FATAL SYPHILIS*

A REVIEW OF CERTIFICATION IN LIVERPOOL, 1938–1943

BY

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After the Local Government (England) Act of 1929 came into force the Hospital Committee of the Local Authority became responsible for the administration of the large Poor Law hospitals in its area, and cooperation between the medical officer of health and his venereal diseases officer made possible a survey of the late results of syphilis. Two sources supplied the necessary information :

(1) death certificates of all persons normally resident in the area ;

(2) notifications of admission to hospital of persons suffering from the late effects of syphilis.

A special form on which the essential data could be entered was issued to all local hospitals, but it was possible to include neither admissions to hospitals outside the area, nor deaths occurring outside these hospitals, although the name, age, address, and occupation as well as the cause of death entered on the death certificate gave valuable information. The period covered was from June 29, 1938, to February 23, 1943. The form adopted is reproduced in Fig. 1.

Section A of the form was expected to be completed by the resident medical officer of the hospital for admissions or deaths in hospital. The date of treatment at a particular clinic allowed the city venereal diseases officer to abstract from the clinic records the necessary information to complete Section B and Section C. In this way it was hoped to be able to estimate within limits the effect of the original treatment. Unfortunately, the tenure of resident medical officers' appointments is short and the system was frequently subject to periods of desuetude.

The material collected is summarized in Table I (opposite).

Section (1) comprises deaths which were definitely due to syphilis as far as could be ascertained. Five deaths from abdominal aneurysm and one from dissecting aneurysm also occurred during the period but are not included at all.

Confidential

City of Liverpool

NEUROSYPHILIS OR VASCULAR SYPHILIS

Section A

Institution ..... Case or Death (delete as necessary)

Name ..... Age.....

Address .....

Occupation .....

History.....

Type of Disease

Symptoms

Physical Signs

Wassermann Reaction : Blood..... C.S.F.....

Other Tests .....

C.S.F. Pressure .....

Cells .....

Protein .....

Globulin .....

Gold Curve.....

Result of *post mortem* (if any).....

Date of primary infection.....

Where treated.....

Section B **Report of Clinic**

When treated first .....

Date of infection (if known).....

Stage of Disease..... Initial W.R. .....

Treatment received in Liverpool.....

Subsequent W.R..... Date.....

Latest W.R. and C.S.F. report.....Date.....

History .....

Section C **Summary**

Diagnosis.....

Treatment (Effectual..... Ineffectual..... Late....)

Latent period in years.....

FIG. 1.—Form for collection of data on individual cases.

Section (2) shows cases in which it could be disputed that syphilis actually caused death. Under the heading " Syphilis a Contributory Cause " are included such entries as :

(1) Tabes dorsalis, (2) Uraemia, (3) Prostatic hypertrophy.

(1) Pulmonary tuberculosis, (2) Syphilis.

(1) Myocarditis, (2) Tertiary syphilitic ulceration.

(1) Carcinoma of the cervix, (2) Syphilis.

(1) Eclampsia, (2) Abortion, (3) Syphilis.

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TABLE I

DEATHS DIRECTLY DUE TO SYPHILIS OR ITS TREATMENT OR IN WHICH SYPHILIS WAS IMPLICATED

	Certified Cause of Death	Age Group (yrs)					Treatment		Died in Institution	Sex		Total Cases
		Under 40	41–50	51–60	61–70	Over 70	Early	Late		Men	Women	
(1) Death indisputably due to Syphilis	Tabes Dorsalis	3	7	13	13	5	—	8	34	35	6	41
	Tabo-paresis	—	2	—	—	—	—	1	2	1	1	2
	General Paralysis	2	16	11	6	—	1	6	35	25	10	35
	Cerebral or Neurosyphilis	1	5	10	3	1	—	3	19	14	6	20
	Neurosyphilis and Aortitis	2	5	5	1	—	—	3	11	10	3	13
	Syphilitic Aortitis	2	6	11	7	4	—	4	28	22	8	30
	Syphilitic Aortic Valve Disease	2	3	9	5	2	—	1	19	16	5	21
	Thoracic Aneurysm	3	2	13	11	2	—	2	18	25	6	31
	Ruptured Thoracic Aneurysm	2	3	4	7	3	—	1	7	14	5	19
	Syphilis	3	5	9	6	3	—	3	19	13	13	26
	Totals	20	54	85	59	20	1	32	192	175	63	238
(2) Death with Syphilis implicated	Syphilis as Contributory Cause	2	3	4	12	1	—	1	20	13	9	22
	Syphilitic Cardio-aortic Disease and Myocarditis	2	3	6	3	—	—	—	12	11	3	14
	Syphilitic Cirrhosis of Liver	—	2	2	—	—	—	1	4	2	2	4
	Totals	4	8	12	15	1	—	2	36	26	14	40
(3) Death due to Effects of Treatment	Malaria	—	1	3	—	—	—	4	4	2	2	4
	Post-arsphenamine Hepatitis	3	1	—	—	—	3	1	3	3	1	4
	Totals	3	2	3	—	—	3	5	7	5	3	8
	Grand Total	27	64	100	74	21	4	39	235	206	80	286

Such causes of death as " Syphilitic myocarditis " or " Specific cardio-aortic disease " are suspect, since death may well have been due to coronary occlusion unrelated to syphilis. On the other hand " Syphilitic cirrhosis of the liver " includes one patient who died after the exhibition of a mercurial diuretic for ascites, and another who died after arsenic administration following preliminary treatment with iodides and heavy metal.

