

Recent Statistics on Diabetes*

Reflecting extremely favorable health conditions generally, the death rate from diabetes in the early months of 1954 declined sharply below that in the corresponding period of 1953, which was marked by a respiratory outbreak of considerable proportions. Provisional data for the United States, based on a 10 per cent sample of death certificates, showed a death rate from diabetes of 16.9 per 100,000 population in the first quarter of 1954, as compared with 18.9 in 1953. Similarly, in the urban wage-earning population, represented by Industrial policyholders of the Metropolitan Life Insurance Company, the death rate from diabetes declined from 17.0 per 100,000 in the first four months of 1953 to 15.9 in the same period of the current year.

For the entire year 1953, the provisional mortality data on diabetes in the 10 per cent sample showed a very slight decrease in the death rate from 1952. The number of deaths ascribed to diabetes last year is estimated to be about 25,000 or not greatly different from that in each of the four years preceding. In contrast with the experience in the general population, the death rate among the Industrial policyholders of the Metropolitan Life Insurance Company increased more than 8 per cent in 1953 as compared with 1952.

The changes in the death rates from diabetes for the various local areas between the two years were not uniform. As Table 1 shows, the death rate in New York City remained stationary, that in Philadelphia increased nearly 10 per cent between 1952 and 1953, while in both Boston and Baltimore the rates declined very appreciably.

Toronto and Montreal, the two Canadian cities for which data are regularly obtained, both showed an increase in the death rate in 1953 over 1952, the rise being particularly large for Toronto. This trend in the urban Canadian population is confirmed by the data for Industrial policyholders of the Metropolitan Life Insurance Company in Canada, among whom the death

rate from diabetes in 1953 was 9.6 as compared with 7.5 in 1952.

For England and Wales figures for the first nine months of 1953 showed a minimal increase in the diabetes death rate over the same period of 1952. This increase was limited to the male population, the rates for females being identical in the two years. Data for London Administrative County for the entire year of 1953 showed a sizable reduction in the diabetes death rate over 1952, but this may reflect conditions peculiar to that area.

Regional data for 1953, based on the 10 per cent sample of death certificates, showed a rather mixed trend in diabetes mortality as compared with the preceding year (see Table 2). *In four of the nine geographic areas the death rate in 1953 was higher than that of the year before, but in only one, the East North Central Area, was the increase appreciable. In three of the five areas experiencing a decline, the reduction was appreciable. In the Mountain Area, however, the rates are subject to sharp fluctuations because of the small number of deaths in the sample for this sparsely populated region.*

A few years ago the Medical Department of the Fidelity Mutual Life Insurance Company revised its procedure in analyzing the causes of death among its policyholders to bring out the etiological factors in its mortality experience. In this revision deaths were ascribed to diabetes only if diabetic acidosis was the cause of death. However, careful record was made of all cases in which policyholders were known to have diabetes at the time of death. Between 1947 and 1952 inclusive, there were 193 deaths of known diabetics. This was 3.1 per cent of all deaths recorded in the company's experience during the period. As Table 3 shows, only 8, or 4.1 per cent of the deaths of diabetics were due to acidosis and ascribed, therefore, to diabetes. The overwhelming majority—more than four-fifths—of the deaths of diabetics were due to arteriosclerosis. In interpreting these data it should be kept in mind that the clientele of the company consists predominantly of upper-middle-class males. The median age of the entire policyholder group is about 42 years,

*Submitted by the Committee on Statistics, Herbert H. Marks, Chairman. The Committee welcomes suggestions or actual material suitable for this section in future issues, from Association members and other readers of the Journal.

RECENT STATISTICS ON DIABETES

TABLE 1
Recent data on diabetes mortality—deaths and death rates for 1952 and 1953

Area	Death rates per 100,000		Number of deaths	
	1953	1952	1953	1952
United States (10% sample)	16.0	16.2	2,539	2,525
Metropolitan Life Ins. Co.				
Industrial Policyholders	15.6	14.4	2,893	2,674
New York State	21.1	20.6	3,272	3,146
New York City	20.5	20.5	1,660	1,652
Maryland	16.2	19.3	405	473
Baltimore, resident	19.0	22.8	183	218
Boston	21.2	26.7	172	216
Philadelphia	29.4	26.7	626	564
Toronto	18.0	14.2	120	95
Montreal, resident	19.7	17.9	207	185
London (Administrative County)	7.5	9.1	254	307
		Jan.-Sept.	Jan.-Sept.	
England and Wales				
Total	7.5	7.4	2,486	2,443
Males	5.3	5.0	848	795
Females	9.6	9.6	1,638	1,648

Rates for the states and cities are based upon local estimates of population. United States data based upon the returns from a 10 per cent sample of death certificates received in vital statistics offices, as published in *Current Mortality Analysis*, a monthly report of the National Office of Vital Statistics of the U. S. Public Health Service.

