Death Rates for Coronary Heart Disease in Metropolitan and Other Areas

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IN 1957 special tabulations of deaths and population were prepared which made possible the computation of death rates for the years 1949–51 by cause, age, sex, race, and county of residence. This paper is a report of death rates for coronary heart disease and for all causes of death in those groupings of counties which made up metropolitan and nonmetropolitan areas of the United States in 1950. (The term "coronary heart disease" is used synonymously with the International List term "arteriosclerotic heart disease.")

Death rates will be shown separately for each of 163 metropolitan areas and for the nonmetropolitan segments of 119 economic subregions. In the 1950 census, a metropolitan area was defined as a county or a group of counties containing at least one city of 50,000 or more persons plus contiguous counties, if essentially metropolitan in character and if socially and economically integrated with the central city. These contiguous counties may be considered as suburban counties. Also in 1950, 119 economic subregions of the United States were identified. These subregions, containing both metropolitan and nonmetropolitan counties and defined without regard to State boundaries, consisted of groups of counties manifesting fairly homogeneous characteristics as to patterns of gaining a livelihood, living conditions, and social and economic problems (*1,2*). The economic subregion has been suggested as a useful unit for the study of geographic differences in mortality (*3*).

Death rates shown here were based upon tabulations prepared by the Biometrics Branch of the National Institutes of Health and the Air Pollution Medical Program from records compiled by the National Office of Vital Statistics. This work is described fully in a publication by the Air Pollution Medical Program (*4*). Death rates are averages for the years 1949–51; they are based upon a 50 percent random sample of deaths from heart disease (ISC 410–443) and strokes (ISC 330–334) and upon a complete count of deaths from all other causes. The population used in computing rates is for the year 1950.

Only death rates for the age group 45–64 will be shown. Observations are confined to this age group because there is some doubt as to the accuracy with which the underlying cause of death can be identified for elderly persons (*5*), and at ages under 45 it was felt that there were too few deaths to make their addition worth while. Deaths in the age group 45–64 are of particular interest from a public health standpoint since this is an age group with a substantial life expectancy.

In describing geographic variations in death rates, only rates for white males will be presented. This is because among females the number of deaths from coronary heart disease is relatively small, with the result that geographic variations in death rates for this cause, for the less populous geographic units, tend to lack significance in the usual statistical sense.

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The geographic patterns in death rates for coronary heart disease for white females were found to be generally similar to those for white males in a previous study (*6*), however, so that the geographic patterns for death rates among males presented here probably roughly describe the patterns in death rates among females.

Because the mean age of persons in the age group 45–64 differs somewhat from one population segment to another, and because death rates are highly correlated with age, some of the geographic variation in death rates for this broad age grouping is due to variation in the age distribution of the populations under consideration. For this reason, all death rates presented in this report for the age group 45–64 have been age adjusted in 10-year intervals by the direct method to the age distribution of the total population of the United States in this age group in 1950.

All Areas

Table 1 shows average annual death rates for white males and females aged 45–64 for the years 1949–51 for center city and suburban counties within metropolitan areas and for nonmetropolitan counties. Death rates varied directly with the degree of urbanization for both males and females. The association was greatest for coronary heart disease but appears for the "other cardiovascular diseases" grouping and for the "all other causes" grouping. For coronary heart disease, male death rates in center city counties were 37 percent higher than in nonmetropolitan counties; female death rates in center city counties were 46 percent higher than in nonmetropolitan counties.

Nonmetropolitan Areas

Figure 1 shows the geographic pattern, by quartiles, in death rates for coronary heart disease for white males aged 45–64 in the nonmetropolitan segments of 116 economic subregions. Three of the total 119 economic subregions have only metropolitan areas. Metropolitan areas are shown in black and are not included in the quartile distribution. Since metropolitan areas constitute only a small proportion of the total land area of the United States, variation in their death rates does not lend itself to the same kind of graphic presentation as does variation in death rates for nonmetropolitan areas.