Section (3) shows deaths which undoubtedly resulted from treatment.

In Table I " Treatment " means treatment given in venereal diseases clinics and wards, and not that given in general wards and mental hospitals. In Section (1) only one case was found to have been treated in the early stages of the disease. This man reported in 1919 with secondary syphilis and in the course of 2 months received six injections of 0·45 g. neoarsphenamine and six injections of grey oil concurrently before he defaulted ; 19 years later he died of general paralysis of the insane.

Institutions were responsible for reporting 235 of the 286 deaths notified. " Thoracic aneurysm " and " Rupture of thoracic aneurysm " where syphilis is not mentioned on the death certificate show the highest proportion of non-institutional notifications (thirteen out of 31 and twelve out of 19 respectively).

The disparity between the sexes in Table I is seen in cardio-aortic disease (where women contribute only to the extent of 24 per cent.) and, more especially, in tabes dorsalis (women only 15 per cent.). In the whole Table deaths of females constitute only 28 per cent. of the total. The earlier death rate of persons certified to have died suffering from syphilis is shown in Table II (see also Fig. 2).

TABLE II

AVERAGE PER CENT. DEATH RATE OF PERSONS OVER 40 YEARS OF AGE. (LIVERPOOL 1938–1943)

Age Group (yrs)	41–50	51–60	61–70	Over 70	Total
All Deaths	10	19	29	42	100
Deaths included in Section (1) of Table I	25	39	27	9	100

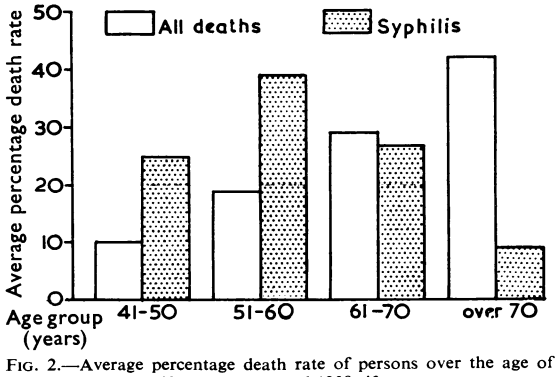

FIG. 2.—Average percentage death rate of persons over the age of 40 years, Liverpool 1938–43.

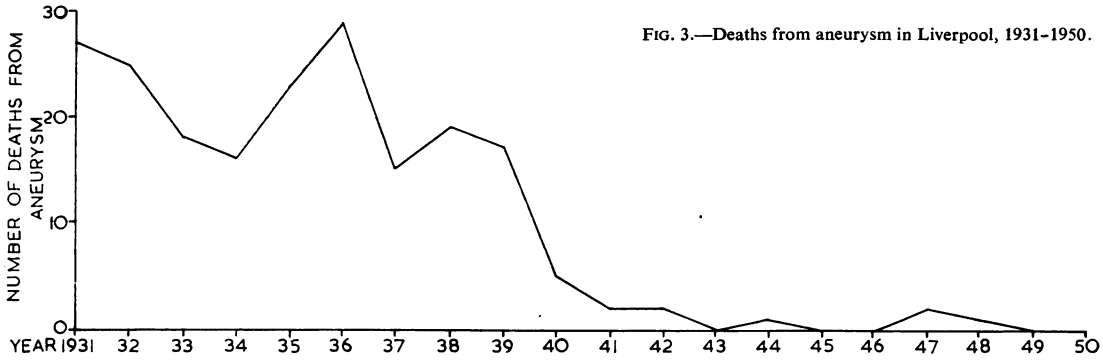

FIG. 3.—Deaths from aneurysm in Liverpool, 1931-1950.

An interesting point that has appeared in reading through the mortality statistics in Liverpool since 1930 has been the sudden decline of deaths from aneurysms of all kinds since 1940 (see Fig. 3). While there may be other reasons, one cannot but believe that the establishment of venereal disease treatment centres in 1917 has had a definite bearing on this rapid decline.

The figures for general paralysis of the insane and tabes dorsalis have been reduced to one-fifth of their previous dimensions over this same period but do not show such a precipitous fall as aneurysms. Deaths from aneurysms in the 11 years since 1939 are fewer than in any single year in the preceding decade.

Summary

Tables compiled from material obtained from a special report form of deaths from syphilis, demonstrate the preponderance of male patients and institutional certifications, the relative proportions of deaths from neurosyphilis and vascular syphilis, the possibility of erroneous certification in known syphilitics and the hazards of malarial and intravenous therapy.

Attention is drawn to the diminishing numbers of deaths from parenchymatous neurosyphilis and more especially from aneurysm since 1940. The tendency of untreated syphilitics to die from syphilis at an earlier age than normal and the absence of cases treated early, except in one instance, is observed.

My thanks to Professor H. L. Sheehan are herewith tendered for his review of the causes of death.