State of Connecticut

Department of Public Health

ONE HUNDRED AND FORTY-FIFTH

REGISTRATION REPORT

of

BIRTHS, MARRIAGES, DIVORCES AND DEATHS

for the

YEAR ENDING DECEMBER 31, 1992

Issued by

THE CONNECTICUT DEPARTMENT

OF

PUBLIC HEALTH

HARTFORD, CT

Published by the State

November, 1995

Price: $10.00

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INTRODUCTION

The Annual Registration Report of Vital Statistics, 1992, is a statistical summary of vital events for the State of Connecticut. The State's vital statistics database contains records pertaining to five types of events: births; deaths; fetal deaths; marriages; and divorces.

Certain qualifications must be made with regard to the data contained herein, and should be kept in mind when examining the data tables:

Completeness of Registration

The Connecticut Department of Public Health reciprocates with other states and the provinces of Canada in exchanging copies of birth and death records for non-residents. Registration of births in Connecticut is essentially 100% complete, and there is virtually no under-reporting of deaths. Because there is no interstate transfer of marriage, divorce, or fetal death records, it is not possible to determine the completeness of registration of these events to Connecticut residents.

Comparability of Cause-of-death Data

The system for classifying cause of death, the *International Classification of Diseases* (ICD), is revised every ten years to reflect changes in medical practices and new medical knowledge. Each revision results in a degree of discontinuity in cause-of-death statistics. A ratio of comparability must be used to adjust for changes in classification from one ICD revision to another. Causes of death in 1992 were coded using the ninth revision of the ICD, which became effective in 1979, and using the *Addendum to the International Classification of Diseases Ninth Revision* for the Classification of Human Immunodeficiency Virus infection.

Comparison of Rates and Percentages

Caution should be used in drawing conclusions based on rates or percentages that were calculated from small numbers of events. Due to the instability of these figures, the data tables do not display rates or percentages where the number of related events is less than five. *Readers should note that percentages based on birth data exclude records from which information about the characteristic of interest was missing.*

Reporting by Local Health Districts

Summary statistics are reported for multi-town Local Health Districts in several tables. Reporting by local health district may enable local health agencies to better understand and serve their resident populations. The towns in each health district reflect membership as of Spring, 1995, and are listed in Appendix II.

Recent Changes in Reporting of Mother's Race and Ethnicity for Births

The race and ethnicity classifications used to present information derived from birth records were modified in the 1991 *Registration Report*. In the 1988-1990 *Registration Reports*, the mother's race on birth record was categorized without regard to ethnicity, such that a single birth could be counted twice in the report (e.g., as white or black *and* as Hispanic or non-Hispanic). In the modified method, there are three mutually exclusive groups: white non-Hispanic; black non-Hispanic; and Hispanic.* These categories are consistent with those used by the National Center

for Health Statistics, Centers for Disease Prevention and Control, thus allowing Connecticut statistics to be compared with national figures. (See the 1991 *Registration Report* for further explanation of this change.)

For readers who are interested in birth tabulations based on the mother's race/ethnicity classification used in prior years, comparable data are given in Appendix V. This appendix contains figures for the eight towns with 1,000 or more births, presented in the same format as Table 4 ("Connecticut Resident Births, 1992"). These eight towns accounted for about 77% of births to Hispanic mothers, but only 33% of all resident births in 1992.

For Further Information

The reader is referred to the Glossary at the end of this report (Appendix III) for definitions of the technical terms used in this document. Supplemental 1992 tables containing town-specific information in the format of Table 8 (Infant Mortality) and Table 9 (Mortality, by Age) also are available. Additional 1992 vital statistics data are included in the *AVSS Advance Natality Report for Connecticut Residents, January-December 1992 Birth Data*. The supplemental tables and other publications can be obtained from the Connecticut Department of Public Health.

***** Table 2B is an exception to the general use of the composite race/ethnicity in the classification of birth data. Birth figures for this table were tabulated with separate race and ethnicity classifications (i.e., *white, black,* and *Hispanic*). This classification structure was retained to enable direct comparability with death data, which are given in the same table, and to make it easier for readers to compute mortality rates.

POPULATION

Age and Sex

The estimated July 1, 1992 population in Connecticut was 3,280,960 [1], which is 6,156 (0.2%) lower than the July 1, 1990 estimate of 3,287,116. Of the total population, 1,589,472 were males and 1,691,488 were females. In the age groups from <1 year through 20-24 years, the number of males exceeded that of females. In all subsequent 5-year age cohorts, however, the opposite was true; by ages 75-79, 80-84, and 85+ years, females outnumbered males by about 3:2, 2:1, and 3:1, respectively (Table 1, Fig. 1).

Towns

Between 1990 and 1992 the populations of larger towns generally decreased, whereas populations of smaller towns increased. Compared to the 1990 estimated populations, the 1992 estimated populations were lower in 61 towns, higher in 44 towns, and unchanged in four towns. Mansfield had the largest percent decrease in population (-7.0%) and Canaan had the largest percent increase (6.9%). Bridgeport lost the most people (-2,526) and Hartford gained the most (2,830). Among the five towns with populations over 100,000, the estimated populations of four towns decreased (New Haven, -1.9%; Bridgeport, -1.8%; Waterbury, -1.7%; Stamford, -0.7%), whereas the estimated population of Hartford increased by 0.2%.

BIRTHS

Demographic Factors

Town of Residence. The total number of live births to Connecticut residents was 47,574. This represents a decrease of 968 live births or 2% from 1991. The birth rate also decreased from 14.8 per 1,000 population in 1991 to 14.5 in 1992 (Table 2A).