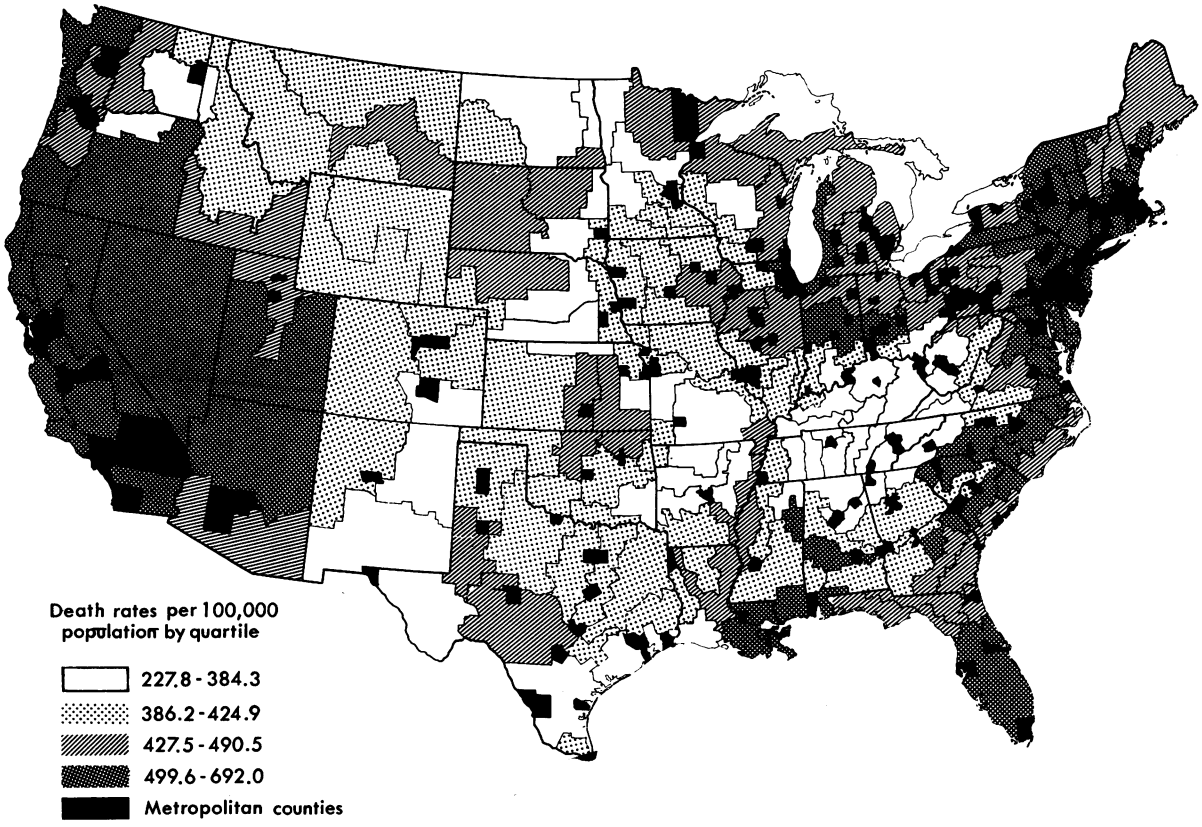
The key to figure 1 shows that death rates for the nonmetropolitan segments of economic subregions varied considerably. The subregion with the highest death rate had a rate over three times as high as the subregion with the lowest death rate. Contiguous economic subregions had similar death rates. High mortality rates were confined largely to a strip of territory near the South Atlantic coast

Table 1. Annual death rates per 100,000 population, by degree of urbanization, selected causes, whites aged 45–64, United States, 1949–51 [1]

Cause of death [2]	Males			Females		
	Metropolitan areas		Nonmetropolitan counties	Metropolitan areas		Nonmetropolitan counties
	Center city counties	Suburban counties		Center city counties	Suburban counties	
All causes	1,730.5	1,505.3	1,374.9	943.6	894.4	786.4
Cardiovascular diseases (330–334, 400–468)	935.3	832.2	735.7	430.9	413.1	345.0
Coronary heart disease (420)	606.1	542.7	442.5	176.8	162.2	120.8
Other cardiovascular diseases	329.2	289.5	293.2	254.1	250.9	224.2
All other causes	795.2	673.1	639.2	512.7	481.3	441.4

[1] Age adjusted in 10-year intervals.
[2] Figures in parentheses refer to International List numbers.

