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THE

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STATISTICAL REVIEW

OF

ENGLAND AND WALES

FOR THE YEAR

1956

PART III

COMMENTARY

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1. New or recent changes in presentation

Standard regions, conurbations, urban and rural aggregates.

All figures given for regions relate to the standard regions whose constitution is set out in Note 6.

Six conurbation areas are distinguished in certain tables. For the constitution and the list of conurbations *see* Note 7.

Urban and rural aggregates relate to aggregates of conurbations, and of areas outside conurbations. The latter are sub-divided into (*a*) urban areas with (i) populations of 100,000 and over, (ii) populations of 50,000 and under 100,000 and (iii) populations under 50,000 (for this purpose areas are allocated according to the size of their enumerated population at the 1951 Census) and (*b*) rural districts. " Urban areas " includes boroughs and urban districts as defined under the Local Government Acts, and rural districts are as defined under those Acts.

2. Populations

The estimates of population appearing in this volume and described as " home " or " total " populations, have the following content :

Home population—the population, of all types, actually in England and Wales, distributed by area according to residence.

Total population—the home population *plus* members of H.M. Forces belonging to England and Wales and serving overseas but *excluding* the Forces of other countries temporarily in England and Wales.

The mid-1956 estimates of population, both national and local, have been based upon final figures from the full tabulations of the 1951 Census.

3. Numbering of Tables

Of the tables referred to in this review, those numbered in Arabic numerals will be found in " Part I, Tables, Medical " and those lettered will be found in " Part II, Tables, Civil " for the year in question, while those numbered in Roman numerals appear in this volume.

4. Indication of Significance

Rates based upon less than 20 births, deaths or notifications are distinguished by italic type as a warning to the user that the smallness of the experiences may affect their significance (*see also* page 9 of the 1936 *Statistical Review*, Text Volume).

Rates given as 0 indicate that the rate is less than half the final digit shown. A dash (—) in any column indicates that there were no events.

5. Definition of Areas

London A.C. = administrative county of London which consists of the City of London (including the Inner and Middle Temples) and the Metropolitan Boroughs.

C.B. = county borough ; **M.B.** = municipal borough ; **Met. B.** = metropolitan borough ; **U.D.** = urban district ; **R.D.** = rural district.

6. Standard Regions

The constitution of the standard regions of England and Wales used in this volume is as follows :

REGION I *Northern*	REGION IV *Eastern*	REGION VI *Southern*	*Wales II* (*Remainder*)
Cumberland	Bedfordshire	Berkshire	Anglesey
Durham	Cambridgeshire	Buckinghamshire	Caernarvonshire
Northumberland	Ely, Isle of	Dorset	Cardiganshire
Westmorland	Essex, Part of [2]	Oxfordshire	Denbighshire
Yorkshire, North Riding	Hertfordshire, Part of [3]	Southampton	Flintshire
	Huntingdonshire	Wight, Isle of	Merionethshire
REGION II	Norfolk		Montgomeryshire
East and West Ridings	Suffolk, East	REGION VII	Pembrokeshire
Yorkshire, East Riding	Suffolk, West	*South Western*	Radnorshire
Yorkshire, West Riding		Cornwall	
	REGION V	Devon	REGION IX
REGION III	*London and South Eastern*	Gloucestershire	*Midland*
North Midland	Essex, Part of [4]	Somerset	Herefordshire
Derbyshire, Part of [1]	Hertfordshire, Part of [5]	Wiltshire	Shropshire
Leicestershire	Kent		Staffordshire
Lincolnshire—	London Admin. County	REGION VIII	Warwickshire
Parts of Holland	Middlesex	*Wales I* (*South East*)	Worcestershire
Parts of Kesteven	Surrey	Brecknockshire	
Parts of Lindsey	Sussex, East	Carmarthenshire	REGION X
Northamptonshire	Sussex, West	Glamorganshire	*North Western*
Nottinghamshire		Monmouthshire	Cheshire
Peterborough, Soke of			Derbyshire, Part of [6]
Rutland			Lancashire

1. All except Buxton M.B., Glossop M.B., New Mills U.D., Whaley Bridge U.D. and Chapel en le Frith R.D.

2. All except East Ham C.B., West Ham C.B., Chingford M.B., Wanstead and Woodford M.B., Leyton M.B., Walthamstow M.B., Ilford M.B., Barking M.B., Dagenham M.B., Waltham Holy Cross U.D. and Chigwell U.D.