In 1992, the town-specific birth rates ranged from a high of 24.8 per 1,000 population in Canaan to a low of 6.4 in Mansfield. The birth rates for 47 towns exceeded the State rate of 14.5 per thousand population. Eight towns registered more than 1,000 births during the year, accounting for 33% of all births in the state (Table 2A). In six of these towns, however, both the number and rate of births was lower than in 1991. They were Hartford (3,028 or 21.6 per 1,000), Bridgeport (2,815 or 20.2 per 1,000), New Haven (2,221 or 17.4 per 1,000), New Britain (1,199 or 16.2 per 1,000), Stamford (1,807 or 16.8 per 1,000), and Waterbury (2,000 or 18.7 per 1,000).

Mother's Race and Ethnicity. There were 32,750 births to white non-Hispanic mothers, and 5,302 births to black non-Hispanic mothers, representing 68.8% and 11.1% of the total resident births, respectively. There were 5,576 births to mothers of Hispanic origin, 11.7% of the total number of resident births (Table 3).

Place of Delivery. All but 218 (0.5%) of the total resident births occurred in hospitals (Table 3). Nine out of ten of the non-hospital deliveries were home births (Table 3).

Sex. Of the total live births, 51.1% were male and 48.9% were female (Table 3).

Live Birth Order and Plurality. Of babies delivered in 1992, (38.1%) were first-born; 30.2% were second-born, and 20.7% were third-born or more. In the remaining 11% of deliveries, the birth order was not known. Of the total births, only 1,302 (2.7%) were multiple births (Table 3).

Presumptive Marital Status of Mother. In Connecticut, the marital status of the mother is inferred by the following rule: a mother is classified as "married" if her surname is exactly the same as the father's surname on the birth record, or if the father's and child's surnames are the same when the mother's name is missing from the record [3]. Based on this definition, in 1992, 13,690 resident births, or nearly three out of ten, were to unmarried mothers (Table 3).

Mother's Age. Mothers in the age range 20 to 34 accounted for 78.6% of all 1992 births (Tables 3). Of the 5-year age groups within this range, the greatest percentage (30.6%) of total resident births were to women aged 25 to 29 years, 29.9% were to women aged 30 to 34 years, and 18.0% were to women aged 20 to 24. Eight percent of the births were to women under age 20, including 121 births to mothers less than 15 years old, and 13.3% were to women aged 35+ years, 838 of which were to women age 40 and over. Most of the older (35+ years) mothers were white non-Hispanic, whereas most of the younger (<20 years) mothers were black non-Hispanic and Hispanic.

Low Birth Weight

Overall, 3,269 or 6.9% of all births in the State in 1992 were of low birth weight (<2,500 grams) (Table 4); this proportion was unchanged from 1991. The risk of low birthweight delivery was

not distributed evenly across all communities, and varied dramatically within the risk groups identified in Table 3. Substantial variation in low birth weight occurred within categories defined by mother's race/ethnicity, sex of baby, plurality of births, mother's age, mother's education, timing and adequacy of prenatal care, and town of residence, as noted below.

Race/Ethnicity. The percentage of resident low birthweight deliveries to white non-Hispanic, black non-Hispanic, and Hispanic mothers, respectively, were 5.3%, 14.1% and 9.1%, respectively (Table 3). Black non-Hispanic mothers thus had 2.7 times the risk of white non-Hispanic mothers and 1.5 times the risk of Hispanic mothers to deliver low birthweight babies.
Sex. Female babies were more likely than male babies to have low birth weight. This was true for births to women of all races/ethnicities except "other, non-Hispanic" (Table 3).
Plurality. Multiple births were nine times more likely than singleton births to be of low birth weight (51.6% vs. 5.7%, respectively) (Table 3).

Mother's Age. Overall, higher percentages of low birth weight were found among mothers less than 18 years old. Among 15, 16 and 17 year-old mothers, these percentages were 10.5%, 11.8% and 10.9%, respectively. In contrast, only about 6% of deliveries to women aged 25 to 34 were of low birth weight. High percentages of low birth weight deliveries were reported among black, non-Hispanic mothers of all ages (Table 3).

Mother's Education. Overall, regardless of race and ethnicity, mothers who were college educated, and those with post-college education had the lowest percentages of low birthweight deliveries (5.4% and 5.5%, respectively). Mothers who only completed high school or had less than 12 years of education had the highest percentages, 8.5% (Table 3).

Initiation of Prenatal Care. The trimester of pregnancy in which women begin prenatal care is a strong indicator of risk of low birth weight. Generally, the later the prenatal care begins, the greater the likelihood of low birthweight deliveries. In 1992, four times as many women who received no prenatal care delivered low birthweight babies as did women who began care during the first trimester of pregnancy (25.8% and 6.3%, respectively) (Table 3).

Adequacy of Prenatal Care. Adequacy of prenatal care, as defined by a modified Kessner Index (see Appendix III), is a measure involving the timing of the first prenatal visit, the total number of visits and the length of gestation. The highest risk subgroup, "inadequate care," had 3.7 times as many low birthweight deliveries as the lowest risk subgroup, "adequate care" (19.9% and 5.4%, respectively) (Table 3).