TABLE 2

Number of deaths and death rates from diabetes in geographic division; United States reporting area for the 10 per cent sample: 1951, 1952 and 1953

Geographic Division	Death rates per 100,000*			Number of deaths*		
	1953	1952	1951	1953	1952	1951
U. S. reporting area	16.0	16.2	16.5	2,539	2,525	2,528
New England	18.4	20.2	24.1	178	191	218
Middle Atlantic	22.6	22.2	19.2	702	682	591
East North Central	20.2	19.0	20.1	651	602	623
West North Central	17.3	18.1	17.9	247	256	256
South Atlantic	12.5	12.3	12.9	281	273	279
East South Central	8.9	10.5	12.0	102	120	141
West South Central	10.6	10.5	12.2	162	158	180
Mountain	9.8	14.9	10.8	55	81	56
Pacific	9.9	10.4	12.5	161	162	184

*Excludes armed forces overseas.

These data from the 10 per cent sample are subject to sampling error. The number of deaths, as given, does not cover the entire United States for each month but is limited by the completeness of the reporting area. The size of the reporting area is indicated by the footnote on page 7 of each monthly issue of the *Current Mortality Analysis*.

Source: Data furnished by National Office of Vital Statistics of the U. S. Public Health Service.

TABLE 3

Causes of death of policyholders known to have diabetes at time of death

Fidelity Mutual Life Insurance Company, 1947-1952

Cause of death	Number	Per cent
All causes	193	100.0
Diabetic acidosis	8	4.1
Arteriosclerosis (coronary, cerebral, renal, etc.)	159	82.5
Cancer	7	3.6
Pneumonia	5	2.6
Cirrhosis of liver	5	2.6
Prostatic disease	2	1.0
Other*	7	3.6

*One death each from: pulmonary tuberculosis, brain tumor, aplastic anemia, gastric ulcer, pyelonephritis, ruptured urethra and accident.

Source: Dr. Joyce T. Sheridan, Associate Medical Director, The Fidelity Mutual Life Insurance Company, Philadelphia, Pa.

and the median age of death from all causes is about 64 years.

A few years ago, the School Health Act of the Commonwealth of Pennsylvania required that each pupil be given a complete physical examination every two years. This, together with the good records kept by the Division of Medical Services of the Philadelphia Public School system, has facilitated the assembling of statistics on diabetes in Philadelphia Public School children. The data in Table 4 were provided by Dr. Ruth Weaver, Director of Health Services of the Division. This table indicates that since the inauguration of the program an appreciable number of new cases of diabetes have been identified annually. The number of such cases in

RECENT STATISTICS ON DIABETES

TABLE 4
Diabetes in Philadelphia Public Schools, 1948-1953

School Year	Enrollment	Urinalyses	Pupils with diabetes	Previously known	New Cases	Known diabetes deaths
1948-1949	210,645	6,967	60	60	0	0
1949-1950	213,001	5,049	73	60	13	2
1950-1951	212,816	4,951	100	73	27	0
1951-1952	214,103	3,845	120	100	20	1
1952-1953	218,250	230	139*	120	19	1

*Three of these 139 were discovered by "screening" (urinalysis and subsequent study).
Source: Dr. Ruth H. Weaver, Director of Health Services, Philadelphia Public Schools.

the school years 1949-1950 to 1952-1953 among Philadelphia's Public School children has averaged nearly 20 a year, or about 1 in 10,000 pupils. The increase in the total number of known cases may be subject to error, because no allowance appears to have been made in the data for pupils who graduated, were transferred or died, but the figures are at least indicative of the prevalence of diabetes in the public-school age group. The total known number reported in the school year 1952-1953 is equivalent to approximately 1 in 1600 pupils, or somewhat higher than the ratio (1:2500) in this age group in the National Health Survey of 1935-1936.

