than in the Birth Study. In the West, however, the agreement levels were closer between studies—89 percent in the Birth Study compared with 87 percent in the present study. These two differences may be related to the procedures used to determine race. The problem of identifying off-reservation Indians (more frequent in the non-western parts of the United States) and individuals of "other nonwhite" races has been mentioned in a previous section, where it was suggested that many Indians might not be recognized as such unless they themselves reported their race.

For the 1950 Birth Study, census information on race came entirely from the enumerator's ob-

servation but for the present study, largely from self-enumeration. In both studies, race information on the vital record could have been recorded after questioning the subject's family, on the basis of observation, or on the basis of the medical records of the hospital. Another complicating factor is that the race of the infant was not recorded directly on the birth certificate but was derived from the recorded race of the parents. Procedures for coding mixed parentage as reported on the census record were slightly different from those for coding on the birth certificate. When, for example, there was a mixture of Negro and another nonwhite race, the child was coded as Negro on the birth certificate but according to the race of the father on the infant card. In brief, then, race information on the vital record (resulting from several alternative procedures) might be expected to be somewhat closer to that stated in the 1960 census (resulting primarily from self-enumeration) than to the 1950 census (resulting primarily from enumerator

Table K. Percent agreement and net difference rates for race, by sex for the United States, 1960: CPS-Census Matched Study and Census-Death Certificate Matched Record Study

Sex and race	CPS-Census Study ¹			Census-Death Certificate Matched Record Study		
	Percent agreement	Percent white on census	Net difference rate (CPS as base)	Percent agreement	Percent white on death certificate	Net difference rate (Census as base)
<u>Both sexes</u>						
White-----	99.7	...	-0.2	99.8	...	0.0
Negro-----	95.8	0.8	-2.7	98.2	1.8	0.3
Other nonwhite ² --	89.0	11.0	85.7	86.9	11.2	-6.8
<u>Male</u>						
White-----	99.7	...	-0.2	99.8	...	-0.0
Negro-----	96.1	0.6	-1.9	98.4	1.5	0.8
Other nonwhite ² --	84.8	15.2	64.3	87.2	11.0	-6.9
<u>Female</u>						
White-----	99.7	...	-0.2	99.8	...	0.1
Negro-----	95.6	0.9	-3.4	97.9	2.1	-0.3
Other nonwhite ² --	93.9	6.1	110.5	86.1	11.6	-6.6

¹U.S. Bureau of the Census: Evaluation and research program of the U.S. Censuses of Population and Housing, 1960: accuracy of data on population characteristics as measured by CPS-Census Match, Series ER60, No. 5, Washington, U.S. Government Printing Office, 1964.

²Includes Indian, Japanese, Chinese, Filipino, and "all other races."

observation) for those individuals of mixed ancestry, American Indian origins, or other infrequently represented racial groups.

1960 Current Population Survey-Census Match Study

In the 1960 CPS-Census Match Study¹¹ comparisons were made for three major race categories—white, Negro, and "other nonwhite." The levels of agreement were quite similar between the CPS-Census study and the present study—high among white and Negro persons and relatively low for the "other nonwhite" category (table K). However, the agreement levels did not fully reflect the large discrepancies between census and CPS assignments to the "other nonwhite" category which are indicated in the net difference rates. This rate is referred to as the "Index of net shift

relative to CPS class" in the CPS-Census study and represents the difference between the census and CPS assignments relative to the CPS results. In both studies, there were more assignments to the "other nonwhite" category on the census record than on the matching record. The excess of "other nonwhite" individuals, however, was much greater for the CPS-Census Study (86 percent) than for the death certificate-census comparisons (7 percent).

Census records contained the largest number of individuals of "other nonwhite" races, the death certificate the next highest number, and the CPS the smallest. One basic difference among the sources which might explain this result was the degree to which self-enumeration was used in obtaining race response. While it was widely used on the census records, it was not used in the CPS where (unless there was some doubt) race was

recorded on the basis of the interviewers' observations. It is unknown to what extent enumeration on the part of the family of the decedent was used on the death certificate, but certainly it was included as a possibility for eliciting information more so than in the CPS.

The excess of "other nonwhite" on census records relative to the death certificate was discussed earlier in this report, where it was suggested that this excess resulted from the editing procedures on the death certificate. The discrepancy between the census and the CPS cannot be explained in the same way, but rather seems to be further evidence that individuals of infrequently represented race groups will not be properly identified in an interview unless they themselves are asked to report their race.

The difference in the number of "other nonwhite" individuals between records is unimportant in terms of affecting the results for the total nonwhite group. When Negro and "other nonwhite" were combined, the census records showed an excess of 1 percent of nonwhite persons over the CPS and an excess of 0.1 percent of nonwhite decedents over the death certificate.

SUMMARY AND CONCLUSIONS

The correspondence in color statements between records was nearly perfect, and the discrepancies that did exist would probably have little or no effect on the value of the death rate. There is some likelihood that the percent agreements for the white and nonwhite groups in this study are overstatements of the amount of agreement that would be obtained for all decedents if their census records had been found. Probably color was used in matching census records with death certificates where a similar but not identical spelling of name and/or street address was given. However, it is also possible that those records not matched would have had the same color statements if their census records had been found.

For the detailed race comparisons, the amount of correspondence was considerably lower than the agreement in color. The greatest agreement was for the white group, Negroes, and Japanese; the least was for the Indians, Filipinos, and "all other races." This was true both for the United States as a whole and for the West Region.

Agreement was higher in the West than in the United States for each nonwhite race except Negroes, corresponding to the greater proportion of these individuals in the West than in the total United States.

Lack of correspondence in race statements may be attributed to the combined effects of response variation and of coding and processing differences. Since there is no completely objective criterion for assigning race to an individual, the most accurate designation should come from the individual himself or his family. Theoretically this was the criterion employed on the death certificate and the census record, but operationally various difficulties lie in the way of approaching the ideal. There are reasons which indicate that the future will show improvements in consistency of race statements between the records. One is the further and more widespread use of self-enumeration in the 1970 census. The other relates to measures being taken on the death certificate. The National Center for Health Statistics has issued manuals of instructions for completing the death certificate, indicating explicitly that the race of the deceased is to be entered as stated by the informant and that national origins should be reported for those nonwhite groups other than Negro or American Indian. Furthermore, as of 1968, the race item on the standard death certificate will be "Race: White, Negro, American Indian, etc. (specify)" in contrast with the past when the item was "Race or color." Finally, since 1965, death certificates showing no response to the race item have been assigned to white or nonwhite on the basis of race as stated on the previous certificate processed. This procedure should more closely approximate reality than the past practice of assigning all nonresponses to the white group.

EXPLANATORY NOTES

Definitions

The categories of race for which responses were tabulated were white, Negro, Indian, Japanese, Chinese, Filipino, and "all other races." The table below shows the definitions of race used by the Bureau of the Census and the National Center for Health Statistics in 1960.

Category	Definition of race according to:	
	U.S. Bureau of the Census ¹	National Center for Health Statistics ²
White	Includes Mexicans who are definitely not Indian or of another nonwhite race.	Includes Cajun, Creole, Mexican, Puerto Rican, and all other Caucasian.
Negro	Includes Negroes and those of mixed Negro and white descent, including a mixture of American Indian and Negro unless Indian ancestry predominates.	Includes mixtures of Negro with any other race except Hawaiian and those recorded as native of the United States whose race is given as "mixture."
Indian	Includes full-blood American Indian or a mixture of white and Indian blood (usually at least 1/4 Indian blood). Most of those of mixed white, Negro, and Indian ancestry.	American Indians including Alaska Indians.
Japanese Chinese	No specific instructions.	Includes those recorded as "yellow" classified as Chinese or Japanese on the basis of name. When race cannot be determined by name and birthplace is given as China or Japan, code as such.
Filipino	No specific instructions.	No specific instructions.
Other races	Includes Hawaiians, Eskimos, Aleuts, Koreans, Asian Indians, Malaysians, etc. (25-percent sample schedules were edited for obvious errors. Complete count schedules were inspected only where certain tolerances were exceeded of the number of "all other" race entries in an enumeration district. The 54-percent increase in the number of "other races" for the conterminous United States between 1950 and 1960 probably reflects changes in the editing and enumeration procedures of the census rather than real changes in the size of the population.)	Includes Hawaiians, part-Hawaiians (mixture of Hawaiian and any other race), Eskimos, Aleuts, and other nonwhite. Includes those recorded as "yellow" where birthplace was not China or Japan or if "mixture" was recorded and decedent was not a native of the United States.
Mixed parentage	Persons of mixed parentage are classified according to the race of the nonwhite parent, and mixtures of nonwhite races are classified according to the race of the father.	First priority in cases of mixtures is given to the Hawaiian race and second to the Negro race. In cases where neither Hawaiians nor Negroes are listed, mixtures of white with any other race are coded to the nonwhite race, and mixtures of nonwhite races are classified as "other nonwhite." ³
Not reported race	This category was left as unknown in stage I for this study. In stage II when the person was a member of a household, the color of the head was substituted for the color of the person. Where race was not reported for the head, members were assigned the race of the preceding household tabulated.	If race was omitted and could not be determined from the birthplace of the decedent, assignment was to white.

¹U.S. Bureau of the Census: U.S. Census of Population: 1960, Vol. I, Characteristics of the Population, Part 1, U.S. Summary, Washington, U.S. Government Printing Office, 1964. pp. XLI-XLIII.

²National Office of Vital Statistics: Coding and punching geographic and personal particulars for births and deaths occurring in 1960 (State and NOV5 coding), section A, Part II, Vital Statistics Instruction Manual, Public Health Service, Washington, D.C., Jan. 1960. pp. 18-19.

³National Vital Statistics Division: Vital Statistics of the United States, 1960, Volume II, Part A, Public Health Service, Washington, U.S. Government Printing Office, 1963. p. 7-9.

Definitions for the major race groups are similar on both records; differences are primarily for other races, mixed parentage, and "not reported" races. Briefly, the disparity between records was introduced through the editing process in the census for races other than the major groups; through the allocation procedure, which was proportional in the census but was entirely to the white race on the death certificate, for not reported races; and through different priorities for coding mixed parentage.

Self-Enumeration on Census Records

According to publications from the Bureau of the Census, self-enumeration probably did not affect the major race categories. Increases in the Negro, Chinese, and Japanese populations over the 1950 figures were consistent with rates of natural increase and migration during the decade. The largest effect was probably on the number of American Indians which showed a relatively high rate of increase in urban areas over the 1950 figures, confirming the supposition that enumerator observation may have failed to identify off-reservation Indians. It appears that self-enumeration had no effect on the total distribution of the population by color since the 1960 distribution of white and nonwhite populations was practically

the same as the estimates made from the 1950 census.