Figure 1. Coronary heart disease death rates for 116 economic subregions, nonmetropolitan areas only, white males aged 45–64, 1949–51



NOTE: Age adjusted in 10-year intervals.

stretching from Delaware to central Georgia, much of the Northeastern and Great Lakes regions, the Mississippi River Delta, and much of the area west of the Rockies. Low death rates for coronary heart disease were prevalent throughout most of the area between the Rockies and the Mississippi and in an area west of the Appalachian Mountains. Generally, the geographic pattern corresponds to that observed when, in a previous study, States were used as units for analysis (*6*).

Figure 2 shows the geographic pattern in death rates for nonmetropolitan areas for all causes of death for white males in the age group 45–64. Geographic variations in "all cause" death rates seem relevant to the study of coronary heart disease death rates since they probably strongly reflect geographic variations in coronary heart disease. They cannot, however, be influenced by any differences in diagnostic standards which might exist in various sections of the country, an important consideration in studying coronary heart disease mortality. An effect of coronary heart disease on the "all cause" death rate is suggested by the fact that in 1950 over a third of all deaths among white males aged 45–64 were assigned to coronary heart disease, and if death rates for coronary heart disease truly varied they would be expected to influence death rates for all causes (*7, 8*).

Variations in death rates pictured in figure 2 are sufficiently like those in figure 1 to provide some assurance that geographic variations in coronary heart disease death rates similar to those shown in figure 1 truly existed around 1950 and were not simply the result of variations in diagnostic criteria.

Metropolitan Areas

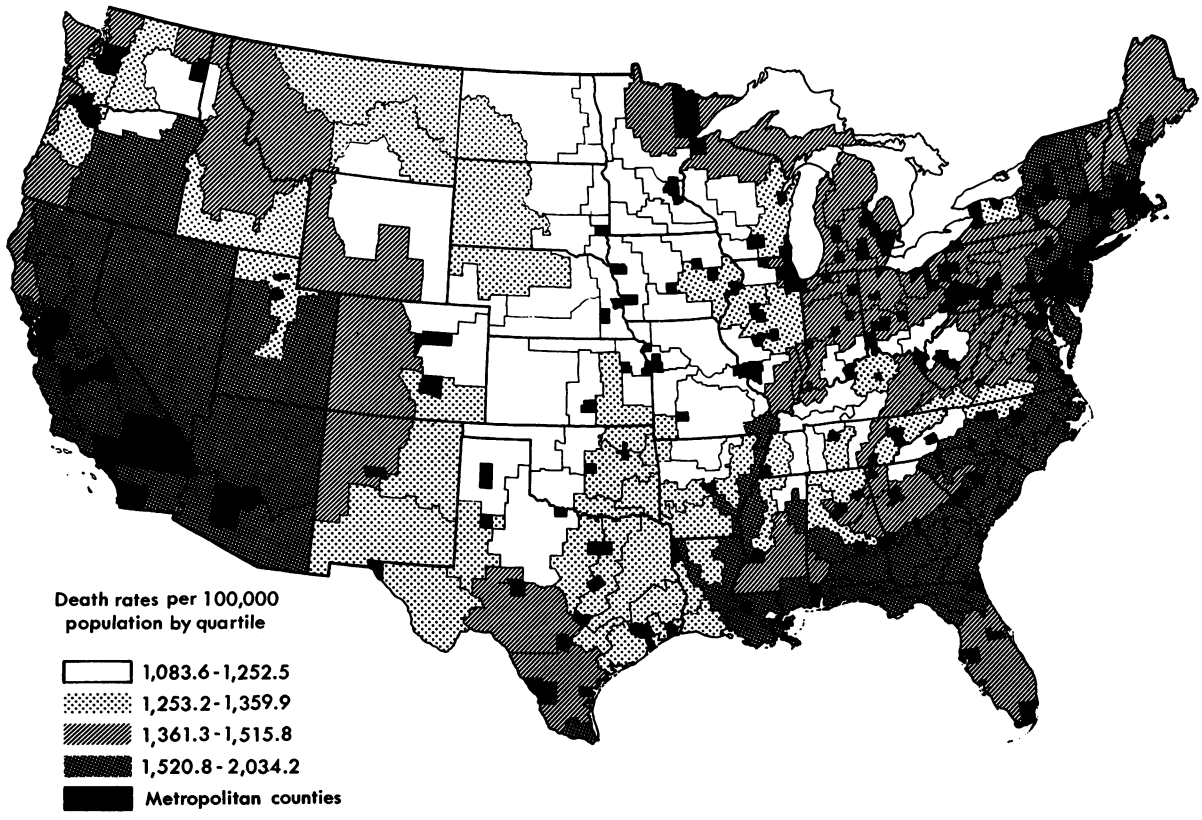
Table 2 shows death rates for coronary heart disease and for all causes of death for white