Town of Residence. Low birth weight varied greatly across communities within Connecticut (Table 4). In towns with 1,000 or more births, there was a two-fold difference between the towns with the lowest and highest percentages (Stamford, 6.4% and Hartford, 13.3%). The percentages of low birth weight deliveries in the remaining towns in this group were: New Haven, 11.1%; Bridgeport, 9.2%; New Britain, 9.0%; Waterbury, 9.0%; Danbury, 7.1%; and Norwalk, 6.8%. These eight towns accounted for 1,479 low birthweight deliveries, or 45.2% of the state total.

Premature Births

The percent of resident premature births (<37 weeks of gestation) for 1992 was 9.1% for all mothers, down from 9.3% in 1991 (Table 3) [2]. Substantial variation occurred within the categories defined by mother's race/ethnicity, plurality, mother's age, mother's education, timing of prenatal care, adequacy of prenatal care, and town of residence. These differences are similar

to those noted for low birthweight deliveries. Overall, 6.2% of the records were missing information on prematurity.

Race/Ethnicity. The percentages of premature births were: white non-Hispanic, 7.7%; black non-Hispanic, 15.1%; and Hispanic, 11.9% (Table 3).
Sex. The risk of premature birth was slightly higher for male babies (9.3%) than for females (9.0%) (Table 3).

Place of Delivery. Premature babies were more likely to be delivered in hospitals than at home (9.1% and 6.4% premature births, respectively) (Table 3).
Plurality. The risk of a premature birth was six times higher for multiple births (48.5%) than for singleton births (8.0%) (Table 3).

Mother's Education. Premature delivery was 42-44% more frequent for mothers who had 12 years or less of education than for college-and post-college-educated mothers (10.8, 7.6, and 7.5%, respectively) (Table 3).

Mother's Age. Higher percentages of premature births were found among mothers under 19 years of age and in the 40-44 year age group, and among black, non-Hispanic mothers of all ages (Table 3). Among 15-18 year-old mothers, the percentages were 17.1%, 14.3% ,15.7% and 12.8%, respectively. Relative to women who had the lowest rate of premature deliveries (ages 30-34, 8.3%), the figures for women 15 to 18 years old were 1.5 to 2 times higher.

Initiation of Prenatal Care. Compared to women who began prenatal care in the first trimester of gestation, the risk of premature delivery was four times greater for those who received no prenatal care and twice as great for those who began prenatal care during the last trimester (8.3%, 33.2%, and 16.8% prematurity, respectively) (Table 3).

Adequacy of Prenatal Care. Disparity was also evident by adequacy of prenatal care. Women who received inadequate care had 3.7 times more premature deliveries than those who received adequate care (28.6% and 7.7%, respectively) (Table 3).

Births to Teenage Mothers

In 1992, 8.0% of all live resident births were to teenage mothers (<20 years of age) (Table 4). With regard to race/ethnicity, teenage mothers accounted for 3.9% of all white non-Hispanic births and 17.8% of all black non-Hispanic births. With regard to Hispanic ethnicity, the percentage of teenage women accounted for 23.5% of all births to Hispanic women but only 5.8% of births to non-Hispanic women.

Of the eight towns with 1,000 or more births, those that exceeded the statewide percent of births to teens were: Hartford, 23.5% (the highest in the state); Bridgeport, 17.9%; New Haven, 16.9%; Waterbury, 13.7%; and New Britain, 13.6%. These five towns accounted more than half (53.1%) of all births to teenage mothers, but less than one-fourth (23.7%) of all births (Table 4). The remaining three towns with 1,000 or more births, Stamford, Danbury, and Norwalk, were well below the state value (5.5%, 6.2% and 6.4%, respectively).

Prenatal Care

Initiation of Prenatal Care. The percent of births to Connecticut mothers who received late prenatal care (that which began in the second or third trimester of gestation) or no prenatal care was 12.6%, down from 13.7% in 1991. The percentages for white non-Hispanic, black non-Hispanic, and Hispanic mothers were 8.3%, 27.1%, and 25.1% respectively, all of which were lower than the 1991 values (Table 4).

Of the eight towns with 1,000 or more births, six exceeded the state value for percent of women who had late or no prenatal care. They were: Waterbury, 36.0%; New Haven, 25.9%; Stamford, 22.3%; Norwalk, 21.2%; Hartford, 18.6%, and Bridgeport, 15.0% (Table 4). These towns accounted for 47.2% of births to women who received late or no prenatal care but only 27.8% of total resident births in 1992. Danbury (7.9%) was well below the state value, and New Britain (12.4%) was just slightly lower. Overall, 3,597 (7.6%) of the birth records were missing information on when prenatal care was begun (Table 3).

Adequacy of Prenatal Care. Overall, 19.8% of resident births were to mothers who received non-adequate (i.e., intermediate or inadequate) prenatal care (Table 4); this was down from 20.7% in 1991. By mother's race and ethnicity, the percentages of resident births with non-adequate prenatal care were: 13.2% for white non-Hispanics; 41.2% for black non-Hispanics; 17.1% for all non-Hispanics; and 41.6% for Hispanics.

Of the eight towns with 1,000 or more births, Danbury had about half the state value with 9.6%, and the other seven towns had values higher than the state percent of births to women with non-adequate prenatal care. They were: Bridgeport, 61.5%; Waterbury, 39.1%; New Haven, 33.4%; Stamford, 26.3%; Hartford, 25.8%; Norwalk, 23.3%; and New Britain, 23.0% (Table 4). These towns accounted for 50.3% of births to CT women who received non-adequate prenatal care but only 30.4% of total resident births. Overall, 12.5% of the birth records were missing information needed to determine adequacy of prenatal care (Table 3).