Record Losses

The largest source of record loss was from matching death certificates with 100-percent census enumeration records (stage I). Table L shows the percent distribution of total, matched, and unmatched records by race on the death certificate and the percent of each race group not found in the census. Although 20 percent of all records were not matched, as many as 43 percent of Filipinos were not found. Except for the Japanese, nonmatch rates were higher for each of the detailed nonwhite groups than for the white group. This was also true for each of the four geographic regions (table M), but relative differences in nonmatch rates between the white group and the nonwhite groups varied from region to region. For example, a higher proportion of white decedents was found in the census in the Northeast and North Central than in the South and West. However, the proportion of all nonwhite decedents found was approximately the same in each region which is mainly a reflection of the fact that nonmatch rates for Negroes were nearly the same in each region. Apparently, successful matching was not related

Table L. Percent distribution of total, matched, and unmatched records, and percent unmatched, by race on the death certificate: United States, May-August 1960

Race	Total	Matched	Unmatched	Percent unmatched
	Percent distribution			
Total-----	100.0	100.0	100.0	20.2
White-----	89.1	90.3	84.2	19.1
Nonwhite-----	10.9	9.7	15.8	29.2
Negro-----	10.3	9.2	14.9	29.1
Indian-----	0.2	0.2	0.4	38.7
Japanese-----	0.1	0.1	0.1	18.5
Chinese-----	0.1	0.1	0.2	31.5
Filipino-----	0.1	0.0	0.1	42.9
All other races-----	0.1	0.1	0.1	29.3
Not valid-----	0.0	0.0	0.0	4.3

Table M. Percent of death certificates not matched with census records, by race on death certificate and geographic region: United States, May-August 1960

Race	North east	North Central	South	West
	Percent unmatched			
Total-	17.5	17.9	24.5	22.1
White-----	16.7	17.2	23.0	21.6
Nonwhite----	30.1	26.9	29.6	29.4
Negro-----	29.9	26.4	29.5	29.9
Indian----	¹ 32.0	¹ 45.9	¹ 33.3	¹ 38.7
Japanese----	¹ 30.8	¹ 19.4	¹ 30.0	¹ 18.1
Chinese----	¹ 43.0	¹ 39.5	¹ 48.4	¹ 23.1
Filipino----	¹ 33.3	¹ 30.0	¹ 33.3	¹ 43.1
All other races----	¹ 25.0	¹ 52.6	¹ 54.5	¹ 27.4
Not valid----	¹ 16.7	¹ -	¹ -	¹ -

¹Based on fewer than 100 death certificates.

to the frequency with which race groups were represented in a region since the West, with the greatest number of decedents in each race group other than white and Negro, did not show consistently lower nonmatch rates.

The second major source of record loss, after nonmatching and after excluding records for decedents under 1 year of age and for those over 100 years, was through nonresponse to the sex, age, or race items, a total of more than 9,000 records. Of these, 2,242 records had sex and age (1-99 years) reported on both the census record and the death certificate, but no information on race. Although records with no response to the race item constituted only 0.6 percent of the total number of census records, there were more of them than of the combined total nonwhite races (except Negroes) tabulated.

The number of matched records by race is shown in table N. The 22 records with no race information on the death certificate represented impossible codes rather than nonresponse, since all nonresponses were coded as white.

Table N. Number and percent distribution of matched records, by race according to the census record and death certificate: United States, May-August 1960

Race	Census record		Death certificate	
	Number ¹	Percent distribution	Number ¹	Percent distribution
Total-----	388,531	100.00	388,531	100.00
White-----	349,377	89.92	351,300	90.42
Nonwhite----	36,934	9.51	37,209	9.58
Negro-----	34,997	9.01	35,270	9.08
Indian----	735	0.19	658	0.17
Japanese----	566	0.15	561	0.14
Chinese----	339	0.09	321	0.08
Filipino----	186	0.05	145	0.04
All other races----	111	0.03	254	0.07
Not stated or not valid-----	2,220	0.57	22	0.01

¹Refers to the inflated number of records in which sex was reported and age was reported as 1-99 years on both the census record and the death certificate.

NATIVITY AND COUNTRY OF ORIGIN

The proportion of foreign-born persons in the total U.S. population has declined—from about 15 percent in 1900 to 5 percent in 1960. On the average, they are an older population and are therefore at greater risk of dying than the total population. In terms of mortality, nativity could have a considerable impact on the total death rate if the foreign-born had mortality risks appreciably different from those of the native-born. In fact, death rates for the foreign-born are higher in general than for the native-born. Nativity differentials in mortality may be an indirect measure of the relationship between mortality and environment versus heredity. Studies of this relationship depend on the accuracy of the basic data.

On both the death certificate and the census record, nativity was derived from the question on birthplace. All responses indicating the United States, the Commonwealth of Puerto Rico, or a possession of the United States are coded as native-born. Beyond this, there are various points at which census procedures differ from those used on the death certificate, and these are discussed in the explanatory notes.

Information on nativity and country of origin was collected for the 25-percent sample in the 1960 census. Results of the comparison of response between the census record and the death certificate are from stage II data. The study group refers to sampled decedents 1 year of age and over whose death certificates were matched with stage II census records and whose ages were reported in the same 10-year interval on both records. Because of the recent increase in the proportion of nonwhite individuals among the foreign-born (from 2.4 percent in 1950 to 4.0 percent in 1960), nativity data in this study were tabulated by race. However, country of origin was tabulated for only the foreign-born white decedents.

NATIVITY RESULTS

Percent Agreement

The correspondence in nativity statements between the two records was very high—98 percent agreement for both the native-born and foreign-born groups (table O). Almost no devia-

tion from this high agreement was found by the various characteristics of the decedents. That is, nativity was reported reliably regardless of the individual's sex, age, or geographic region of residence. Table 3 contains the basic data for these characteristics. The one exception to the generally high correspondence was the relatively low agreement among foreign-born Negroes (87 percent). Since there were only 61 such individuals, the level of discrepancy may reflect sampling variation. However, coding procedures may have contributed to the disagreements. On the death certificate, coding of race and nativity was interrelated. Where there was no nativity entry and the decedent was reported as Negro or "black," the record was assigned to the native-born category. Where race was entered ambiguously as "mixture" but birthplace was given as United States, race was assigned to the Negro category. Moreover, on the census record, nonresponses to nativity were assumed to be native. In other words, the combined tendency to classify all Negro decedents as native, all native nonwhite decedents as Negro, and all nonresponses in the population to native may correspond to the typical situation but may cause discrepancies between the records in the atypical cases.

Another characteristic that may influence agreement is the country of birth of the individual. For example, English-speaking immigrants might be considered native-born by persons reporting for them, or immigrants from certain countries might wish to disassociate themselves from their origins and report themselves as native-born. The 1.7 percent of the study group who were reported as foreign-born on the census record but native-born on the death certificate were fairly evenly distributed among the 16 countries tabulated. They ranged from less than 2 percent for most countries to a high of 3 percent for Canada. Thus, regardless of country of birth, individuals reported as foreign-born in the census were almost always reported as foreign-born on the death certificate.

Net Difference Rates

The percent agreement figures cited above indicated high correspondence in nativity information between the two records. However, this

does not imply that the difference of 1.7 percent will have no effect on death rates by nativity status. Since the foreign-born are a small proportion of the total number of decedents and population, a 1.7 percent increase or decrease in their numbers would have a more considerable impact than a similar change in the numbers of native-born. Some insight into the contribution of disparate reporting of nativity to the observed level of mortality can be obtained from the net difference rate. As might be expected, the changes indicated in rates for the native-born are small compared with those for the foreign-born (table O). For the total study group, a "corrected" death rate for the

native-born would be about 1.6 percent higher than an observed rate. The "corrected" rate for the foreign-born would be about 8.6 percent lower than the observed. This same statement is appropriate for white decedents but requires modification for Negroes and other nonwhite individuals. For Negroes the net difference rates were very small among natives (-0.2 percent) but quite large among the foreign-born (20 percent). For the "other non-white" group, the net difference rate indicated a 5-percent increase in an observed death rate for the native-born and almost 9 percent decrease in a rate for the foreign-born.

Table O. Percent agreement and net difference rates for nativity between the death certificate and matching census record, by selected characteristics: United States, May-August 1960

Selected characteristics on census record	Native-born	Foreign-born	Native-born	Foreign-born
	Percent agreement		Net difference rate	
Total-----	98.1	98.3	-1.6	8.6
<u>Sex</u>				
Male-----	98.2	98.2	-1.4	7.7
Female-----	97.9	98.3	-1.8	10.0
<u>Race</u>				
White-----	98.0	98.3	-1.7	8.6
Negro-----	99.7	¹ 86.9	-0.2	¹ 19.7
Other nonwhite-----	94.3	99.4	-5.3	8.7
<u>Age²</u>				
1-44 years-----	99.6	94.6	-0.3	15.4
45-64 years-----	98.7	97.8	-1.0	7.9
65 years and over-----	97.3	98.5	-2.3	8.6
<u>Region</u>				
Northeast-----	96.5	97.8	-2.7	7.5
North Central-----	98.1	98.8	-1.7	10.0
South-----	99.4	97.4	-0.5	9.9
West-----	98.0	99.2	-1.8	9.1

¹Based on fewer than 100 census records.

²Refers to white decedents only.

For each of the characteristics listed in table O, the census contained more statements of native-born than the death certificate. A total of 3,554 census records had no information on nativity, and persons were assumed to be native-born according to the census procedure. If this group were omitted from the comparisons, the net difference rates would have been appreciably lower. For example, the excess of native-born statements on the census compared with those on the death certificate would be 0.6 percent, and the deficit of foreign-born would be 3.4 percent as shown in the net difference rates below.

	<i>Including nativity not reported</i>	<i>Excluding nativity not reported</i>
Native-born ----	-1.6	-0.6
Foreign-born ---	8.6	3.4

Although the figures above are for the total group, they probably closely reflect what would have been found for white decedents (particularly for the foreign-born who are mostly white) had the not-stated nativity been tabulated by race.

About 20 percent of these decedents were reported as foreign-born on the death certificate. Apparently, the allocation of all nonresponses on the census to the native category resulted in a substantial understatement of the foreign-born as given on the death certificate. Where nativity is reported on both records, there is more consistency (i.e., both higher percent agreement and lower net difference rates) than where the nativity classification is made by allocation. Census allocations, however, are designed to provide accurate data not for individual decedents but for groups of living persons. Since official 1960 census figures contain the allocations, an adjustment of a death rate to census information should probably be based on net difference rates (or some other measure) which included the allocations. To compare the consistency of responses between the records, however, nonresponses on both records should be eliminated.

COUNTRY OF ORIGIN RESULTS

Percent Agreement

The following discussion is based on results for decedents classified as foreign-born on both records. Agreement in country of origin among the foreign-born white decedents was somewhat lower than agreement in nativity status—93 percent for all countries shown in table P. However, the amount of correspondence varied widely among the countries tabulated. With few exceptions the greatest agreement was found for countries whose boundaries have been fairly stable in this century: Norway, Sweden, Finland, Canada, Italy, and Mexico (table P). Conversely, the least agreement was found for the Eastern European countries which have undergone considerable changes in political geography since World War I. The disagreements, moreover, occurred largely among contiguous countries.