males aged 45–64 for each of the 163 metropolitan areas in the United States, and the rank of each metropolitan area in relation to all other metropolitan areas. Thus, a rank of 140 means that 139 areas had higher death rates, while 23 had lower death rates. A rank of 7 means that only 6 areas had higher death rates and 156 had lower death rates.

In Bureau of the Census publications, 168 standard metropolitan areas are used. In this report, in order to define metropolitan areas as groupings of counties, it was necessary in New England to combine certain metropolitan areas as defined by the Bureau of the Census. Also, the New York-Newark-Jersey City standard metropolitan area was divided into two areas, New York and Newark-Jersey City. For a further account of these redefinitions see the publication by Manos (*4*).

Metropolitan areas with coronary heart disease death rates which differed significantly from the unweighted mean for all metropolitan areas ($P<.05$) are noted, to assist the reader in determining whether a particular city in which he may be interested had an unusual death rate. Coronary heart disease death rates for metropolitan areas varied considerably, ranging from 826.8 in Savannah, Ga., to 299.0 in Lincoln, Nebr. Contrasts were great even for metropolitan areas in fairly close proximity. In Pennsylvania, for example, the death rate among middle-aged white males in Harrisburg was 607.8 while in Lancaster it was only 438.7. The corresponding "all cause" death rates in Harrisburg and Lancaster were 1,594.1 and 1,370.4, respectively. In California, the coronary heart disease death rate was 730.6 in Sacramento and 467.6 in San Bernardino; in Washington, 615.8 in Seattle and 461.6 in Spokane; in South Carolina, 825.6 in Charleston and 602.2 in Columbia; in Alabama, 517.6 in Birmingham and 349.8 in Gadsden.

Figure 2. Death rates for all causes for 116 economic subregions, nonmetropolitan areas only, white males aged 45–64, 1949–51



NOTE: Age adjusted in 10-year intervals.

Coronary heart disease death rates for metropolitan areas varied geographically in about the same manner as death rates shown in figure 1 for nonmetropolitan areas. There were some exceptions, however. In Florida, while coronary heart disease death rates in nonmetropolitan areas were generally high (fig. 1), rates for metropolitan areas were about average. The coronary heart disease death rate for white males aged 45–64 for the nonmetropolitan portion of the economic subregion which occupies central and southern Florida was 550.4 per 100,000 population, while for metropolitan Orlando it was 512.9; for Tampa and St. Petersburg, 560.3; and for Miami, 646.5.

A lack of contrast between metropolitan and nonmetropolitan counties also appears in economic subregions located in Wisconsin, Illinois, and Indiana. In a few economic subregions the death rates in the nonmetropolitan portions were actually higher than in the metropolitan portions. Boston, Brockton, Fall River, and

Table 2. Death rates per 100,000 population for coronary heart disease and for all causes, white males aged 45–64, 163 metropolitan areas, United States, 1949–51