INFANT DEATHS

In 1992 there were 362 resident infant deaths, yielding an overall infant mortality rate of 7.6 deaths per 1,000 live births. The neonatal mortality rate (based on 262 deaths to infants less than 28 days old) was 5.5 deaths per 1,000 live births; 72.4% of infant deaths occurred during this period. The postneonatal mortality rate (based on 100 deaths to infants 28 days to less than 1 year old) was 2.1 deaths per 1,000 live births (Table 2A). All three infant mortality measures were slightly higher than the 1991 rates.

Infant's Race

Infant mortality rates are based on two race-specific components: births, which reflect the race of the *mother*; and deaths, which reflect the race of the *infant*. In 1992, infant mortality rates varied substantially by race. There were 248 deaths to infants of white race, for a rate of 6.3 per 1,000 live births (up 0.1 from the 1991 rate), 107 deaths to infants of black race, for a rate of 17.9 per 1,000 (up 3.0 points from the 1991 rate), and 44 deaths to infants of Hispanic ethnicity. The mortality rate for Hispanic infants was not calculated because of considerable under-reporting of ethnicity on infant death certificates [4].

Town of Residence

In 1992, seven towns reported ten or more resident infant deaths. They were: Hartford, 43; Bridgeport, 34; New Haven, 32; Waterbury, 21; Stamford, 14; Groton, 11; and West Haven, 10. Together, these towns accounted for 45.6% of infant deaths but only 28.6% of resident births. All seven towns had increases in infant deaths over the numbers reported for 1991.

Leading Causes of Infant Death

Since 1991, the classifications for leading cause of infant death in Connecticut have been based on the standard groupings used by the National Center for Health Statistics (NCHS) [5]. The top three leading causes of infant death among Connecticut residents of all races combined were "Congenital anomalies," "Disorders relating to short gestation and unspecified low birthweight," and "Sudden infant death syndrome," respectively (Table 8). The leading causes differed, however, for each racial and ethnic subgroup (see below).

Rank order of leading causes of infant death by race and ethnicity, Connecticut, 1992.

Cause of Death	Race/Ethnicity			
	All	White	Black	Hispanic
Congenital anomalies	1	1		1
Disorders relating to short gestation or unspecified low birthweight	2	2	1	2
Sudden infant death syndrome	3		2	
Other respiratory conditions of newborn		3		3
Newborn affected by maternal complications of pregnancy			3	

FETAL DEATHS

There were 285 fetal deaths to Connecticut residents in 1992, for a statewide rate of 6.0 per 1,000 live births (Table 2A); this represents a decrease of 13% from the 1991 rate of 6.9 per 1,000.

Town of Residence

Among the eight towns with 1,000 or more births, six had fetal death rates that exceeded the state rate. They were: Bridgeport, 13.1 per 1,000 live births; Stamford, 10.5 per 1,000; New Britain, 10.0 per 1,000; Hartford, 7.6 per 1,000; Danbury, 7.1 per 1,000; and New Haven, 6.3 per 1,000 (Table 2A). These towns accounted for 39.6% of fetal deaths but only 25.6% of live births in the state. Of the remaining towns with 1,000 or more births, the fetal death rate for Waterbury was the same as the state rate, and the rate for Norwalk could not be calculated because there were less than five deaths.

Low Birth Weight and Premature Delivery

A majority of the resident fetal deaths (79.2%) were of low birth weight (<2,500 grams). The percent with low birth weight for mothers of white race, black race, and Hispanic ethnicity were 75.6%, 87.3%, and 82.6%, respectively (Table 5). Overall, 79.4% of the resident fetal deaths were delivered prematurely (<37 weeks of gestation) [6].

Leading Causes of Fetal Death

The three leading causes of fetal death, regardless of the mother's race or Hispanic ethnicity, were: "Fetus affected by complications of placenta, cord and membranes" (75 deaths); "Other and ill-defined and conditions originating in the perinatal period" (51 deaths); and, "Other and ill-defined and unknown causes of morbidity and mortality" (48 deaths) (Table 6). "Disorders relating to short gestation and unspecified low birth weight" also was the third leading cause of fetal deaths to Hispanic mothers. These categories are based on the standard groupings used by the National Center for Health Statistics [5].

DEATHS
(All Ages**)**

The total number of deaths among Connecticut residents in 1992 was 28,224, for a crude death rate (i.e., not adjusted for age) of 8.6 deaths per 1,000 population (Table 2A). Of the total number of resident deaths, 14,047 were males and 14,177 were females (Table 9).

Town of Residence

Four towns reported 1,000 or more deaths in 1992. Waterbury had the highest crude death rate (11.4 per 1,000 population), followed by, Bridgeport (10.5 per 1,000), New Haven (10.1 per 1,000), and Hartford (8.9 per 1,000) (Table 2A).

Median Age at Death

Total resident deaths were examined by age of decedent for each sex, race, and ethnicity (Table 9). There were 15,529 deaths of persons aged 75 years and over, representing 55% of total resident deaths in 1992. The median age at death (see Appendix III for definition) was 77 years for both sexes combined (up 1 year from the 1991 median), 73 years for males, and 80 years for females (both unchanged from the 1991 median ages). Age at death varied dramatically by race and ethnicity. The 1992 median age at death was 77 years for whites, 64 years for blacks (up from 63 years in 1991) and 56 years for Hispanics (down 1 year from the 1991 median).