Of the decedents coded on the census record as Yugoslavian, for example, 80 percent were similarly reported on the death certificate, while 14 percent were coded as Austrian and 2 percent as Hungarian. Yugoslavia came into existence as a country in 1918 and was composed of areas which were formerly part of the Austro-Hungarian Empire, Serbia, and Montenegro. Since all of the decedents from Yugoslavia in the study were born before 1918, the lack of correspondence probably arose from differences between the records in handling such an area. When Austria-Hungary was stated as the birthplace in the census and the response to the mother tongue question was given as Croatian, then the country of origin was coded as Yugoslavia. (See explanatory notes for coding rules.) But when Austria-Hungary was given on the death certificate with no mention of Croatia, then the birthplace was coded as Austria. This kind of reasoning may account for many of the disparities observed, but in some cases other factors may be involved. Disagreement in the data for the United Kingdom and Ireland probably reflects failure to distinguish Northern Ireland (properly the United Kingdom) from Ireland (Eire). Almost all of the differences involved

Table P. Percent agreement and net difference rates for country of origin between the death certificate and matching census record for foreign-born white decedents: United States, May-August 1960

Country of origin on census record	Percent agreement	Percent in next most frequent category on death certificate		Net difference rate
Total-----	92.9	...		...
United Kingdom-----	89.1	10.1	(Ireland (Eire))	-9.9
Ireland (Eire)-----	97.6	1.5	(United Kingdom)	18.2
Norway-----	100.0	...		0.7
Sweden-----	99.4	0.4	(Norway)	2.5
Finland-----	98.1	1.3	(Sweden)	-1.3
Germany-----	95.4	1.4	(Poland)	0.4
Austria-----	77.9	6.2	(Czechoslovakia)	12.8
Poland-----	88.5	5.1	(U.S.S.R.)	-3.3
Czechoslovakia-----	85.3	6.4	(Austria)	-4.4
Hungary-----	82.6	12.1	(Austria)	-3.0
Yugoslavia-----	80.1	14.4	(Austria)	-5.6
Lithuania-----	93.2	4.4	(U.S.S.R.)	5.9
U.S.S.R-----	86.8	4.5	(Poland)	-0.7
Italy-----	99.6	0.4	(all other)	1.2
Canada-----	99.6	0.2	(Mexico)	0.2
Mexico-----	99.6	0.4	(all other)	0.4
All other-----	92.3	2.3	(U.S.S.R.)	-2.0

reports of Ireland (Eire) on one record when United Kingdom was listed on the other.

Comparisons of country of origin were tabulated by sex, geographic region of residence, and age. Differences by sex in levels of agreement (shown in table 4) were generally small for each country. In a few cases, there were large differences. For example, data for Lithuania may be expected to contain large discrepancies because of boundary changes. Agreement for females reporting Lithuania as their birthplace, however, was 99 percent compared with 88 percent for males. It is unlikely that classification differences between the two records would affect males and females differently. More probably, sampling error or response error would account for the variation in agreement between males and females.

The proportion of foreign-born white decedents varied among the geographic regions from 5 percent in the South to 27 percent in the Northeast. In contrast to the findings for race information, country of origin results did not demonstrate a positive relationship between frequency of occurrence and percent agreement. As shown below

agreement for all countries was highest in the South and lowest in the Northeast.

Region	Percent	
	Foreign-born	Agreement
United States----	16.6	92.9
Northeast-----	27.2	91.6
North Central-----	14.9	93.2
South-----	5.3	96.6
West-----	16.4	94.5

Comparisons of statements on country of origin were examined by age to determine whether the observed regional differences were related to age differences. The numbers of decedents in any age interval were too small to yield results sufficiently reliable for presentation, but a clear pattern was observed in the data. Within each 10-year age group 45 years and over (99 percent of

the foreign-born white decedents were 45 years and over), there was greater agreement in the South than in the Northeast for each country tabulated. Although age does not appear to be related to agreement, other demographic differences in the composition of these foreign groups, such as education among the four regions as well as the extent to which foreign groups are isolated in the region, may affect the consistency of reporting country of origin.

Net Difference Rates

Generally, the size of the net difference rates conformed to the level of agreement. The largest net difference rates were for the Eastern European countries and the United Kingdom and Ireland (table P). Although large discrepancies were explained by uncertain political boundaries, the impact on the death rates by country of origin may be severe.

The death rate for the United Kingdom was about 10 percent lower and that for Ireland was 18 percent higher than a death rate would be using census designations in both numerator and denominator. The death rate for Austria was 13 percent higher and that for countries that were formerly a part of the Austro-Hungarian Empire were about 5 percent lower than death rates based only on census information. The net difference rates for Poland, Hungary, and the U.S.S.R. were relatively small because the direction of the rates for males was the opposite of that for females. For the remaining countries, the net difference rates were small, reflecting high percent agreement rather than the cancelling of discrepancies between the records or between the results by sex.

The data used to compute the net difference rates were for decedents classified as foreign-born on both the death certificate and the census record. Thus, the application of these net difference rates to observed death rates will correct discrepancies in statements on country of origin only. However, observed death rates may also contain differences in nativity reporting, i.e., individuals reported as native on one record and foreign-born on the other. The net difference rate for the foreign-born from all countries combined was 9 percent. It cannot be assumed that this fig-

ure is appropriate for any specific country of origin. Unfortunately data are not available for all foreign-born decedents by country of origin but only for those who were recorded as foreign-born on the census records. For this reason, the net difference rates presented here are limited in usefulness. They may be considered as suggestive of the extent of bias in observed death rates that arises from discrepant information about the country of origin of the foreign-born.

SUMMARY AND CONCLUSIONS

The percent agreement in nativity statements was high, 98 percent for both native- and foreign-born groups. Agreement for country of origin among the foreign-born was somewhat lower than for nativity, about 93 percent. Both these figures may be an overstatement of the amount of correspondence that actually exists between the two records. In the first place, the figures are based on matched records only. Secondly, these data refer only to decedents whose ages were in the same 10-year interval on both records. To the extent that age agreement is related to agreement on other variables, these results may be higher than would result for the total group of matched records.

Agreement in nativity was high for both nativity groups for sex, age, geographic region, and race (except for foreign-born Negroes). On the other hand, agreement in statements on country of origin varied considerably from one country to another by sex and geographic region. It was generally higher in the South and West than in the Northeast and North Central. While changes in boundaries may explain discrepancies in results for particular countries, such changes cannot account for variation in agreement among the subgroups from those countries.

For both nativity and country of origin, the net difference rates were quite large, indicating that death rates based on death certificate and census information may be biased. Statements of foreign-born on the death certificate were about 9 percent higher than on the census record. It is difficult to explain the discrepancy in terms of an error in reporting foreign-born on the death certificate. A nonresponse on the death record for

white decedents (98 percent of the foreign-born were white) was left as unknown nativity. There does not seem to be any motive for claiming foreign-born status on the death record. However, in the census there are two plausible explanations for the underreporting of foreign-born. The major reason is that all nonresponses in the census were assigned to the native category. When these allocations were eliminated, the understatement of foreign-born relative to the death certificate was reduced to 3 percent. Some of this 3 percent may represent individuals who believed that reporting foreign-born on the census record would be detrimental to themselves or to the person for whom they were responding.

The net difference rates for country of origin suggested that death rates for the United Kingdom, Ireland, Austria, and, to a lesser extent, the other countries of Eastern Europe may be seriously biased. For the Eastern European countries, the main problem appears to be in the allocation of all birthplace responses on the death certificate of Austria-Hungary to Austria. Without either additional information as is provided by the answer to the question on mother tongue on the census record or an attempt to allocate decedents proportionally to each of the countries once a part of the Austro-Hungarian Empire, some differences between the two records for these countries may be expected.

EXPLANATORY NOTES

Definitions

Both nativity and country of origin on the census record and the death certificate were derived from the response to the birthplace question. A response giving the United States, the Commonwealth of Puerto Rico, or a possession of the United States was coded as native on the two records.

On the death certificate, nonresponses to birthplace were left as unknown nativity and unknown country of origin except where the race entry indicated that the decedent was Negro, black, or Indian; then the birthplace was coded as native. When birthplace for the decedent was given as a foreign country, it was given the code of the country that is currently recognized by the United States. For example, such entries as Slovenia,

Slovakia, or Serbia were coded as Yugoslavia. As mentioned earlier the major problem in coding country of origin came about when insufficient information was available as in the cases of Austria-Hungary and Ireland. Austria-Hungary was coded as Austria; Ireland, without a specification of Eire or Northern Ireland, was coded as Ireland (Eire).

On the census record, nonresponses to birthplace were coded as native unless other information in the record contradicted this, particularly a response to the question: "What language was spoken in his home before he came to the United States?" On the basis of the answer to the question on mother tongue, nonresponses to birthplace were assigned as foreign-born, and ambiguous responses were coded to a particular country. For example, if Austria-Hungary were given as birthplace and mother tongue was given as Rumanian, country of origin was coded as Rumania. In cases where there was no response to mother tongue but birthplace was given as Austria-Hungary, country of origin was allocated according to the "distribution of nationalities of migrants from the Austro-Hungarian Empire as reported in the 1920 Census report, Volume II, *Population*."¹⁴ These procedures and the possible improvements resulting from self-enumeration in the 1960 census were thought to have contributed to the better coverage of persons of Yugoslavian origin in 1960 than in 1950. Also, the census form explicitly stated that "if born outside the United States . . . use international boundaries as now recognized by the U.S. [and] distinguish Northern Ireland from Ireland (Eire)."

Nonresponse

One of the most important causes of discrepancies between records on the nativity item appeared to result from assigning nativity as native-born for nonresponses on the census records. About 4 percent of the census records for decedents in this study group had unknown nativity in contrast with about 0.4 percent of the death certificates, which were excluded from the analysis. Nonresponses to nativity on the census record were tabulated by race on the death certificate, but responses to nativity were analyzed by race on the census record. Thus, the effect of allocating nativity on comparability results could not be de-

terminated by race. The number of individuals for whom allocations were made and their nativity status on the death certificate is shown in table Q.

For tabulations of country of origin, only those records were selected which had codes of foreign-born white on the census record. Of these 12,480 records, 14 did not have information on country of origin on the census record, and 211 had native-

born reported on the death certificate. In other words, if an individual was coded as foreign-born in the census, it was extremely likely that his country of origin was reported. Measures of comparability were based on data for individuals reported as foreign-born on both the death certificate and the census record.

