

Mortality from Puerperal Septicemia in the United States*

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IT is well known that in practically all countries the death rates from puerperal septicemia, the largest single cause of maternal mortality, have shown little or no tendency to decline during recent years. This is remarkable in the light of present medical knowledge and of improving obstetrical practice. In a previous study¹ by the author of the course of puerperal septicemia mortality, a trend line was fitted to the data of each of a number of states. Though it was observed that these trend lines did not have the same slope, it was impossible to study the causes of this variability because of lack of data. It is possible, however, to determine whether or not the trend of the mortality from puerperal septicemia has been approximately the same for certain broader divisions of the population, namely, urban white, rural white, urban colored, and rural colored.

This was done by analyzing the data published by the U. S. Bureau of the Census in *Mortality Statistics and Birth, Stillbirth and Infant Mortality Statistics* for successive years from 1922 (the year in which the continuous tabulation of stillbirths began) to 1927 inclusive. All the states that were in both the death and the birth registration area for the entire period 1922-1927, were combined into a group or unit for which it was desired to assemble information:

California	Michigan	Oregon
Connecticut	Minnesota	Pennsylvania
Delaware	Mississippi	Rhode Island
Illinois	Montana	Utah
Indiana	Nebraska	Vermont
Kansas	New Hampshire	Virginia
Kentucky	New Jersey	Washington
Maine	New York	Wisconsin
Maryland	North Carolina	Wyoming
Massachusetts	Ohio	

For certain divisions of the total population of this unit the total

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TABLE I

MORTALITY FROM PUERPERAL SEPTICEMIA, COMBINED STATES, WHITE POPULATION

Year	Urban			Rural		
	Total Births	Deaths from Puerperal Septicemia	Deaths per 1,000 Total Births	Total Births	Deaths from Puerperal Septicemia	Deaths per 1,000 Total Births
1922	873,288	2,279	2.61	784,663	1,373	1.75
1923	896,292	2,508	2.80	776,431	1,363	1.76
1924	921,738	2,451	2.66	788,527	1,324	1.68
1925	898,943	2,462	2.74	757,993	1,201	1.58
1926	883,164	2,340	2.65	729,384	1,221	1.67
1927	889,169	2,358	2.65	729,782	1,149	1.57

births (live births and stillbirths) and the corresponding number of deaths from puerperal septicemia were obtained, suitable combinations being made where necessary, from the government publications for each year of the period 1922-1927. With this information, death rates were next calculated. These were expressed as the number of deaths from puerperal septicemia per 1,000 total births, a method discussed and advocated by both Howard³ and Hemenway.⁴ The class "total births" includes, of course, both living births and stillbirths.

The results of this analysis are presented in Tables I and II and Figures I and II. As defined by the U. S. Bureau of the Census, "urban" is descriptive of the population living in cities which had 10,000 inhabitants or more in 1920, and "rural," of the population living in places which had less than 10,000 inhabitants in 1920. It

TABLE II

MORTALITY FROM PUERPERAL SEPTICEMIA, COMBINED STATES, COLORED POPULATION

Year	Urban			Rural		
	Total Births	Deaths from Puerperal Septicemia	Deaths per 1,000 Total Births	Total Births	Deaths from Puerperal Septicemia	Deaths per 1,000 Total Births
1922	46,727	220	4.71	81,332	223	2.74
1923	52,238	267	5.11	81,110	225	2.77
1924	59,270	264	4.45	82,599	254	3.08
1925	59,780	300	5.02	81,479	231	2.84
1926	60,040	277	4.61	81,566	189	2.32
1927	62,177	320	5.15	79,915	225	2.82

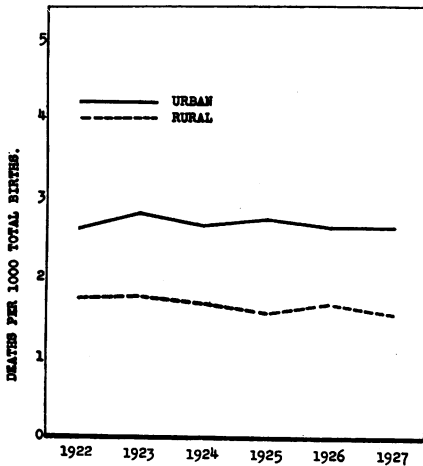


FIG. I. DEATH RATES FROM PUERPERAL SEPTICEMIA, COMBINED STATES, WHITE POPULATION, 1922-1927.