Leading Causes of Death

The five leading causes of death in 1992 for persons of all ages and independently within each age and sex group are ranked in Table 10. In order of their proportional share of the total number of deaths, they were: 1) "Diseases of the heart;" 2) "Malignant neoplasms;" 3) "Cerebrovascular disease;" 4) "Chronic obstructive pulmonary disease" (COPD); and 5) "Pneumonia and influenza." The same leading causes were among the top five in 1991, except the rankings of COPD and pneumonia and influenza were reversed.

Age and Sex. Total deaths by age and the leading cause of death by age and sex are summarized below.

Leading causes of death by age and sex, Connecticut, 1992.

	Sex			Total Deaths by Age	
Age	**Both**	**Male**	**Female**	**No.**	**%**
<1	Congenital anomalies	Congenital anomalies	Congenital anomalies	362	1.3
1-4	Unintentional injuries	Unintentional injuries	Diseases of the heart	53	0.2
5-9	Unintentional injuries	Unintentional injuries	(a)	23	0.1
10-14	Unintentional injuries	Unintentional injuries	(b)	33	0.1

continued on next page

	Sex			Total Deaths by Age	
Age	**Both**	**Male**	**Female**	**No.**	**%**
15-19	Unintentional injuries	Unintentional injuries	Unintentional injuries	116	0.4
20-24	Unintentional injuries	Unintentional injuries	Unintentional injuries	199	0.7
25-34	Unintentional injuries	Unintentional injuries	HIV infection	612	2.2
35-44	Malignant neoplasms	HIV infection	Malignant neoplasms	1,062	3.8
45-54	Malignant neoplasms	Diseases of the heart	Malignant neoplasms	1,417	5.0
55-64	Malignant neoplasms	Malignant neoplasms	Malignant neoplasms	2,783	9.9
65-74	Malignant neoplasms	Diseases of the heart	Malignant neoplasms	6,035	21.4
75-84	Diseases of the heart	Diseases of the heart	Diseases of the heart	8,191	29.0
85+	Diseases of the the heart	Diseases of the heart	Diseases of heart	7,338	26.0
All ages	Diseases of the heart	Diseases of the heart	Diseases of the heart	28,224	100.0

(a) Each of the nine deaths in this group (females, 5-9 years old) was attributed to a different cause; hence, there was no single leading cause of death, *per se*.
(b) Unintentional injuries was tied with malignant neoplasms as the leading cause of death (two deaths each) for females aged 10-14 years.

Ages 1-34 Years. "Unintentional injuries" was the leading cause of death for both sexes combined and for males alone within the six age groups after infancy (1-4 through 25-34 years). "Motor vehicle accidents" was the most frequent cause of such injuries. This was also true for females in the three age groups from 10 to 24 years.

"Homicide and legal intervention" was the second leading cause of death for 15-19 year olds of both sexes and for 20-24 year old males. Infection with Human Immunodeficiency Virus (HIV) was the second leading cause of death of 20-24 year old females and 25-34 year old males, and for the first time in Connecticut, it became the leading cause of death of females aged 25-34. The groups within the 1-34 year age interval accounted for 3.7% of total deaths.

Ages 35-74 Years. In the next four consecutive age groups (35-44, 45-54, 55-64, 65-74 years), the leading cause of death for both men and women (combined), was "Malignant neoplasms," the same as in 1991. The pattern was identical for females in this age range, but not for males. For the second consecutive year, the leading cause of death among males 35-44 years old was "Human immunodeficiency virus (HIV) infection." "Diseases of the heart" claimed the most lives of males aged 45-54 and 65 to 74 years, and "Malignant neoplasms" was the leading cause of death for 55-64 year old males. In the 35-44 year groups, the most frequent cause of cancer deaths was "Female breast cancer;" "Lung cancer," however, caused the most cancer deaths of both males and females between the ages of 45 and 74. The groups within the 35-74 year age interval accounted for 41.3% of total deaths.

Ages 75+ Years. For age groups 75-84 and 85 years and older, the primary cause of death was "Diseases of the heart." This was true for both sexes combined and for men and women individually. "Ischemic heart disease" was the largest component within this cause-of-death category, accounting for six of every ten deaths. The 75+ year age groups accounted for 55.0% of total deaths in 1992.

Patterns of Age-adjusted Mortality Rates: 1970, 1975, and 1980-1992

All Causes of Death. Trends in age-adjusted mortality rates (AAMRs) from 1970 to 1992, for all causes and for 15 selected causes of death are shown in Figures 2-6 and Appendix IV. Age-adjusted rates, rather than crude rates, were used so that populations with different age distributions could be compared. (See Appendix III, *Glossary*, for definitions of death rates.) Mortality rates were adjusted to the 1970 U.S. standard million population, using the direct method [7].

The overall mortality rate ("All Causes") followed a progressive downward trend during the past 22 years, from a high of 854.6 deaths per 100,000 population in 1970 to a low of 612.3 in 1992, a decrease of 242.3 deaths per 100,000 population (Fig. 3).

Human Immunodeficiency Virus (HIV) Infection. Specific codes to classify human immunodeficiency virus (HIV) infection as a cause of death did not exist until 1987; hence, mortality data are not available for earlier years. Between 1987 and 1992, the AAMR for "HIV infection" increased by a factor of 2.7, from 3.8 to 10.2 deaths per 100,000 population, surpassing the rates for "Motor vehicle accidents," "Septicemia," "Suicide and self-inflicted injuries," "Chronic liver disease and cirrhosis," "Nephritis and nephrotic disease," "Atherosclerosis," and "Homicide and legal intervention." Between 1991 and 1992, alone, the rate increased by 20%, making "HIV infection" the cause of death with the largest percent increase in AAMR that year.