Table Q. Number of stage II census records, by nativity status and race on the death certificate: United States, May-August 1960

Sex and race	Total		Nativity not ascertained on census record	
	Native-born	Foreign-born	Native-born	Foreign-born
<u>Both sexes</u>	Number			
Total-----	68,098	13,800	2,882	672
White-----	61,763	13,552	2,509	653
Negro-----	6,086	73	366	11
Other nonwhite-----	249	175	7	8
<u>Male</u>				
Total-----	39,540	8,105	1,373	329
White-----	35,972	7,945	1,174	316
Negro-----	3,426	40	195	5
Other nonwhite-----	142	120	4	8
<u>Female</u>				
Total-----	28,558	5,695	1,509	343
White-----	25,791	5,607	1,335	337
Negro-----	2,660	33	171	6
Other nonwhite-----	107	55	3	-

GENERAL DISCUSSION

There are difficulties in using the results presented here to generalize to different populations or time periods. For example, the agreement found for the study group may be an overestimate of the level of correspondence that exists among all death certificates and census records for the same persons. Some of the facts supporting this hypothesis are in brief that: (1) a sample of death certificates filed within 4 months of the 1960 census enumeration was selected; (2) analysis was necessarily confined to cases where the census record was found, implying the existence of a certain amount of similarity between the records for purposes of matching; and (3) all records with missing information on the variable under consideration were eliminated from the calculations. On the other hand, it is also possible that some of the discrepancies noted were results of mismatched records which would tend to overestimate the level of disagreement. But where the results of this study were compared with those of other matched record studies, if the figures were not quantitatively similar, the same general patterns were observed. Parallel findings in diverse studies lend support to the reliability of results presented here. Moreover, these results can be used to discuss other pertinent issues from a relative standpoint. What parts of the study group are providing more reliable information ("reliable" meaning correspondence in information between the two records) than others? Which kinds of information are reported more reliably than others? To what extent does the processing of information improve or distort correspondence?

With regard to the variation in the amount of correspondence among the decedents, the study group can be divided into color, sex, and age groups in order to compare the levels of agreement in reporting age, marital status, race, and nativity. The largest variations were between color groups. For all four categories except nativity, there was more agreement among white decedents than among nonwhite. The agreement for the nonwhite group compared with that for the white was between 1 and 2 percentage points higher in reporting nativity, between 1 and 2 percentage points lower in reporting color, 7 percentage points lower in reporting marital status, and about

16 to 20 percentage points lower in reporting age in 10-year intervals (table R). Moreover, substantial differences between the color groups were found in the subcategories. Agreement for the nonwhite was more than 10 percentage points lower than that for white single and divorced decedents,

Table R. Percent agreement on four variables between the death certificate and matching census record, by color and sex: United States, May-August 1960

Variable	White		Nonwhite	
	Male	Female	Male	Female
<u>Nativity</u> ¹	Percent agreement			
Total-----	98.1	97.9	99.3	99.4
Native-born-----	98.2	97.7	99.4	99.5
Foreign-born-----	98.2	98.4	96.5	94.9
<u>Color</u> ²				
Total-----	99.8	99.8	97.9	97.6
<u>Marital status</u> ²				
Total-----	94.8	94.7	87.2	88.4
Single-----	88.7	92.1	76.4	71.6
Married-----	97.3	94.8	92.3	89.8
Widowed-----	92.0	96.4	82.3	91.8
Divorced-----	76.8	64.8	54.6	54.3
<u>Age</u> ²				
Total-----	93.0	90.5	77.1	71.6
1-4 years-----	96.5	97.2	94.5	96.3
5-14 years-----	95.7	94.6	92.8	93.1
15-24 years-----	95.3	93.6	89.7	88.7
25-34 years-----	91.0	90.5	83.5	84.3
35-44 years-----	91.2	90.6	81.3	81.0
45-54 years-----	93.4	91.5	83.7	81.7
55-64 years-----	93.5	89.9	81.2	75.2
65-74 years-----	92.8	87.7	74.8	65.0
75-84 years-----	93.0	91.5	64.1	58.7
85-99 years-----	92.7	92.7	61.0	60.7

¹Stage II data.

²Stage I data.

and more than 25 percentage points lower for the 10-year age groups 75 years and over. On the other hand, agreement in information between color groups was no more than 5 percentage points apart for both native- and foreign-born, for the married, for the white and nonwhite, and for the age groups 1-4 and 5-14 years.

In these subcategories where there was essentially no difference between color groups, agreement was very high in an absolute sense (about 95 percent or higher). Where agreement was relatively low (less than 95 percent), however, the difference between color groups was greater. In other words, two patterns were observed: (1) some variables were reported with greater consistency than others, regardless of the individual's color; and (2) variables with unreliable information for white decedents had more unreliable information for the nonwhite.

Clear differences were not observed between the sexes for nativity, color, and all marital groups combined. By age, agreement was higher for both white and nonwhite males aged 35-84 years. The only other noticeable and consistent finding was the higher agreement for both color groups among widowed females and married males. For most of the categories and subcategories, moreover, the difference between the sexes was less than 5 percentage points.

The differences between younger and older decedents in the reliability of information were very slight for each of the four major categories (table S). There were several subcategories, however, in which the reliability of information showed some relationship to age. Since the vast majority of decedents were older, the results for the younger group are obscured by their small numbers. Thus, rates for Chinese, Filipinos, and "all other races" under age 45 cannot be evaluated. The negligible overall difference between younger and older ages by marital status is accounted for by the differing patterns of higher agreement for the single and divorced in the younger group as opposed to the higher agreement for the married and widowed in the older group. For nativity, 98 percent of the younger decedents were native-born; therefore, the lack of agreement in foreign-born statements for younger decedents had no effect on the total. Finally, no difference was noted by age among white decedents, but considerably

Table S. Percent agreement on four variables between the death certificate and matching census record, by younger and older ages: United States, May-August 1960

Variable	Total	1-44 years	45+ years
<u>Nativity¹</u>			
Total-----	98.1	99.5	98.0
Native-born-----	98.1	99.6	97.9
Foreign-born-----	98.3	93.7	98.3
<u>Race¹</u>			
Total-----	99.6	99.4	99.7
White-----	99.8	99.7	99.8
Negro-----	98.5	99.1	98.3
Indian-----	75.2	³ 79.0	³ 72.4
Japanese-----	100.0	³ 100.0	³ 100.0
Chinese-----	³ 80.7	³ 66.7	³ 83.3
Filipino-----	³ 57.6	³ 33.3	³ 63.0
All other races----	³ 79.6	³ 92.3	³ 75.6
<u>Marital status²</u>			
Total-----	94.1	93.8	94.1
Single-----	88.7	93.3	87.5
Married-----	96.1	95.6	96.1
Widowed-----	94.4	73.3	94.5
Divorced-----	70.5	77.3	69.5
<u>Age²</u>			
Total-----	90.3	91.3	90.2

¹Stage II data.

²Stage I data. Marital status refers to ages 15-99 years.

³Based on fewer than 100 census records.

less age agreement was found among older non-white individuals than among the younger.

As indicated above, correspondence was high for certain kinds of information regardless of the age, sex, or color of the decedent. The highest levels were found for those variables which were tabulated as a dichotomy, specifically, nativity and color. The level of agreement was lower for marital status (four subcategories) and still lower for age (10 subcategories). This pattern of decreasing

correspondence with increasing number of alternative subcategories refers only to the level of agreement for the entire category and not to the agreement for the subcategory. For each sex-color group, for example, agreement in information for the divorced was lower than that for any 10-year age group. Similarly, ages under 25 were more reliably reported than the subcategory single. Thus, other factors in addition to the number of tabulated subcategories contribute to the result of some kinds of information being more reliably reported than others. Apparently the items reported with the greatest reliability were those which either were dichotomous (i.e., color and nativity) or implied a family situation (i.e., married and ages of young children and teenagers).

There was some relationship observed between the level of correspondence for an item and the frequency of its occurrence. Usually agreement was lower in groups with small numbers of persons. This was not true for age, however, which had the opposite pattern (high agreement among younger ages which were infrequent relative to all deaths), probably because it is easier to discern younger ages accurately. It was true, however, for each subcategory of marital status, for some subcategories of race, and for the native- and foreign-born among nonwhite decedents. One reason why frequency may affect agreement is that an answer may be assumed by the collecting agent. The interviewer may record an expected response based on what is usual. "Married," for example, may be recorded for individuals since it is the usual marital condition, or "native" may be recorded for nonwhite individuals who are usually American Negro. Another possible reason is that the question may be perceived as threatening. If the subject belongs to a minority group, he or whoever is reporting for him may feel a stigma attached to the appropriate response and may give an answer which he feels is more socially acceptable. For example, divorced persons (or their relatives) may prefer to consider themselves as widowed or married. Still another reason for less agreement in the infrequent subcategories may be that information for a number of people is unknown and reported at random. A constant number of errors of this nature would affect only a small pro-

portion of a frequent subcategory but a large proportion of an infrequent one.

Finally, some overall comments should be made on the effect of allocating procedures on the comparability of information. Nonresponses on the death certificate were usually unedited except for the color item, where a nonresponse was coded "white." Most of the nonresponses on the census record were allocated. These allocations were tabulated by responses on the death certificate for this study, which permitted examination of the effect of such procedures. In general, the proportion of nonresponse to the total was too small to make an appreciable difference on total results, although subgroups of the total were affected.

The three variables for which some information is available on allocations represent three ways in which nonresponse was edited in the census. For nativity, unless the mother tongue was given, all nonresponses were coded as native-born. The effect was to overstate the native-born by a small amount and to understate the foreign-born by a large amount relative to the numbers on the death certificate. For nonresponse to race, the race of a relative in the household was automatically substituted. It is not possible to estimate the effect of this procedure since results were confounded by the allocation of all nonresponses to the race item on the death certificate to the white category. However, stage I results with no census allocations were compared with stage II results with census allocations (both containing death certificate allocations). These comparisons showed that the effect of the substitution was nonexistent for white and Negro decedents but was slight for the "other nonwhite" group, with a decrease in agreement and an increase in the net difference rates. Allocating race tended to overstate the number of census records for the "other nonwhite" group relative to the death certificate, which may in fact be a closer approximation to reality since the allocations to white for nonresponse on the death certificate may understate the number of "other nonwhite" decedents.

The editing of nonresponses to age in the census was more complicated, involving what is called the "hot deck" procedure. A nonresponse was assigned the age of the last individual counted

in a particular demographic group (identified by his color, sex, and relationship to the head of the household). Despite the complexity of the procedure and despite the fact that the resulting age distribution of the total closely resembled the age distribution of the population reporting age, only 20 percent of the allocations agreed with the 10-year age group reported on the death certificate. However, it cannot be concluded that the allocation procedure for decedents alive at the time of the census is inadequate compared with its apparent adequacy for the total population. Primarily the allocation is supposed to be satisfactory on an average basis, and the 20-percent agreement refers to what occurred on an individual basis. In other words a person who is 25 years old may be allocated to age 45, and a person who is 45 may be allocated to age 25. The two errors in this case would be cancelled and the expected number in an age group would be unbiased. Secondly, those persons for whom age was not reported in the census may be more likely to have an unreliable age reported for them on the death certificate. A disagreement between a response on one record and an allocation on the other does not necessarily indicate that the allocation is incorrect.