DIABETES AS A CAUSE OF BLINDNESS

Blindness associated with or due to diabetes accounts for an increasing proportion of total prevalence and incidence of blindness. Major contributing factors are (1) the reduction of blindness due to congenital causes and to infections at birth or in infancy and childhood, (2) the increasing average age of the population, and (3) the increased proportion of diabetics with long duration of the disease among whom the frequency of the development of blindness is rather high. New data for England both on the relative importance of blindness in diabetics, as well as characteristics of the diabetic blind have recently been published in the monograph, "The Causes of Blindness in England, 1948-1950," by Arnold Sorsby (Ministry of Health, London, 1953). The data are based on certificates obtained through the Southern

Regional Association for the Blind and the North Regional Association for the Blind which together serve nearly 90 per cent of the registered blind in England. The data presented here relate to cases with blindness due to the same causes in both eyes.* A great majority of the entire group of blind persons studied did not suffer complete loss of sight—only 5.9 per cent having no perception of light; 17.1 per cent, only perception of light; 36.4 per cent being able to perceive hand movement, and the remainder having some less severe impairment of vision. Facts on degree of visual loss are not given separately for the various causes of blindness. The major facts on the diabetic blind are summarized in Tables 5 to 7.

As Table 5 indicates, the number of new cases of blindness increased over the three-year period both for total cases and for diabetics. In part, this reflects the more frequent certification of cases still having a small degree of vision. The increase was relatively greater for diabetics than for all cases. The proportion of cases of blindness due to diabetes rose from 3.4 per cent of the total in 1948 to 4.9 per cent in 1950. Among females both the proportion and the total number of cases of blindness was greater than among males. The difference was particularly marked for blindness due to diabetes, with females outnumbering males by more than 3 to 1.

*Diabetes was involved in only 0.4 per cent of the cases with blindness due to a different cause in each eye.

TABLE 5
Number of reported cases of blindness in both eyes and number and per cent due to diabetes, by sex and calendar years: England, 1948-1950

Year	Both Sexes			Males			Females		
	All causes	Diabetes	Per cent	All causes	Diabetes	Per cent	All causes	Diabetes	Per cent
1948-1950	18150	775	4.3	7190	180	2.5	10960	595	5.4
1950	7647	376	4.9	2990	79	2.6	4657	297	6.4
1949	6987	279	4.0	2763	67	2.4	4224	212	5.0
1948	3516	120	3.4	1437	34	2.4	2079	86	4.1

Source: *The Causes of Blindness in England, 1948-1950*, by Arnold Sorsby, Ministry of Health, London, 1953.

RECENT STATISTICS ON DIABETES

TABLE 6

Age distribution of reported cases of blindness in both eyes and number and per cent due to diabetes: England, 1948-1950

Age periods (at registration)	Number		Per cent	
	Total blind	Total due to diabetes	Diabetes of total blind	Diabetics of specified age of total diabetes*
All ages	18150	775	4.3	
Total, known ages	17549	739	4.2	100.0
Under 20	616	0	—	—
20-29	283	10	3.5	1.4
30-39	456	24	5.3	3.2
40-49	786	42	5.3	5.7
50-59	1478	100	6.8	13.5
60-69	3198	291	9.1	39.4
70 & over	10732	272	2.5	36.8
Unknown	601	36	6.0	

*Of known age.

Source: *The Causes of Blindness in England, 1948-1950*, by Arnold Sorsby, Ministry of Health, London, 1953.

TABLE 7

Diabetes as a cause of blindness in both eyes, number reported and per cent distribution according to condition causing blindness. By sex: England, 1948-1950

	Both Sexes		Males		Females	
	Number	Per cent of total	Number	Per cent of total	Number	Per cent of total
All Conditions	775	100.0	180	100.0	595	100.0
Retinopathy	677	87.4	148	82.2	529	88.9
Eyeball	82	10.6	27	15.0	55	9.2
Other	16	2.1	5	2.8	11	1.8

Source: *The Causes of Blindness in England, 1948-1950*, by Arnold Sorsby, Ministry of Health, London, 1953.

The proportion of cases of blindness due to diabetes increased fairly steadily with age to a peak of 9.1 per cent of the total at ages 60 to 69. In the age group, 70 and over, the proportion fell sharply to 2.5 per cent of the total number (see Table 6).

Nevertheless, more than one-third of the cases of blindness due to diabetes were recorded at ages 70 and over, while nearly 40 per cent additional were be-

tween ages 60 and 69. No cases were reported under age 20, and 10, or 1.4 per cent of the total, were between ages 20 to 29.

Retinopathy was the predominant cause of blindness due to diabetes, accounting for about 7 out of 8 cases for both sexes combined (see Table 7). The proportion with retinopathy was appreciably higher in females than in males.