Other Selected Causes of Death. Age-adjusted mortality rates for four causes of death, "Chronic obstructive pulmonary disease (COPD)," "Septicemia," "Nephritis and nephrotic disease," and "Homicide and legal intervention," increased between 1970 and 1992. The rate for COPD was its highest since 1980, whereas the rates for the latter two causes decreased slightly between 1991 and 1992. The largest AAMR increase was for "Septicemia," which rose by 388%, from 1.7 to 8.3 deaths per 100,000 population, since 1970.

The AAMRs for five causes of death fell to their lowest level in 22 years in 1992. They were: "Diseases of the heart," 199.2 per 100,000 population; "Cerebrovascular disease," 33.5; "Motor

vehicle accidents," 9.6; "Chronic liver disease and cirrhosis," 7.3; and "Atherosclerosis," 3.4. The largest rate decrease between 1970 and 1992 was recorded for "Diseases of the heart," which fell 136.9 points, from 336.1 to 199.2 deaths per 100,000 population. The largest decrease as a percentage of the 1970 rate, however, was for "Atherosclerosis," which dropped by 75.4% from 13.8 to 3.4. "Cerebrovascular disease" also fell substantially between 1970 and 1992 by 62 points, from 95.5 to 33.5 deaths per 100,000 population, which is a decline of about 64.9%. Between 1980 and 1992, "Diseases of the heart" accounted for the largest decline in rates, dropping 69.8 from 269.0 to 199.2 deaths per 100,000 population, and "Cerebrovascular disease" had the second largest rate decrease--19.1--from 52.6 to 33.5 deaths per 100,000 population.

The AAMRs for five causes of death have been relatively constant during the past 5-10 years. They are "Malignant neoplasms," "Pneumonia and influenza," "Unintentional injuries," "Diabetes mellitus," and "Suicide and self-inflicted injury."

MARRIAGES

Marriage Rate

In 1992, there were 23,698 marriages in Connecticut (Table 11). This was the lowest number since 1977. The number of marriages in Connecticut has been declining since it reached an all-time high of 27,892 in 1988. The 1992 total represents a crude marriage rate of 14.4 persons per 1,000 population, down from the 1991 rate of 15.0 per 1,000.

Number of Prior Marriages and Prior Marital Status

In 16,843 marriages (71.1%), the bride had never been married before, and in 16,927 (71.4%), the groom was marrying for the first time (Table 11). Sixty percent or 14,184 of all the marriages, were between individuals marrying for the first time, and 11.3% or 2,683 were between individuals marrying for a second time. Sixteen brides and 19 grooms had been married five or more times previously. Twenty-six percent of the brides and grooms had been divorced previously, and 2% were widowed (Table 12).

Town of Registration

Eight towns each registered more than 500 marriages in 1992. They were Hartford (1,284), New Haven (942), Bridgeport (906), Stamford (804), Waterbury (717), Norwalk (539), Danbury (531), and Greenwich (512). No marriages were registered in the towns of Andover, Middlefield, or Thomaston (Table 2A).

DIVORCES

Divorce Rate

There were 11,932 divorces in Connecticut in 1992 (one for every two marriages), for a crude divorce rate of 7.3 persons per 1,000 population (Table 13A). This was slightly higher than the 1991 rate of 7.0 per 1,000.

Grantees and Minor Children

Sixty-six percent of all divorces were granted to the wife, and 33% to the husband (Table 13B). Half of the divorces occurred in families with children under the age of 18; at least 10,164 minor children were affected by divorces (Table 14).

Duration of Marriages

The duration of marriage is estimated by subtracting the year the marriage was contracted from the year it was dissolved. The median duration of marriages that terminated in 1992 was 8.0 years, which is the same as the median duration reported annually since 1986. Marriages of 4 years duration had the greatest number of divorces (966). Thirty-three percent of the divorces during 1992 occurred within the first 5 years of marriage, and 61% within the first 10 years; 16.3% of the divorces occurred after marriages of 20 or more years (Table 15).

NOTES

[1] *Estimated Populations in Connecticut as of July 1, 1992*. Hartford: Connecticut Department of Public Health and Addiction Services, September, 1993.

[2] Gestational age is calculated using the date of the last menstrual period (LMP) or the clinical estimate of gestational age, if the LMP is not available. Gestational age could not be calculated for 2,943 (6.2%) of the resident births in 1992.

[3] Connecticut birth records do not include a "marital status" item. The *Connecticut General Statutes* prohibit asking this question on the birth record. The proxy "marital status" indicator is based on the matching of the mother's and father's surnames, with the classification "married" assigned when there is an exact match or when the father's and child's names match but the mother's name is missing. This method may be of limited validity in the Connecticut population, because it assumes that married women who do not adopt their husbands' surnames are unmarried.

[4] Analysis of 1989 infant mortality data from a linked birth-death file indicated under-reporting of Hispanic ethnicity by about 50% in standard, calendar-year tabulations.

[5] The adoption of the NCHS classifications for ranking infant death allows readers to make comparisons with national statistics more easily. The standard cause-of-death categories used by NCHS for infants are different than those used for older age groups. (See, for example, p. 104, Table 34, "Leading causes of death and numbers of deaths, according to age: United States, 1980 and 1992," in *Health, United States, 1994*, National Center for Health Statistics, Hyattsville, Maryland, Public Health Service, 1995.) Also, the NCHS classifications tend to be more narrow and specific than the categories used in prior Connecticut vital statistics reports. For example, the NCHS classification breaks the large category used in prior reports, "Conditions originating in the perinatal period" (760-779), into smaller components noted in Table 10 (separate categories are defined for codes 761, 762, 765, and 769).