Aside from methodological and evaluative interest, a crucial issue is not whether the records correspond but how significant the differences are in terms of challenging the usefulness of death rates. Ideally, a death rate must meet at least three criteria: (1) the deaths and the population at risk of death must be completely enumerated, (2) the information provided on the records must be valid, and (3) the numerator must be completely represented in the denominator. The first criterion has been and will probably continue to be the subject of many studies, almost all of which are concerned with the coverage of the population. Very little is known about the validity of the data, and the present study cannot be used to evaluate validity. When results of the present study are used to suggest inaccuracies in the death rate, they relate only to the third criterion. Percent agreement is an estimate of the extent to which the numerator agrees with the denominator. The net difference rates estimate the amount of change in the death rates needed to eliminate errors arising from discrepant informa-

tion between the records. Completeness of coverage of the population and death registration could affect the size and direction of the changes indicated.

For most of the characteristics studied here, the net difference rates were not large enough to effect substantial changes in the death rates. Following the pattern for percent agreement, small changes were indicated for the native-born, the white, the nonwhite, the single, the married, and the widowed of all ages. Net difference rates for the foreign-born, the divorced, some specific nonwhite race groups, the widowed of young ages, and the older age groups among the nonwhite were quite large. In some of these cases a corrected death rate would change the relative mortality positions. This possibility has been discussed in some detail. Death rates for the nonwhite group were always higher than those for the white up to age 75 when they were lower. When the net difference rates were applied, the corrected death rates for the older nonwhite group were almost as high as those for the white. The impression given by the results of the nativity comparisons is that a corrected death rate might reduce the level of mortality of the foreign-born to, if not below, that of the native-born.

The object of this discussion has been to point out that the comparison of statements can be and has been used to derive death rates which eliminate one source of error—the discrepancies in information between the numerator and denominator. Death rates have been calculated correcting for discrepancies in age, in marital status, in race, in nativity, and in country of origin and are published in separate reports (see references 1, 5, and 6).

Beyond this point further research is required in order to provide death rates which meet the three criteria of accuracy described above. Regarding the last two criteria, some effort is needed to determine which, if either, of the records contains the more nearly correct information. Such an endeavor might include precensus and postcensus interviews and a matching with three or more independent records. It would be futile to eliminate bias in the death rates by using only census information if it were known that data on the death certificate were more accurate or that both records were in error.

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Table 1. Cross classification of marital status as stated on the death certificate and on the matching 100-percent census enumeration record (stage I) for the total study group, group with equal ages, and group with unequal ages, by color, sex, and age: United States, May-August 1960

Color, sex, age ¹ , and marital status on census record	Marital status on death certificate (equal ages ²)						Marital status on death certificate (unequal ages)					
	Total ¹	Single	Married	Widowed	Divorced	Not stated ²	Total ¹	Single	Married	Widowed	Divorced	Not stated ²
White male												
15-99 years----	179,961	18,147	123,118	32,633	6,063	886	13,481	1,744	7,886	3,232	619	152
Single-----	18,827	16,889	532	801	605	338	1,733	1,352	123	170	88	69
Married-----	124,379	426	121,355	1,941	657	222	8,191	190	7,583	331	87	47
Widowed-----	31,704	584	896	29,351	873	198	3,054	159	153	2,635	107	21
Divorced-----	5,051	248	335	540	3,928	93	503	43	27	96	337	12
Not stated ³ -----	906	184	377	248	62	35	129	33	52	35	6	3
15-24 years----	3,282	2,780	468	4	30	19	161	69	73	9	10	-
Single-----	2,793	2,746	38	1	8	16	93	65	19	7	2	-
Married-----	461	25	428	2	6	3	59	4	53	1	1	-
Widowed-----	4	3	-	-	1	-	3	-	1	1	1	-
Divorced-----	24	6	2	1	15	-	6	-	-	-	6	-
Not stated ³ -----	20	19	1	-	-	-	2	1	1	-	-	-
25-34 years----	3,361	845	2,347	22	147	11	329	92	178	27	32	3
Single-----	869	817	22	3	27	5	100	68	14	6	12	2
Married-----	2,360	17	2,305	13	25	4	198	20	160	11	7	1
Widowed-----	12	1	5	5	1	-	9	-	1	7	1	-
Divorced-----	120	10	15	1	94	1	22	4	3	3	12	-
Not stated ³ -----	10	2	7	-	-	1	1	-	1	-	-	-
35-44 years----	7,966	1,025	6,419	91	431	29	768	151	480	82	55	8
Single-----	1,057	974	38	3	42	9	145	104	10	24	7	2
Married-----	6,469	28	6,337	26	78	17	551	44	465	30	12	3
Widowed-----	83	5	11	59	8	1	19	1	1	15	2	1
Divorced-----	357	18	33	3	303	2	53	2	4	13	34	2
Not stated ³ -----	23	5	15	-	3	-	2	-	-	2	-	-
45-54 years----	19,797	1,839	16,465	449	1,044	80	1,359	205	905	154	95	24
Single-----	1,881	1,687	62	26	106	26	175	135	11	11	18	11
Married-----	16,575	74	16,295	80	126	26	1,006	42	885	66	13	9
Widowed-----	433	23	32	318	60	6	93	16	5	65	7	-
Divorced-----	908	55	76	25	752	20	85	12	4	12	57	4
Not stated ³ -----	82	20	41	4	15	2	20	4	9	3	4	-
55-64 years----	35,399	3,036	28,594	2,107	1,662	172	2,458	366	1,574	387	131	23
Single-----	3,159	2,792	108	91	168	55	360	296	16	27	21	11
Married-----	28,794	92	28,285	224	193	66	1,637	34	1,524	66	13	5
Widowed-----	2,050	85	108	1,702	155	17	347	29	27	276	15	-
Divorced-----	1,396	67	93	90	1,146	26	114	7	7	18	82	5
Not stated ³ -----	136	19	70	18	21	8	25	7	8	8	-	2
65-74 years----	52,306	4,202	38,785	7,681	1,638	282	4,051	424	2,465	1,010	152	39
Single-----	4,350	3,861	144	201	144	122	428	333	41	36	18	18
Married-----	39,148	113	38,302	549	184	70	2,512	24	2,384	87	17	8
Widowed-----	7,445	166	243	6,753	283	58	976	54	38	858	26	11
Divorced-----	1,363	62	96	178	1,027	24	135	13	2	29	91	1
Not stated ³ -----	244	44	108	66	18	8	30	14	12	1	2	1
75-84 years----	42,962	3,358	24,730	13,934	940	252	3,216	333	1,704	1,060	119	34
Single-----	3,596	3,076	100	325	95	95	311	261	9	32	9	19
Married-----	25,096	41	24,259	751	45	31	1,712	20	1,633	41	18	6
Widowed-----	13,553	211	351	12,691	300	101	1,118	47	55	971	45	9
Divorced-----	717	30	20	167	500	15	75	5	7	16	47	-
Not stated ³ -----	255	50	100	95	-	10	29	7	11	11	-	-
85-99 years----	14,888	1,062	5,310	8,345	171	41	1,139	104	507	503	25	21
Single-----	1,122	936	20	151	15	10	121	90	3	27	1	6
Married-----	5,476	36	5,144	296	-	5	516	2	479	29	6	15
Widowed-----	8,124	90	146	7,823	65	15	489	12	25	442	10	-
Divorced-----	166	-	-	75	91	5	13	-	-	5	8	-
Not stated ³ -----	136	25	35	65	5	6	20	-	10	10	-	-

See footnotes at end of table.

Table 1. Cross classification of marital status as stated on the death certificate and on the matching 100-percent census enumeration record (stage I) for the total study group, group with equal ages, and group with unequal ages, by color, sex, and age: United States, May-August 1960—Con.

Color, sex, age ¹ , and marital status on census record	Marital status on death certificate (equal ages ²)						Marital status on death certificate (unequal ages)					
	Total ¹	Single	Married	Widowed	Divorced	Not stated ²	Total	Single	Married	Widowed	Divorced	Not stated ²
White female												
15-99 years----	131,882	12,447	50,999	65,324	3,112	372	13,882	1,612	4,312	7,601	357	84
Single-----	12,689	11,792	169	626	102	55	1,638	1,399	46	180	13	14
Married-----	52,279	144	49,816	2,067	252	119	4,517	69	4,055	362	31	21
Widowed-----	64,022	409	862	61,903	848	172	7,429	133	184	6,957	155	42
Divorced-----	2,892	102	152	728	1,910	22	298	11	27	102	158	6
Not stated ³ -----	855	123	211	503	14	4	167	37	28	98	3	1
15-24 years----	1,304	869	407	12	16	3	87	31	39	15	2	1
Single-----	871	858	12	-	1	3	40	30	2	8	-	-
Married-----	412	7	391	9	5	-	43	1	36	5	1	1
Widowed-----	7	2	2	3	-	-	3	-	1	2	-	-
Divorced-----	14	2	2	-	10	-	1	-	-	-	1	-
Not stated ³ -----	7	5	2	-	-	-	2	-	-	2	-	-
25-34 years----	1,921	286	1,511	21	103	6	201	38	116	29	18	1
Single-----	285	276	5	-	4	2	43	35	2	4	2	-
Married-----	1,517	6	1,490	6	15	3	125	3	112	9	1	-
Widowed-----	20	1	4	13	2	1	15	-	-	14	1	1
Divorced-----	99	3	12	2	82	-	18	-	2	2	14	-
Not stated ³ -----	8	2	4	1	1	-	-	-	-	-	-	-
35-44 years----	5,045	470	4,109	186	280	10	520	62	322	107	29	4
Single-----	469	440	16	-	13	1	74	50	6	17	1	-
Married-----	4,145	17	4,061	28	39	7	343	7	311	21	4	3
Widowed-----	178	2	19	148	9	1	63	2	3	55	3	1
Divorced-----	253	11	13	10	219	1	40	3	2	14	21	-
Not stated ³ -----	20	3	14	2	1	-	4	1	2	1	-	-
45-54 years----	10,171	866	7,837	973	495	34	918	140	521	199	58	16
Single-----	861	815	20	9	17	4	142	118	7	16	1	1
Married-----	7,908	23	7,746	89	50	17	565	13	502	43	7	8
Widowed-----	946	12	41	843	50	7	157	6	9	128	14	1
Divorced-----	456	16	30	32	378	6	54	3	3	12	36	5
Not stated ³ -----	44	5	35	2	2	-	15	7	5	2	-	1
55-64 years----	18,333	1,476	11,807	4,354	696	43	2,072	218	923	841	90	4
Single-----	1,521	1,405	34	56	26	7	262	198	12	46	6	3
Married-----	12,002	30	11,645	269	58	17	945	7	888	47	3	-
Widowed-----	4,148	19	90	3,925	114	14	804	8	20	729	47	1
Divorced-----	662	22	38	104	498	4	61	5	3	19	34	-
Not stated ³ -----	85	8	52	20	4	1	9	-	6	2	1	-
65-74 years----	33,776	2,583	15,235	15,101	857	84	4,721	562	1,418	2,664	77	34
Single-----	2,645	2,427	52	140	26	8	517	468	9	39	1	-
Married-----	15,601	26	14,891	629	55	44	1,477	28	1,335	111	3	6
Widowed-----	14,818	102	260	14,148	308	24	2,653	66	64	2,477	46	27
Divorced-----	712	28	32	184	468	6	74	-	10	37	27	1
Not stated ³ -----	169	20	54	87	6	2	40	-	13	27	-	-
75-84 years----	40,420	3,789	8,868	27,253	510	92	3,730	390	784	2,509	47	10
Single-----	3,834	3,574	25	225	10	10	394	344	7	41	2	5
Married-----	9,204	20	8,487	677	20	21	821	7	708	100	6	1
Widowed-----	26,826	185	336	26,035	270	55	2,486	39	67	2,360	20	4
Divorced-----	556	10	20	316	210	5	29	-	2	8	19	-
Not stated ³ -----	302	50	30	221	-	1	67	14	2	49	2	-
85-99 years----	20,912	2,108	1,225	17,424	155	100	1,633	171	189	1,237	36	14
Single-----	2,203	1,997	5	196	5	20	166	156	1	9	-	5
Married-----	1,490	15	1,105	360	10	10	198	3	163	26	6	2
Widowed-----	17,079	86	110	16,788	95	70	1,248	12	20	1,192	24	7
Divorced-----	140	10	5	80	45	-	21	-	5	10	6	-
Not stated ³ -----	220	30	20	170	-	-	30	15	-	15	-	-