Metropolitan area	Coronary heart disease		All causes		Metropolitan area	Coronary heart disease		All causes	
	Rate[1]	Rank	Rate[1]	Rank		Rate[1]	Rank	Rate[1]	Rank
Akron, Ohio	[2] 491. 5	132	1, 436. 7	133	Durham, N.C	541. 3	101	1, 501. 8	115
Albany-Schenectady-Troy, N.Y	[3] 725. 5	7	1, 844. 9	18	El Paso, Tex	[2] 441. 5	148	1, 789. 1	24
Albuquerque, N. Mex	[2] 389. 1	157	1, 510. 5	111	Erie, Pa	594. 5	56	1, 754. 1	30
Allentown-Bethlehem-Easton, Pa	588. 6	61	1, 560. 8	98	Evansville, Ind	547. 5	96	1, 647. 7	68
Altoona, Pa	601. 6	50	1, 640. 7	72	Fall River-New Bedford, Mass	[3] 626. 5	26	1, 729. 4	36
Amarillo, Tex	483. 7	136	1, 564. 1	93	Flint, Mich	601. 7	49	1, 527. 0	108
Asheville, N.C	486. 1	134	1, 431. 8	135	Fort Wayne, Ind	571. 0	76	1, 497. 3	118
Atlanta, Ga	570. 1	77	1, 646. 8	70	Fort Worth, Tex	630. 9	25	1, 552. 9	101
Atlantic City, N.J	578. 6	68	1, 728. 1	37	Fresno, Calif	507. 5	123	1, 702. 5	44
Augusta, Ga	693. 2	13	1, 991. 0	8	Gadsden, Ala	[2] 349. 8	162	1, 473. 0	127
Austin, Tex	475. 7	140	1, 424. 6	137	Galveston, Tex	[3] 802. 1	3	1, 981. 5	9
Baltimore, Md	[3] 598. 1	54	1, 864. 4	16	Grand Rapids, Mich	571. 0	75	1, 439. 6	132
Baton Rouge, La	[3] 720. 6	8	1, 681. 2	55	Green Bay, Wis	[2] 400. 7	155	1, 251. 1	159
Bay City, Mich	[2] 438. 3	150	1, 686. 7	53	Greensboro-High Point, N.C	521. 6	113	1, 412. 9	139
Beaumont-Port Arthur, Tex	553. 0	93	1, 638. 2	73	Greenville, S.C	[3] 692. 2	14	1, 848. 7	17
Binghamton, N.Y	612. 8	36	1, 600. 6	83	Hamilton-Middletown, Ohio	568. 2	79	1, 560. 9	97
Birmingham, Ala	517. 6	117	1, 676. 8	56	Harrisburg, Pa	607. 8	39	1, 594. 1	84
Boston, Mass	[3] 606. 0	42	1, 690. 4	50	Hartford, Conn	573. 3	73	1, 548. 5	103
Bridgeport, Conn	[3] 618. 3	30	1, 573. 6	90	Houston, Tex	521. 1	114	1, 694. 9	45
Brockton, Mass	553. 2	92	1, 476. 0	124	Huntington, W. Va.–Ashland, Ky	[2] 433. 5	151	1, 523. 6	109
Buffalo, N.Y	[3] 612. 9	35	1, 808. 4	20	Indianapolis, Ind	615. 8	33	1, 738. 2	35
Canton, Ohio	[2] 472. 3	141	1, 431. 3	136	Jackson, Mich	493. 4	131	1, 486. 1	120
Cedar Rapids, Iowa	468. 4	142	1, 307. 5	156	Jackson, Miss	634. 4	22	1, 769. 5	26
Charleston, S.C	[3] 825. 6	2	2, 254. 2	1	Jacksonville, Fla	579. 9	65	1, 754. 0	31
Charleston, W. Va	592. 0	59	1, 761. 7	28	Johnstown, Pa	527. 6	110	1, 657. 9	62
Charlotte, N.C	[3] 696. 6	12	1, 554. 6	100	Kalamazoo, Mich	576. 7	69	1, 378. 8	150
Chattanooga, Tenn	576. 7	70	1, 702. 8	43	Kansas City, Mo	564. 1	85	1, 610. 0	82
Chicago, Ill	574. 4	72	1, 868. 4	15	Kenosha, Wis	537. 3	104	1, 450. 7	131
Cincinnati, Ohio	574. 5	71	1, 750. 1	33	Knoxville, Tenn	[2] 460. 8	145	1, 570. 0	92
Cleveland, Ohio	[3] 625. 6	29	1, 747. 4	34	Lancaster, Pa	[2] 438. 7	149	1, 370. 4	151
Columbia, S.C	602. 2	48	1, 727. 0	38	Lansing, Mich	598. 5	53	1, 401. 8	143
Columbus, Ga	603. 4	46	1, 913. 4	12	Laredo, Tex	405. 5	154	1, 979. 4	10
Columbus, Ohio	528. 5	109	1, 562. 2	96	Lexington, Ky	[2] 364. 9	159	1, 389. 0	146
Corpus Christi, Tex	563. 6	86	1, 617. 6	79	Lima, Ohio	483. 8	135	1, 393. 7	145
Dallas, Tex	[3] 633. 2	23	1, 562. 5	95	Lincoln, Nebr	[2] 299. 0	163	1, 135. 4	163
Davenport, Iowa-Rock Island-Moline, Ill	569. 1	78	1, 419. 7	138	Little Rock-North Little Rock, Ark	611. 2	37	1, 622. 1	78
Dayton, Ohio	605. 6	44	1, 477. 9	123	Lorain–Elyria, Ohio	534. 4	106	1, 647. 7	67
Decatur, Ill	547. 5	97	1, 473. 8	125	Los Angeles, Calif	[3] 679. 1	15	1, 684. 2	54
Denver, Colo	527. 0	111	1, 563. 5	94	Louisville, Ky	551. 7	94	1, 689. 4	51
Des Moines, Iowa	514. 4	119	1, 501. 7	116	Lubbock, Tex	[2] 399. 6	156	1, 211. 4	161
Detroit, Mich	563. 4	87	1, 661. 2	61	Macon, Ga	564. 4	83	1, 995. 5	7
Duluth, Minn.–Superior, Wis	578. 8	67	1, 508. 9	112	Madison, Wis	[2] 458. 1	146	1, 315. 8	153