[6] At this time these statistics may be unreliable because close to half (44%) of the 1992 fetal death records were missing information about gestational age needed to assess prematurity.

[7] Age-adjusted mortality rates for 1970 and 1980-1992 were calculated using 10-year age intervals, following the direct method. (Fleiss, J.L. *Statistical Methods for Rates and Proportions*, pp. 224-247. New York: John Wiley & Sons, 1981.)
The direct method of adjustment requires age-and sex-specific population figures. Population data for different time periods were obtained from different sources, as noted below.

a) The 1970 rate denominators were published in the Connecticut *Registration Report* for 1970.

b) The 1980 rate denominators were published in the Connecticut *Registration Report* for 1980.

c) The denominators used for the years 1981-1989 are the intercensal estimates published in: U.S. Bureau of the Census, *Preliminary Intercensal Estimates of the Population of States: 1981-1989*, 11/1/91. The U.S. Bureau of the Census has revised these intercensal figures using the 1990 MARS data. These final intercensal figures vary very little from the preliminary figures; hence, the 1981-1989 AAMRs were not recalculated using the final

figures. The final intercensal figures are available upon request from the CT Department of Public Health.

d) The 1990 denominators are the modified age, race, and sex population counts published by the U.S. Bureau of the Census. (U.S. Bureau of the Census. *Age, sex, race and Hispanic origin information from the 1990 Census: A comparison of census results with results where age and race have been modified*. Publ. No. 1990 CPH-L-74, 1990.

e) The 1991 and 1992 denominators were calculated based on two components: (*i*) Connecticut population estimates published by the CT Department of Public Health and Addiction Services; and (*ii*) age-sex population distributions for Connecticut published by the U.S. Bureau of the Census. The estimated Connecticut age-sex population counts were calculated by multiplying (*i*) and (*ii*), with appropriate rounding of the resulting figures.

The CT estimates for 1991 and 1992 may be found in the following publications:

Estimated Populations in Connecticut as of July 1, 1991. Hartford: CT Department of Health Services, Division of Health Surveillance and Planning, September, 1992.

Estimated Populations in Connecticut as of July 1, 1992. Hartford: CT Department of Public Health and Addiction Services, September, 1993.

The U.S. Census Bureau's estimated age-sex distributions of the CT population may be found in the following publications:

Davis, S. *Estimates of the Population of States by Age, Sex, Race and Hispanic Origin: 1991*. U.S. Bureau of the Census, Population Division, 1994.

Byerly, E. and K. Deardorff. *National and State Population Estimates: 1990-1994*. U.S. Bureau of the Census, Current Population Reports, p. 31-32. Washington, DC: U.S. Government Printing Office.

Appendix I

RATE DEFINITIONS

Age-specific death rate	=	Number of deaths in a specific age group / Total resident population in specific age group	x 100,000
Crude birth rate	=	Number of resident live births / Total resident population	x 1,000
Crude death rate	=	Number of resident deaths / Total resident population	x 1,000
Divorce rate *a*	=	Number of persons granted divorces / Mid-year total resident population	x 1,000
Fetal death rate *b*	=	Number of fetal deaths / Number of live births	x 1,000
Infant death rate	=	Number of infant deaths / Number of live births	x 1,000
Marriage rate *a*	=	Number of persons married / Mid-year total resident population	x 1,000

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a Marriage and divorce counts provided in the tables in this report refer to number of *couples*, not *individuals*, who married or divorced. To calculate the marriage or divorce *rates*, the marriage or divorce counts were multiplied by two.

b This fraction is often referred to as a *ratio*, rather than a *rate*, as the denominator (live births) does not contain the numerator (fetal deaths).

Appendix II

HEALTH DISTRICT DEFINITIONS
USED IN 1992 REGISTRATION REPORT

Health District	**Constituent Towns** *a*
Bristol-Burlington Health District	Bristol, Burlington
Chesprocott Health District	Cheshire, Prospect, Wolcott, Watertown
East Shore District Dept. of Health	Branford, East Haven, North Branford
Farmington Valley Health District	Avon, Barkhamsted, Canton, Colebrook, East Granby, Farmington, Granby, Hartland, New Hartford, Simsbury
Ledge Light Health District	City of Groton, Town of Groton
Naugatuck Valley Health District	Ansonia, Beacon Falls, Derby, Naugatuck, Seymour, Shelton
Newtown Health District	Town of Newtown, Borough of Newtown
North Central Health District	East Windsor, Ellington, Enfield, Suffield, Vernon, Windsor Locks
Northeast District Dept. of Health	Ashford, Brooklyn, Canterbury, Eastford, Hampton, Killingly, Plainfield, Pomfret, Putnam, Sterling, Thompson, Woodstock
Pomperaug Health District	Oxford, Southbury, Woodbury
Quinnipiack Valley Health District	Hamden, North Haven, Woodbridge
Stafford Health District	Stafford (Stafford Springs Borough), Union
Torrington Area Health District	Bethlehem, Cornwall, Goshen, Harwinton, Kent, Litchfield, Morris, Norfolk, Salisbury, Thomaston, Torrington, Warren, Winchester
Uncas Regional Health District	Montville, Norwich
West Hartford-Bloomfield Health District	Bloomfield, West Hartford
Weston-Westport Health District	Weston, Westport

a Constituent towns are listed as of Spring, 1995.