See footnotes at end of table.

Table 1. Cross classification of marital status as stated on the death certificate and on the matching 100-percent census enumeration record (stage I) for the total study group, group with equal ages, and group with unequal ages, by color, sex, and age: United States, May-August 1960—Con.

Color, sex, age ¹ , and marital status on census record	Marital status on death certificate (equal ages ²)						Marital status on death certificate (unequal ages)					
	Total	Single	Married	Widowed	Divorced	Not stated ³	Total	Single	Married	Widowed	Divorced	Not stated ³
Nonwhite male												
15-99 years----	14,277	1,835	9,236	2,607	599	236	4,447	407	2,684	1,197	159	81
Single-----	1,866	<u>1,483</u>	174	147	62	66	416	<u>261</u>	45	79	31	24
Married-----	9,425	197	<u>8,768</u>	307	153	94	2,780	80	<u>2,498</u>	164	38	40
Widowed-----	2,488	109	<u>222</u>	<u>2,063</u>	94	48	1,137	53	<u>116</u>	<u>922</u>	46	20
Divorced-----	498	46	72	90	<u>290</u>	18	114	13	25	32	<u>44</u>	3
Not stated ³ -----	118	22	49	24	13	10	42	7	15	17	2	1
15-24 years----	580	486	90	1	3	6	63	27	30	5	1	2
Single-----	485	<u>475</u>	9	-	1	4	42	<u>25</u>	14	2	1	-
Married-----	91	10	<u>80</u>	1	-	1	20	2	<u>16</u>	2	-	2
Widowed-----	1	-	1	-	-	-	1	-	-	<u>1</u>	-	-
Divorced-----	3	1	-	-	<u>2</u>	-	-	-	-	-	-	-
Not stated ³ -----	5	4	-	-	-	1	4	1	3	-	-	-
25-34 years----	693	228	437	3	25	8	137	32	88	12	5	2
Single-----	221	<u>195</u>	17	2	7	5	25	<u>19</u>	1	3	2	2
Married-----	453	27	<u>417</u>	1	8	3	104	12	<u>84</u>	6	2	-
Widowed-----	4	2	-	-	2	-	5	1	1	<u>3</u>	-	-
Divorced-----	15	4	3	-	<u>8</u>	-	3	-	2	-	<u>1</u>	-
Not stated ³ -----	7	5	1	1	-	-	1	1	-	-	-	-
35-44 years----	1,262	217	923	42	80	25	292	63	191	27	11	7
Single-----	216	<u>172</u>	29	7	8	6	56	<u>45</u>	6	4	1	3
Married-----	954	33	<u>874</u>	14	33	16	211	15	<u>180</u>	10	6	2
Widowed-----	34	5	8	<u>18</u>	3	1	17	2	3	<u>11</u>	1	1
Divorced-----	58	7	12	3	<u>36</u>	1	8	1	2	2	<u>3</u>	1
Not stated ³ -----	8	2	3	-	2	1	-	-	-	-	-	-
45-54 years----	2,292	228	1,751	157	156	34	440	67	285	59	29	16
Single-----	221	<u>159</u>	34	14	14	7	60	<u>32</u>	11	6	11	5
Married-----	1,805	42	<u>1,670</u>	49	44	16	310	24	<u>259</u>	22	5	10
Widowed-----	125	13	24	<u>81</u>	7	3	44	6	7	<u>28</u>	3	1
Divorced-----	141	14	23	13	<u>91</u>	7	26	5	8	3	<u>10</u>	-
Not stated ³ -----	17	3	9	1	3	1	5	-	3	2	-	-
55-64 years----	3,176	279	2,292	447	158	70	733	73	497	131	32	20
Single-----	289	<u>190</u>	39	40	20	25	75	<u>50</u>	5	15	5	6
Married-----	2,333	48	<u>2,185</u>	65	35	27	512	13	<u>466</u>	25	8	10
Widowed-----	409	27	53	<u>307</u>	22	9	122	10	22	<u>82</u>	8	3
Divorced-----	145	14	15	35	<u>81</u>	5	24	-	4	9	<u>11</u>	-
Not stated ³ -----	33	6	17	2	4	4	8	2	3	1	1	1
65-74 years----	3,598	258	2,422	782	136	57	1,213	68	762	336	47	24
Single-----	262	<u>187</u>	33	32	10	11	79	<u>46</u>	5	21	7	6
Married-----	2,441	27	<u>2,301</u>	93	20	20	790	8	<u>721</u>	51	10	10
Widowed-----	797	39	73	<u>639</u>	46	20	313	10	29	<u>258</u>	16	6
Divorced-----	98	5	15	18	<u>60</u>	4	31	4	7	6	<u>14</u>	2
Not stated ³ -----	25	1	7	12	3	2	9	2	3	3	1	-
75-84 years----	1,968	98	1,065	775	30	32	1,123	69	644	388	22	13
Single-----	120	<u>72</u>	12	34	2	8	66	<u>39</u>	2	21	4	1
Married-----	1,093	10	<u>1,006</u>	68	9	10	642	6	<u>598</u>	34	4	5
Widowed-----	723	15	44	<u>656</u>	8	12	399	21	42	<u>326</u>	10	7
Divorced-----	32	1	3	17	<u>11</u>	1	16	3	2	7	<u>4</u>	-
Not stated ³ -----	19	-	11	6	1	1	9	1	2	6	-	-
85-99 years----	708	41	256	400	11	4	446	8	187	239	12	4
Single-----	52	<u>33</u>	1	18	-	-	13	<u>5</u>	1	7	-	1
Married-----	255	-	<u>235</u>	16	4	1	191	-	<u>174</u>	14	3	1
Widowed-----	395	8	19	<u>362</u>	6	3	236	3	12	<u>213</u>	8	2
Divorced-----	6	-	1	4	<u>1</u>	-	6	-	-	5	<u>1</u>	-
Not stated ³ -----	4	1	1	2	-	-	6	-	1	5	-	-

See footnotes at end of table.

Table 1. Cross classification of marital status as stated on the death certificate and on the matching 100-percent census enumeration record (stage I) for the total study group, group with equal ages, and group with unequal ages, by color, sex, and age: United States, May-August 1960—Con.