Footnotes at end of table.

(Continued on p. 764)

Table 2. Death rates per 100,000 population for coronary heart disease and for all causes, white males aged 45–64, 163 metropolitan areas, United States, 1949–51—Continued

Metropolitan area	Coronary heart disease		All causes		Metropolitan area	Coronary heart disease		All causes	
	Rate[1]	Rank	Rate[1]	Rank		Rate[1]	Rank	Rate[1]	Rank
Manchester, N.H	602. 8	47	1, 670. 4	57	San Bernardino, Calif	[2] 467. 6	143	1, 483. 6	121
Memphis, Tenn	584. 1	63	1, 766. 9	27	San Diego, Calif	572. 7	74	1, 612. 2	81
Miami, Fla	[3] 646. 5	20	1, 647. 9	66	San Francisco–Oakland, Calif	[3] 639. 4	21	1, 802. 1	21
Milwaukee, Wis	[3] 604. 3	45	1, 633. 1	74	San Jose, Calif	605. 6	43	1, 506. 6	113
Minneapolis–St. Paul, Minn	537. 2	105	1, 458. 2	129	Savannah, Ga	[3] 826. 8	1	2, 080. 8	6
Mobile, Ala	599. 9	51	1, 631. 9	75	Scranton, Pa	586. 0	62	2, 085. 0	5
Montgomery, Ala	707. 3	9	1, 883. 5	14	Seattle, Wash	[3] 615. 8	32	1, 689. 0	52
Muncie, Ind	665. 3	17	1, 517. 3	110	Shreveport, La	599. 1	52	1, 542. 7	104
Nashville, Tenn	[2] 477. 4	139	1, 623. 3	76	Sioux City, Iowa	626. 3	27	1, 652. 2	64
Newark–Jersey City, N.J	564. 2	84	1, 717. 5	40	Sioux Falls, S. Dak	558. 8	91	1, 385. 8	148
New Haven, Conn	568. 1	80	1, 649. 9	65	South Bend, Ind	563. 0	88	1, 461. 8	128
New Orleans, La	[3] 747. 4	5	2, 099. 7	4	Spokane, Wash	[2] 461. 6	144	1, 478. 2	122
New York, N.Y	[3] 677. 4	16	1, 751. 6	32	Springfield, Ill	632. 3	24	1, 780. 6	25
Norfolk–Portsmouth, Va	[3] 753. 7	4	1, 795. 1	23	Springfield, Mo	539. 9	102	1, 431. 8	134
Ogden, Utah	504. 2	126	1, 311. 6	155	Springfield, Ohio	662. 5	18	1, 582. 8	87
Oklahoma City, Okla	516. 7	118	1, 578. 1	88	Springfield–Holyoke, Mass	606. 1	41	1, 589. 8	85
Omaha, Nebr	566. 7	81	1, 502. 9	114	Stockton, Calif	617. 8	31	1, 979. 0	11
Orlando, Fla	512. 9	120	1, 622. 7	77	Syracuse, N.Y	610. 3	38	1, 644. 5	71
Peoria, Ill	518. 4	115	1, 533. 3	107	Tacoma, Wash	506. 6	124	1, 408. 2	141
Philadelphia, Pa	[3] 613. 9	34	1, 801. 1	22	Tampa–St. Petersburg, Fla	560. 3	89	1, 666. 4	60
Phoenix, Ariz	[2] 422. 7	153	1, 904. 3	13	Terre Haute, Ind	531. 1	108	1, 754. 8	29
Pittsburgh, Pa	[3] 595. 5	55	1, 693. 5	47	Toledo, Ohio	580. 3	64	1, 691. 0	48
Pittsfield, Mass	559. 2	90	1, 647. 0	69	Topeka, Kans	493. 4	130	1, 258. 3	158
Portland, Maine	[3] 699. 5	11	1, 693. 9	46	Trenton, N.J	579. 1	66	1, 706. 7	42
Portland, Oreg	538. 0	103	1, 537. 1	106	Tulsa, Okla	550. 9	95	1, 572. 2	91