Appendix III

GLOSSARY

Age-adjusted death rate (Direct method): A summary of age-specific death rates, applied to a standard population (this report use the 1970 U.S. standard million) to calculate what rate would be expected if the selected population had the same distribution as the standard population. The total of expected deaths divided by the total of the standard population and multiplied by 100,000 yields the age-adjusted death rate per 100,000.

Age-specific death rate: The number of deaths for a specific age group per 100,000 population in the same age group.

Birth weight: The first weight of a fetus or infant at time of delivery. This weight is usually measured during the first hour of life, before postnatal weight loss occurs.

Cause of death: The underlying cause of death determined to be the primary condition leading to death, based on the international rules and sequential procedure set forth for manual classification of the underlying causes of death by the National Center for Health Statistics and the World Health Organization (*International Classification of Disease, Ninth Revision).* (See also: "Underlying cause of death.")

Crude death rate: The number of deaths per 1,000 population. This rate should not be used for making comparisons between different populations when the age, race, and sex distributions of the populations are different. (See "Age-adjusted death rate" and "Age-specific death rate.")

Divorce: The final legal dissolution of a marriage.

Fetal death: Death prior to the complete expulsion or extraction from the mother of a product of conception, which has passed through at least the 20th week of gestation. The fetus shows no signs of life such as heartbeat, pulsation of the umbilical cord, or movement of voluntary muscles.

Gestational age: The number of completed weeks elapsed between the first day of the last normal menstrual period (LMP) and the date of delivery.

Health district: A local governmental entity consisting of two or more towns that is responsible for the public health of its constituent towns. (See Appendix II for a listing of the 15 health districts in existence in Connecticut in the Spring of 1995.)

Hispanic ethnicity: Refers to people whose origins are from Spain, the Spanish-speaking countries of Central America, South America, and the Caribbean, or persons of Hispanic origin identifying themselves as Spanish, Spanish-American, Hispanic, Hispano, Latino, and so on. In Connecticut, the birth, death, and fetal death certificates have a separate line item for the individual's Hispanic status, to attempt to distinguish Hispanic ethnicity from race. Individuals identifying themselves as "Hispanic" can be of any race, and are also counted in the race breakdown as either "white," "black," or "other."

Infant death: Death occurring to an individual of less than one year (365 days) of age.

Kessner Index (Modified): The Kessner Index is a composite indicator of the adequacy of prenatal care a mother receives during her pregnancy. Prenatal care is categorized as *adequate*, *intermediate*, or *inadequate* based on three items from the birth certificate: timing of the first prenatal visit; total number of prenatal visits; and length of gestation. The term, *non-adequate* prenatal care, which is the sum of the intermediate and the inadequate levels of care, is used in Table 4 of the present report.

The modified Kessner Index used in this report differs from the usual definition in that more extensive efforts have been made to minimize the amount of missing information. In addition, certain extreme values of gestational age, which may have resulted from the mother's inability to recall the date of the last menstrual period, have been redefined as "missing" (about 1% of the records). A more detailed definition of the Modified Kessner Index and reference documents can be obtained from the Connecticut Department of Public Health, Office of Policy, Planning and Evaluation.

Live birth: The complete expulsion or extraction from the mother of a product of conception, regardless of the duration of pregnancy; after such separation, shows signs of life (e.g., heartbeat, pulsation of the umbilical cord, or movement of voluntary muscles.

Live birth order: The number of children born alive to the same mother, including the current birth (first born, second born, third born, etc.).

Low birth weight: A birth weight of less than 2,500 grams (approximately 5 lbs., 8 oz.).

Marital status: Because of statutory limitations, there is no "marital status" line item on Connecticut birth records. Marital status is inferred by comparing child's and parents' surnames. A birth is classified as occurring to a married couple if: 1) the parents' surnames are the same; or 2) if the child's and father's surnames are the same and the mother's current surname is missing in the birth certificate. A birth is classified as occurring to an unmarried couple if: 1) the father's name is missing; or 2) the parents' surnames are different.

Median age: The age that falls exactly in the middle of the entire range of ages ranked in order from low to high, such that 50% of the ages fall above it and 50% fall below it. If the number of ages is even, a value halfway between the two ages nearest the middle is used.

Neonatal death: Death occurring to an infant less than 28 days of age.

Occurrence: Place of occurrence identifies where the vital event actually took place, regardless of residence.

Plurality: The number of siblings born as the result of a single pregnancy; commonly expressed as *singleton* or *multiple*.

Postneonatal death: Death occurring to an infant aged 28 days to less than 1 year.

Premature: A live birth or fetal death occurring before the 37th week of gestation.

Race: A population of individuals who identify themselves from a common history, nationality, or geographical place. When responses in the "race" line item on vital records are associated with the definition of Hispanic origin, they are re-coded to "white race," as described in the National

Center for Health Statistics instruction manuals for coding vital records. Individuals identifying themselves as either "white," "black," or "other" race can be of any ethnic group.

Residence: The usual place of abode of the person to whom the vital event occurred. For births and fetal deaths, residence is defined as the mother's usual place of residence.

Teenage mother: A woman under 20 years of age on the date of delivery.

Underlying cause of death: The disease or injury that initiated the sequence of events leading directly to death, or the circumstances of the accident or violence that produced the fatal injury.

Very low birth weight: A birth weight of less than 1,500 grams (approx. 3 lbs., 5 oz.).

Full copies of the 1992 Registration Report can be requested by contacting Health Care Quality, Statistics, Analysis and Reporting Unit at (860) 509-7120.