Color, sex, age ¹ , and marital status on census record	Marital status on death certificate (equal ages ²)						Marital status on death certificate (unequal ages)					
	Total ¹	Single	Married	Widowed	Divorced	Not stated ³	Total	Single	Married	Widowed	Divorced	Not stated ³
Nonwhite female												
15-99 years----	11,154	798	4,970	4,962	424	113	4,648	256	1,535	2,743	114	60
Single-----	846	<u>643</u>	54	129	20	13	269	<u>155</u>	25	81	8	9
Married-----	5,133	69	<u>4,669</u>	299	96	40	1,601	28	<u>1,377</u>	176	20	18
Widowed-----	4,824	77	<u>203</u>	<u>4,435</u>	109	53	2,680	68	<u>121</u>	<u>2,450</u>	41	28
Divorced-----	351	9	44	<u>99</u>	<u>199</u>	4	98	5	12	<u>36</u>	<u>45</u>	4
Not stated ³ -----	114	11	42	51	7	3	52	2	19	29	1	1
15-24 years----	294	193	90	5	6	2	37	16	14	5	2	1
Single-----	193	<u>184</u>	6	-	3	1	19	<u>14</u>	3	2	-	-
Married-----	95	8	<u>82</u>	4	1	1	14	2	<u>11</u>	-	1	1
Widowed-----	2	1	-	<u>1</u>	-	-	3	-	-	<u>3</u>	-	-
Divorced-----	4	-	2	-	<u>2</u>	-	1	-	-	-	<u>1</u>	-
Not stated ³ -----	2	1	1	-	-	-	-	-	-	-	-	-
25-34 years----	576	87	433	30	26	7	105	19	63	14	9	-
Single-----	78	<u>70</u>	5	1	2	1	25	<u>15</u>	6	2	2	-
Married-----	447	13	<u>413</u>	12	9	5	65	2	<u>56</u>	5	2	-
Widowed-----	27	-	<u>10</u>	<u>16</u>	1	-	6	-	-	<u>6</u>	-	-
Divorced-----	24	4	5	1	<u>14</u>	1	9	2	1	1	<u>5</u>	-
Not stated ³ -----	2	2	-	-	-	-	4	-	3	-	1	-
35-44 years----	1,206	105	884	127	90	10	280	31	171	65	13	5
Single-----	104	<u>76</u>	13	12	3	3	30	<u>20</u>	2	7	1	1
Married-----	920	23	<u>837</u>	32	28	4	186	6	<u>163</u>	12	5	1
Widowed-----	115	6	23	<u>77</u>	9	3	50	4	3	<u>41</u>	2	-
Divorced-----	67	-	11	6	<u>50</u>	-	14	1	3	5	<u>5</u>	2
Not stated ³ -----	10	2	7	1	-	-	5	-	2	2	-	1
45-54 years----	1,780	120	1,171	369	120	17	401	28	212	143	18	5
Single-----	131	<u>92</u>	18	17	4	-	40	<u>21</u>	2	16	1	1
Married-----	1,201	12	<u>1,100</u>	60	29	14	223	3	<u>190</u>	25	5	2
Widowed-----	359	15	<u>40</u>	<u>276</u>	28	2	126	3	<u>19</u>	<u>98</u>	6	1
Divorced-----	89	1	13	<u>16</u>	<u>59</u>	-	12	1	1	4	<u>6</u>	1
Not stated ³ -----	16	1	7	3	4	1	-	-	-	-	-	-
55-64 years----	2,258	91	1,174	897	96	24	743	45	346	326	26	11
Single-----	103	<u>68</u>	8	22	5	4	38	<u>24</u>	6	5	3	2
Married-----	1,208	8	<u>1,102</u>	78	20	11	358	5	<u>313</u>	37	3	7
Widowed-----	870	14	<u>56</u>	<u>768</u>	32	8	326	16	<u>25</u>	<u>278</u>	7	2
Divorced-----	77	1	8	29	<u>39</u>	1	21	-	2	6	<u>13</u>	-
Not stated ³ -----	23	2	13	6	2	-	7	-	2	5	-	-
65-74 years----	2,600	103	881	1,552	64	23	1,403	55	456	860	32	18
Single-----	122	<u>75</u>	3	42	2	-	56	<u>29</u>	4	22	1	2
Married-----	905	4	<u>832</u>	62	7	5	481	3	<u>413</u>	62	3	3
Widowed-----	1,511	23	42	<u>1,419</u>	27	17	836	22	36	<u>761</u>	17	12
Divorced-----	62	1	4	29	<u>28</u>	1	30	1	3	15	<u>11</u>	1
Not stated ³ -----	26	1	7	17	1	-	15	1	8	6	-	-
75-84 years----	1,646	71	287	1,267	21	24	1,171	45	227	887	12	17
Single-----	80	<u>57</u>	1	21	1	3	43	<u>23</u>	1	19	-	3
Married-----	302	-	<u>263</u>	37	2	-	227	7	<u>196</u>	23	1	4
Widowed-----	1,245	12	22	<u>1,200</u>	11	18	890	15	28	<u>840</u>	7	10
Divorced-----	19	2	1	9	<u>7</u>	1	11	-	2	5	<u>4</u>	-
Not stated ³ -----	23	-	4	17	-	2	14	1	1	12	-	-
85-99 years----	794	28	50	715	1	6	508	17	46	443	2	3
Single-----	35	<u>21</u>	-	14	-	1	18	<u>9</u>	1	8	-	-
Married-----	55	1	<u>40</u>	14	-	-	47	-	35	12	-	-
Widowed-----	695	6	10	<u>678</u>	1	5	443	8	10	<u>423</u>	2	3
Divorced-----	9	-	-	9	-	-	-	-	-	-	-	-
Not stated ³ -----	12	2	3	7	-	-	7	-	3	4	-	-

¹Excludes records with marital status not stated.

²Includes only those decedents with age reported in the same 10-year interval on the death certificate and matching census record.

³Includes a small number of records with punching errors (invalid codes) on marital status.

Table 2. Cross classification of race as stated on the death certificate and on the matching 100-percent census enumeration record (stage I), by geographic region and sex: United States, May-August 1960

Geographic region, sex, and race on census record	Race on death certificate								Race not valid
	Total	White	Negro	Indian	Japanese	Chinese	Filipino	All other races	
<u>NORTHEAST</u>									
<u>Male</u>									
Total-----	61,320	58,333	2,869	23	6	66	4	19	3
White-----	58,361	58,214	139	3	-	3	1	1	2
Negro-----	2,826	93	2,721	3	-	-	-	9	1
Indian-----	29	9	3	17	-	-	-	-	-
Japanese-----	6	-	-	-	6	-	-	-	-
Chinese-----	74	5	-	-	-	63	-	6	-
Filipino-----	15	9	1	-	-	-	3	2	-
All other races-----	9	3	5	-	-	-	-	1	-
Race not stated or not valid-----	273	255	17	-	1	-	-	-	-
<u>Female</u>									
Total-----	50,280	47,754	2,498	11	2	8	-	7	2
White-----	47,755	47,643	109	3	-	-	-	-	2
Negro-----	2,493	103	2,383	1	-	-	-	6	-
Indian-----	16	5	4	7	-	-	-	-	-
Japanese-----	2	-	-	-	2	-	-	-	-
Chinese-----	10	1	-	-	-	8	-	1	-
Filipino-----	3	2	1	-	-	-	-	-	-
All other races-----	1	-	1	-	-	-	-	-	-
Race not stated or not valid-----	249	233	16	-	-	-	-	-	-
<u>NORTH CENTRAL</u>									
<u>Male</u>									
Total-----	67,301	63,780	3,392	75	25	18	7	4	7
White-----	63,799	63,684	105	7	1	-	1	1	6
Negro-----	3,358	73	3,282	2	-	-	-	1	1
Indian-----	88	18	3	66	-	-	-	1	-
Japanese-----	26	1	-	-	24	1	-	-	-
Chinese-----	19	1	-	-	-	17	-	1	-
Filipino-----	7	2	-	-	-	-	5	-	-
All other races-----	4	1	2	-	-	-	1	-	-
Race not stated or not valid-----	410	382	27	-	-	1	-	-	-
<u>Female</u>									
Total-----	51,027	48,018	2,954	46	2	2	-	5	2
White-----	47,987	47,920	62	4	-	-	-	1	2
Negro-----	2,957	69	2,888	-	-	-	-	-	-
Indian-----	70	21	4	42	-	-	-	3	-
Japanese-----	2	-	-	-	2	-	-	-	-
Chinese-----	8	5	-	-	-	2	-	1	-
Filipino-----	1	1	-	-	-	-	-	-	-
All other races-----	2	2	-	-	-	-	-	-	-
Race not stated or not valid-----	264	250	14	-	-	-	-	-	-

Table 2. Cross classification of race as stated on the death certificate and on the matching 100-percent census enumeration record (stage I), by geographic region and sex: United States, May-August 1960—Con.

Geographic region, sex, and race on census record	Race on death certificate								Race not valid
	Total	White	Negro	Indian	Japanese	Chinese	Filipino	All other races	
<u>SOUTH</u>									
<u>Male</u>									
Total-----	60,141	48,087	11,928	105	4	13	1	3	3
White-----	48,137	47,975	149	11	-	-	1	1	3
Negro-----	11,861	87	11,773	1	-	-	-	-	-
Indian-----	115	18	4	93	-	-	-	-	-
Japanese-----	5	1	-	-	4	-	-	-	-
Chinese-----	16	2	1	-	-	13	-	-	-
Filipino-----	4	2	-	-	-	-	-	2	-
All other races-----	3	2	1	-	-	-	-	-	-
Race not stated or not valid-----	338	280	58	-	-	-	-	-	-
<u>Female</u>									
Total-----	43,030	32,942	10,021	59	3	3	1	1	1
White-----	32,903	32,806	86	6	2	1	1	1	-
Negro-----	10,050	119	9,931	-	-	-	-	-	1
Indian-----	69	14	2	53	-	-	-	-	-
Japanese-----	3	-	2	-	1	-	-	-	-
Chinese-----	2	-	-	-	-	2	-	-	-
Filipino-----	1	1	-	-	-	-	-	-	-
All other races-----	2	2	-	-	-	-	-	-	-
Race not stated or not valid-----	265	221	43	1	-	-	-	-	-
<u>WEST</u>									
<u>Male</u>									
Total-----	30,919	29,274	792	203	326	149	121	54	2
White-----	29,228	29,175	26	15	-	2	4	6	2
Negro-----	794	28	763	2	1	-	-	-	-
Indian-----	221	31	2	185	-	-	-	3	-
Japanese-----	330	2	-	-	323	2	1	2	-
Chinese-----	151	2	-	1	2	145	-	1	-
Filipino-----	136	14	1	-	-	-	116	5	-
All other races-----	59	22	-	-	-	-	-	37	-
Race not stated or not valid-----	256	169	5	1	2	3	-	76	-
<u>Female</u>									
Total-----	22,271	21,211	631	132	190	57	11	39	2
White-----	21,188	21,147	24	12	1	-	-	4	2
Negro-----	655	46	607	1	-	-	-	1	-
Indian-----	127	8	-	119	-	-	-	-	-
Japanese-----	192	3	-	-	187	-	-	2	-
Chinese-----	59	1	-	-	1	56	-	1	-
Filipino-----	19	5	-	-	-	1	11	2	-
All other races-----	31	1	-	-	1	-	-	29	-
Race not stated or not valid-----	165	111	5	2	-	1	-	46	-

Table 3. Cross classification of nativity as stated on the death certificate and on the matching 25-percent sample census record (stage II), by geographic region, race, and age for white decedents: United States, May-August 1960

Region, race, age, and nativity on census record	Nativity on death certificate					
	Total, male	Native-born	Foreign-born	Total, female	Native-born	Foreign-born
<u>NORTHEAST</u>						
<u>White</u>						
1 year and over-----	12,876	9,032	3,844	9,601	6,884	2,717
Native-born-----	9,284	8,960	324	7,080	6,821	259
Foreign-born-----	3,592	72	3,520	2,521	63	2,458
1-44 years-----	1,114	1,078	36	670	648	22
Native-born-----	1,080	1,077	3	651	647	4
Foreign-born-----	34	1	33	19	1	18
45-54 years-----	1,410	1,268	142	766	670	96
Native-born-----	1,275	1,261	14	678	666	12
Foreign-born-----	135	7	128	88	4	84
55-64 years-----	2,655	1,993	662	1,501	1,134	367
Native-born-----	2,049	1,980	69	1,150	1,124	26
Foreign-born-----	606	13	593	351	10	341
65-74 years-----	3,866	2,344	1,522	2,606	1,680	926
Native-born-----	2,436	2,313	123	1,738	1,652	86
Foreign-born-----	1,430	31	1,399	868	28	840
75-84 years-----	2,885	1,719	1,166	2,635	1,814	821
Native-born-----	1,794	1,699	95	1,895	1,799	96
Foreign-born-----	1,091	20	1,071	740	15	725
85 years and over-----	946	630	316	1,423	938	485
Native-born-----	650	630	20	968	933	35
Foreign-born-----	296	-	296	455	5	450
<u>Negro</u>						
1 year and over-----	504	471	33	421	394	27
Native-born-----	478	469	9	401	394	7
Foreign-born-----	26	2	24	20	-	20
<u>Other nonwhite</u>						
1 year and over-----	14	5	9	9	6	3
Native-born-----	8	5	3	6	6	-
Foreign-born-----	6	-	6	3	-	3

Table 3. Cross classification of nativity as stated on the death certificate and on the matching 25-percent sample census record (stage II), by geographic region, race, and age for white decedents: United States, May-August 1960--Con.