Providence, R.I	593. 2	58	1, 666. 5	59	Utica-Rome, N.Y	546. 8	99	1, 588. 6	86
Pueblo, Colo	[2] 357. 5	161	1, 217. 9	160	Waco, Tex	[2] 372. 7	158	1, 306. 5	157
Racine, Wis	518. 2	116	1, 380. 7	149	Washington, D.C	[3] 607. 7	40	1, 690. 9	49
Raleigh, N.C	626. 2	28	1, 667. 7	58	Waterloo, Iowa	480. 7	138	1, 388. 9	147
Reading, Pa	522. 7	112	1, 560. 8	99	Wheeling, W. Va.–Steubenville, Ohio	512. 1	122	1, 614. 8	80
Richmond, Va	[3] 706. 5	10	1, 843. 5	19	Wichita, Kans	543. 1	100	1, 495. 2	119
Roanoke, Va	512. 7	121	1, 408. 6	140	Wichita Falls, Tex	446. 6	147	1, 203. 8	162
Rochester, N.Y	[3] 652. 2	19	1, 540. 3	105	Wilkes-Barre–Hazelton, Pa	593. 7	57	2, 225. 0	2
Rockford, Ill	503. 9	127	1, 399. 8	144	Wilmington, Del	590. 1	60	1, 653. 8	63
Sacramento, Calif	[3] 730. 6	6	2, 150. 2	3	Winston-Salem, N.C	547. 0	98	1, 549. 1	102
Saginaw, Mich	506. 6	125	1, 450. 8	130	Worcester, Mass	533. 0	107	1, 473. 3	126
St. Joseph, Mo	482. 8	137	1, 402. 3	142	York, Pa	499. 5	128	1, 356. 6	152
St. Louis, Mo	[2] 498. 3	129	1, 711. 9	41	Youngstown, Ohio	565. 6	82	1, 575. 4	89
Salt Lake City, Utah	491. 0	133	1, 500. 4	117					
San Angelo, Tex	[2] 357. 8	160	1, 315. 6	154					
San Antonio, Tex	[2] 429. 9	152	1, 723. 7	39					

[1] Age adjusted in 10-year intervals. [2] Significantly below average at 0.05 level. [3] Significantly above average at 0.05 level.

New Bedford, Mass., and Providence, R. I., all have lower death rates than the nonmetropolitan portion of the economic subregion they occupy. In Texas, the Lubbock metropolitan area had a coronary heart disease death rate for white males 45–64 of 399.6 while the corresponding death rate for the nonmetropolitan portion of the economic subregion it occupies was 472.7; San Angelo had a rate of 357.8 while in the remainder of the economic subregion it occupies the rate was 427.5; Pueblo, Colo., had a death rate of 357.5 as compared with 360.7 for the remainder of its subregion; and Albuquerque, N. Mex., had a death rate of 389.1 compared with 401.8 for the remainder of its subregion.

As was true for nonmetropolitan segments of economic subregions shown on figures 1 and 2, there is a correlation between death rates for coronary heart disease and death rates for "all causes." Metropolitan areas ranking high or low in their coronary heart disease death rate

tend to rank correspondingly high or low in their "all cause" death rate; the rank order correlation coefficient is 0.60.