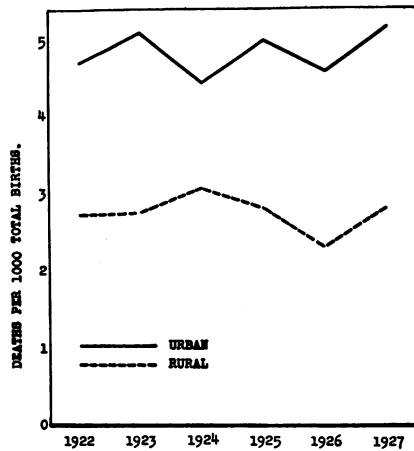


FIG. II. DEATH RATES FROM PUERPERAL SEPTICEMIA, COMBINED STATES, COLORED POPULATION, 1922-1927.

will be seen by a study of these tables and figures that there certainly has been no tendency for the rates to decline in the urban white, urban colored, and rural colored divisions of the population. For the rural white division, however, the rates have had a very slight tendency to decline, but in view of the shortness of the period studied this is probably without significance. (The rates for the rural part of the population have been always less than those for the urban part. This is true for both the white and the colored group. The death rates for the colored population have been always higher than those for the white population in both the urban and rural sections.)

Attention will now be directed to another aspect of the problem. Is there any association between the magnitude or trend of the death rates and aggregation of population as judged by the size of city in which people live? In tabulating the data for the urban population of the combined states with the addition of Washington, D. C., to obtain some information upon this point, it seemed preferable to make the classification of cities as to size depend upon the number of total births recorded in 1922 rather than upon the total population in 1920. Accordingly, those places which had a population of 10,000 or more in 1920 were classified into 3 groups: all having fewer than 700 total births in 1922; all having from 700 to 2,000 total births in 1922; and all having 2,000 or more total births in 1922. The results are set forth in Table III. It will be seen that there has been no definite tendency for the death rates for any of these 3 sub-divisions of the combined urban population to decline. (The rates, however, tend to be lowest in the group of large cities.)

TABLE III

MORTALITY FROM PUERPERAL SEPTICEMIA, COMBINED STATES, TOTAL URBAN POPULATION

Year	Cities Having Fewer than 700 Total Births in 1922			Cities Having from 700 to 2,000 Total Births in 1922			Cities Having 2,000 Total Births or More in 1922		
	Total Births	Deaths from Puerperal Septicemia	Deaths per 1,000 Total Births	Total Births	Deaths from Puerperal Septicemia	Deaths per 1,000 Total Births	Total Births	Deaths from Puerperal Septicemia	Deaths per 1,000 Total Births
1922	157,356	458	2.91	156,811	477	3.04	615,414	1,594	2.59
1923	163,505	493	3.02	165,274	569	3.44	629,225	1,751	2.78
1924	169,599	445	2.62	173,291	570	3.29	647,851	1,753	2.71
1925	165,631	510	3.08	169,245	566	3.34	633,398	1,723	2.72
1926	163,258	495	3.03	166,276	503	3.03	623,033	1,647	2.64
1927	165,050	497	3.01	168,299	489	2.91	627,488	1,726	2.75

These findings may be summarized by the statement that, for the period studied, with the possible exception of the rural white division, the death rates from puerperal septicemia have not declined in any of the divisions of the population considered, and furthermore that the rates for each division have remained remarkably constant.

REFERENCES

1. Harmon, G. E. The Course of Mortality from Puerperal Septicemia for Certain States of the United States, 1900-1920, *A. J. P. H.*, 14, 3: 214 (Mar.), 1924.
2. Howard, William Travis. The Real Risk-Rate of Death to Mothers from Causes Connected with Child-birth, *Am. J. Hyg.*, I: 197 (Mar.), 1921.
3. Hemenway, Henry Bixby. Tabulation of Maternal Deaths, and Causes of Stillbirths and Deaths of Very Young Children, *A. J. P. H.*, 19, 12: 1334 (Dec.), 1929.

Septic Sore Throat

AN explosive outbreak of septic sore throat involving over 450 cases, with 4 deaths, is reported. The epidemiological evidence establishes that the source was infected milk from one dairy.

The attack rates in households exposed vary from 38 per cent in the 10-14 year old groups, to over 60 per cent in the group of 20-30 years. The vast majority of infected families showed multiple cases. Suggestive but inconclusive evidence is given that the cow was infected by human carriers of the causative agent of scarlet fever.

The epidemic was controlled by stopping the sale of unpasteurized milk.—McKay, A. L., and Hardman, R. P., A Septic Sore Throat Epidemic, *Canad. Pub. Health J.*, May, 1931.