Region, race, age, and nativity on census record	Nativity on death certificate					
	Total, male	Native-born	Foreign-born	Total, female	Native-born	Foreign-born
<u>NORTH CENTRAL</u>						
<u>White</u>						
1 year and over-----	13,976	11,664	2,312	10,281	8,630	1,651
Native-born-----	11,856	11,631	225	8,798	8,621	177
Foreign-born-----	2,120	33	2,087	1,483	9	1,474
1-44 years-----	1,349	1,328	21	813	790	23
Native-born-----	1,331	1,325	6	794	790	4
Foreign-born-----	18	3	15	19	-	19
45-54 years-----	1,444	1,371	73	743	702	41
Native-born-----	1,375	1,369	6	707	702	5
Foreign-born-----	69	2	67	36	-	36
55-64 years-----	2,631	2,308	323	1,414	1,252	162
Native-born-----	2,333	2,305	28	1,265	1,251	14
Foreign-born-----	298	3	295	149	1	148
65-74 years-----	4,155	3,341	814	2,588	2,083	505
Native-born-----	3,381	3,331	50	2,119	2,075	44
Foreign-born-----	774	10	764	469	8	461
75-84 years-----	3,187	2,441	746	3,178	2,583	595
Native-born-----	2,516	2,431	85	2,643	2,583	60
Foreign-born-----	671	10	661	535	-	535
85 years and over-----	1,210	875	335	1,545	1,220	325
Native-born-----	920	870	50	1,270	1,220	50
Foreign-born-----	290	5	285	275	-	275
<u>Negro</u>						
1 year and over-----	623	620	3	505	501	4
Native-born-----	618	618	-	503	501	2
Foreign-born-----	5	2	3	2	-	2
<u>Other nonwhite</u>						
1 year and over-----	37	27	10	25	24	1
Native-born-----	29	27	2	23	23	-
Foreign-born-----	8	-	8	2	1	1

Table 3. Cross classification of nativity as stated on the death certificate and on the matching 25-percent sample census record (stage II), by geographic region, race, and age for white decedents: United States, May-August 1960—Con.

Region, race, age, and nativity on census record	Nativity on death certificate					
	Total, male	Native-born	Foreign-born	Total, female	Native-born	Foreign-born
<u>SOUTH</u>						
<u>White</u>						
1 year and over-----	10,481	9,875	606	6,863	6,456	407
Native-born-----	9,918	9,863	55	6,506	6,447	59
Foreign-born-----	563	12	551	357	9	348
1-44 years-----	1,368	1,357	11	714	700	14
Native-born-----	1,359	1,357	2	703	700	3
Foreign-born-----	9	-	9	11	-	11
45-54 years-----	1,207	1,177	30	531	520	11
Native-born-----	1,177	1,176	1	521	520	1
Foreign-born-----	30	1	29	10	-	10
55-64 years-----	1,969	1,888	81	946	890	56
Native-born-----	1,892	1,886	6	896	888	8
Foreign-born-----	77	2	75	50	2	48
65-74 years-----	2,684	2,480	204	1,670	1,554	116
Native-born-----	2,492	2,476	16	1,564	1,552	12
Foreign-born-----	192	4	188	106	2	104
75-84 years-----	2,373	2,168	205	2,064	1,904	160
Native-born-----	2,183	2,163	20	1,929	1,899	30
Foreign-born-----	190	5	185	135	5	130
85 years and over-----	880	805	75	938	888	50
Native-born-----	815	805	10	893	888	5
Foreign-born-----	65	-	65	45	-	45
<u>Negro</u>						
1 year and over-----	2,155	2,152	3	1,647	1,645	2
Native-born-----	2,151	2,151	-	1,645	1,643	2
Foreign-born-----	4	1	3	2	2	-
<u>Other nonwhite</u>						
1 year and over-----	24	23	1	19	19	-
Native-born-----	23	23	-	19	19	-
Foreign-born-----	1	-	1	-	-	-

Table 3. Cross classification of nativity as stated on the death certificate and on the matching 25-percent sample census record (stage II), by geographic region, race, and age for white decedents: United States, May-August 1960--Con.

Region, race, age, and nativity on census record	Nativity on death certificate					
	Total, male	Native-born	Foreign-born	Total, female	Native-born	Foreign-born
<u>WEST</u>						
<u>White</u>						
1 year and over-----	6,584	5,401	1,183	4,653	3,821	832
Native-born-----	5,477	5,388	89	3,916	3,819	97
Foreign-born-----	1,107	13	1,094	737	2	735
1-44 years-----	809	789	20	487	462	25
Native-born-----	789	786	3	468	462	6
Foreign-born-----	20	3	17	19	-	19
45-54 years-----	692	635	57	387	350	37
Native-born-----	640	634	6	355	350	5
Foreign-born-----	52	1	51	32	-	32
55-64 years-----	1,315	1,123	192	604	512	92
Native-born-----	1,139	1,121	18	519	510	9
Foreign-born-----	176	2	174	85	2	83
65-74 years-----	1,786	1,393	393	1,142	940	202
Native-born-----	1,408	1,391	17	952	940	12
Foreign-born-----	378	2	376	190	-	190
75-84 years-----	1,517	1,141	376	1,271	981	290
Native-born-----	1,171	1,141	30	1,021	981	40
Foreign-born-----	346	-	346	250	-	250
85 years and over-----	465	320	145	762	576	186
Native-born-----	330	315	15	601	576	25
Foreign-born-----	135	5	130	161	-	161
<u>Negro</u>						
1 year and over-----	184	183	1	120	120	-
Native-born-----	183	183	-	119	119	-
Foreign-born-----	1	-	1	1	1	-
<u>Other nonwhite</u>						
1 year and over-----	187	87	100	109	58	51
Native-born-----	94	87	7	61	58	3
Foreign-born-----	93	-	93	48	-	48

Table 4. Cross classification of country of origin as stated on the death certificate and on the matching 25-percent sample census record (stage II), by sex for white decedents classified as foreign-born on the census record: United States, May-August 1960

Sex and country of origin on census record		Country of origin on death certificate						
		Total	United Kingdom	Ireland	Norway	Sweden	Germany	Austria
<u>White male</u>								
1	Total-----	7,370	567	293	196	261	797	360
2	United Kingdom-----	630	<u>557</u>	58	-	-	1	1
3	Ireland-----	245	7	<u>233</u>	-	-	-	-
4	Norway-----	194	-	-	<u>194</u>	-	-	-
5	Sweden-----	255	-	-	2	<u>251</u>	-	-
6	Germany-----	795	-	-	-	-	<u>747</u>	4
7	Austria-----	325	2	-	-	-	9	<u>242</u>
8	Poland-----	724	-	-	-	-	15	33
9	Czechoslovakia-----	227	-	-	-	-	2	15
10	Hungary-----	171	-	-	-	-	2	15
11	Yugoslavia-----	142	-	-	-	-	-	13
12	Lithuania-----	106	-	-	-	-	-	-
13	Finland-----	70	-	-	-	2	-	-
14	U.S.S.R-----	646	-	-	-	-	2	24
15	Italy-----	1,202	-	-	-	-	-	-
16	Canada-----	546	-	-	-	-	-	-
17	Mexico-----	155	-	-	-	-	-	-
18	All other-----	937	1	2	-	8	19	6
<u>White female</u>								
19	Total-----	5,096	411	349	100	226	610	222
20	United Kingdom-----	467	<u>410</u>	52	-	-	-	-
21	Ireland-----	305	1	<u>297</u>	-	-	-	-
22	Norway-----	100	-	-	<u>100</u>	-	-	-
23	Sweden-----	226	-	-	-	<u>221</u>	-	-
24	Germany-----	633	-	-	-	-	<u>589</u>	5
25	Austria-----	203	-	-	-	-	-	<u>150</u>
26	Poland-----	471	-	-	-	-	9	6
27	Czechoslovakia-----	187	-	-	-	-	5	11
28	Hungary-----	129	-	-	-	-	-	20
29	Yugoslavia-----	74	-	-	-	-	-	12
30	Lithuania-----	101	-	-	-	-	-	-
31	Finland-----	88	-	-	-	-	-	-
32	U.S.S.R-----	382	-	-	-	-	2	7
33	Italy-----	655	-	-	-	-	-	-
34	Canada-----	472	-	-	-	-	-	-
35	Mexico-----	108	-	-	-	-	-	-
36	All other-----	495	-	-	-	5	5	1

Table 4. Cross classification of country of origin as stated on the death certificate and on the matching 25-percent sample census record (stage II), by sex for white decedents classified as foreign-born on the census record: United States, May-August 1960--Con.

Country of origin on death certificate											
Po-land	Czech-oslo-vakia	Hun-gary	Yugo-slavia	Lith-uania	Fin-land	U.S.S.R.	Italy	Canada	Mexico	All other	Native U.S.A.
654	212	182	131	106	68	642	1,206	529	152	886	128
-	-	-	-	-	-	-	-	1	-	2	10
-	-	-	-	-	-	-	-	-	-	-	5
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	1	-	-	-	-	-	1
1	-	7	-	7	-	10	-	-	-	4	15
15	18	8	8	-	-	7	-	-	-	11	5
609	-	-	2	2	-	37	5	-	-	-	21
2	192	6	5	-	-	-	-	-	-	4	1
1	-	148	1	-	-	-	1	-	-	2	-
-	2	5	115	-	-	-	-	-	-	1	-
3	-	-	-	92	-	8	-	-	-	2	1
-	-	-	-	-	67	-	1	-	-	-	-
22	-	5	-	5	-	558	-	-	-	11	19
-	-	-	-	-	-	-	1,187	-	-	7	8
1	-	-	-	-	-	1	-	528	-	-	16
-	-	-	-	-	-	-	-	-	152	-	3
-	-	3	-	-	-	21	12	-	-	842	23
476	178	107	73	111	88	353	659	460	106	484	83
-	-	-	-	-	-	2	-	-	-	1	2
-	-	-	-	-	-	-	5	-	-	-	2
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	5
18	-	-	-	2	-	2	-	-	-	5	12
9	14	-	10	-	-	2	1	-	-	-	7
425	2	-	-	1	-	23	-	-	-	-	5
-	156	7	-	-	-	-	-	-	-	3	5
1	3	98	2	-	-	-	-	-	-	3	2
-	3	-	58	-	-	-	-	-	-	1	-
-	-	-	-	99	-	1	-	-	-	-	1
-	-	-	-	-	88	-	-	-	-	-	-
23	-	-	-	9	-	312	-	-	-	22	7
-	-	-	-	-	-	-	649	-	-	-	6
-	-	-	-	-	-	-	-	455	2	-	15
-	-	-	-	-	-	-	-	-	104	1	3
-	-	2	3	-	-	11	4	5	-	448	11

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