Discussion

Relatively high death rates in urban areas were among the earliest of demographic observations. The reasons for this for noninfectious diseases such as coronary heart disease are not clearly known. Some of the urban-rural differentials in mortality previously reported may have been due to errors in the residence classification of death certificates. However, such errors are probably not an important factor in differences in death rates between metropolitan and nonmetropolitan areas. It is believed that any errors in residence classification probably take place mainly between urban and rural parts of metropolitan areas rather than between metropolitan and nonmetropolitan areas (*9*). Nor does it seem likely that contrasts in death rates for coronary heart disease between metropolitan and nonmetropolitan areas are due solely to variations in diagnostic criteria, in view of the contrasts observed in death rates for all causes.

Possibly even more significant than the association of coronary heart disease mortality with urbanization are the geographic differentials in death rates which cannot be accounted for by urbanization. These may be due to artifacts such as under- or over-enumeration of population, under-registration of deaths, or misstatement of age either in the 1950 census or on death certificates; or they may be the result of differentials in factors which cause coronary heart disease.

It might be productive to study metropolitan areas in relation to the mortality data presented here. Metropolitan areas seem to be particularly appropriate units for study since they constitute natural ecologic units, basically similar while relatively independent. There may also be natural units within some of the larger metropolitan areas which would form a useful basis for analysis (*10*).

Nonmetropolitan areas, as defined in this report, might also prove to be productive units for analysis. A previous study of variations in mortality for all causes of death among rural counties in the United States suggested that the percentage of the population employed in agriculture explained much of the variation, particularly at ages over 40 (*11*). Occupational variables might be importantly involved in geographic distributions of mortality from coronary heart disease presented here, not only among nonmetropolitan areas but among metropolitan areas as well; or possibly some climatic or geological factors are involved. There are, in fact, many hypotheses relating to etiological factors in coronary heart disease which might be profitably tested by a study of factors associated with mortality rates in various segments of our population (*12*).

Summary

In the United States during the years 1949–51 the resident death rates for coronary heart disease among white persons aged 45–64 varied directly with the degree of urbanization for both males and females. In metropolitan counties with center cities, coronary heart disease death rates were 37 percent higher for males and 46 percent higher for females than in nonmetropolitan counties.

Coronary heart disease death rates in the nonmetropolitan segments of 116 economic subregions varied considerably, with the highest rate being over three times the lowest. High mortality areas were confined largely to a strip of territory near the South Atlantic coast stretching from Delaware to central Georgia, much of the northeastern and Great Lakes regions, the Mississippi River Delta region, and much of the area west of the Rockies. There was a similar geographic pattern in death rates for all causes.

Death rates for coronary heart disease for 163 metropolitan areas of the country also varied considerably and followed much the same geographic pattern as death rates for nonmetropolitan areas. In a few sections of the country there was, however, little difference in coronary heart disease death rates between metropolitan and nonmetropolitan areas.

Contrasts in death rates for coronary heart disease among metropolitan areas were found to be great for some metropolitan areas in fairly close proximity.

A parallel between death rates for coronary

heart disease and death rates for all causes suggests that the variations in coronary heart disease death rates noted here were probably not simply the result of differences in diagnostic criteria in various sections of the country.

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Report to the People

In the 1959 report of the health department of Peoria, Ill., printed in pocket size on coated paper, the frontispiece carries a sketch of the new city health center. An informal greeting, of 250 words, by Dr. Fred P. Long, director of health, is followed by eight pages of pictures of the department in action, including press and television work, classes for expectant parents, inservice training, counseling by public health nurses of mothers and the aged, school health, followup of accidental poisoning, clinics, history recording and filing, sanitation, laboratory and dental services, rabies control, and a deep bow to the clerical staff restoring their mental health over a cup of coffee.

One page with six brief paragraphs is given to current achievements, such as a conference on emotional health in the schools and the reduction of the number of outside toilets to 26 in a community which had 3,300 when the health department was organized. The facing page looks to the future, with three items, set up in news-page form, referring to an air pollution report, a survey of the effects of fluoridation in the city, and a continuing program of immunization.

The last page carries the local vital statistics, with a breakdown of leading factors in death and illness, and a financial statement. The inside back cover lists the names, jobs, and locations of all employees of the department. The back cover says: "Scientific progress is based on the art of knowing the changing wants and needs of the people."

George Hensley, director of health education, lists himself in alphabetical order under administration.