3. All except Barnet U.D., Bushey U.D., Cheshunt U.D., East Barnet U.D. and Elstree R.D.

4. All areas stated in 2 above.

5. All areas stated in 3 above.

6. All areas stated in 1 above.

7. Conurbations

The conurbation areas used in this volume are those which were agreed in 1950, under the aegis of the Interdepartmental Committee on Social and Economic Research and the Central Statistical Office, for the presentation of official statistics generally.* They each consist of an aggregation of entire local authority areas and are constituted as follows :

Tyneside

Durham		*Northumberland*	
Gateshead C.B.	Felling U.D.	Newcastle upon Tyne C.B.	Longbenton U.D.
South Shields C.B.	Hebburn U.D.	Tynemouth C.B.	Newburn U.D.
	Jarrow M.B.		Wallsend M.B.
	Whickham U.D.	Gosforth U.D.	Whitley Bay M.B.

West Yorkshire

Yorkshire, West Riding

Bradford C.B.	Aireborough U.D.	Heckmondwike U.D.	Ossett M.B.
Dewsbury C.B.	Baildon U.D.	Holmfirth U.D.	Pudsey M.B.
Halifax C.B.	Batley M.B.	Horbury U.D.	Queensbury and Shelf U.D.
Huddersfield C.B.	Bingley U.D.	Horsforth U.D.	Ripponden U.D.
Leeds C.B.	Brighouse M.B.	Keighley M.B.	Rothwell U.D.
Wakefield C.B.	Colne Valley U.D.	Kirkburton U.D.	Shipley U.D.
	Denby Dale U.D.	Meltham U.D.	Sowerby Bridge U.D.
	Denholme U.D.	Mirfield U.D.	Spenborough M.B.
	Elland U.D.	Morley M.B.	Stanley U.D.

* See *Census* 1951, *England and Wales*, *Preliminary Report*, page xxii, H.M.S.O. price 5*s.* 0*d.* net ; also *Census* 1951, *England and Wales*, *Report on Greater London and Five Other Conurbations*, page xv, H.M.S.O. price £5 5*s.* 0*d.* net.

South East Lancashire

Cheshire	*Lancashire*		
Stockport C.B.	Bolton C.B.	Horwich U.D.	Urmston U.D.
	Bury C.B.	Irlam U.D.	Wardle U.D.
Alderley Edge U.D.	Manchester C.B.	Kearsley U.D.	Westhoughton U.D.
Altrincham M.B.	Oldham C.B.	Lees U.D.	Whitefield U.D.
Bowdon U.D.	Rochdale C.B.	Littleborough U.D.	Whitworth U.D.
Bredbury and Romiley U.D.	Salford C.B.	Little Lever U.D.	Worsley U.D.
Cheadle and Gatley U.D.	Ashton-under-Lyne M.B.	Middleton M.B.	
Dukinfield M.B.	Audenshaw U.D.	Milnrow U.D.	
Hale U.D.	Chadderton U.D.	Mossley M.B.	
Hazel Grove and Bramhall U.D.	Crompton U.D.	Prestwich M.B.	
Hyde M.B.	Denton U.D.	Radcliffe M.B.	
Marple U.D.	Droylsden U.D.	Royton U.D.	
Sale M.B.	Eccles M.B.	Stretford M.B.	
Stalybridge M.B.	Failsworth U.D.	Swinton and Pendlebury M.B.	
Wilmslow U.D.	Farnworth M.B.	Tottington U.D.	
Disley R.D.	Heywood M.B.		

Merseyside

Cheshire		*Lancashire*	
Birkenhead C.B.	Ellesmere Port M.B.	Bootle C.B.	Huyton-with-Roby U.D.
Wallasey C.B.	Hoylake U.D.	Liverpool C.B.	Litherland U.D.
	Neston U.D.		
Bebington M.B.	Wirral U.D.	Crosby M.B.	

West Midlands

Staffordshire		*Warwickshire*	*Worcestershire*
Smethwick C.B.	Darlaston U.D.	Birmingham C.B.	Dudley C.B.
Walsall C.B.	Rowley Regis M.B.		
West Bromwich C.B.	Sedgley U.D.	Solihull M.B.	Halesowen M.B.
Wolverhampton C.B.	Tettenhall U.D.	Sutton Coldfield M.B.	Oldbury M.B.
	Tipton M.B.		Stourbridge M.B.
Aldridge U.D.			
Amblecote U.D.	Wednesbury M.B.		
Bilston M.B.	Wednesfield U.D.		
Brierley Hill U.D.	Willenhall U.D.		
Coseley U.D.			

Greater London

London (whole county) *Middlesex* (whole county) *Surrey*		*Kent*	*Essex*
Croydon C.B.	Kingston-upon-Thames M.B.	Beckenham M.B.	East Ham C.B.
		Bexley M.B.	West Ham C.B.
Banstead U.D.	Malden and Coombe M.B.	Bromley M.B.	
Barnes M.B.		Chislehurst and Sidcup U.D.	Barking M.B.
Beddington and Wallington M.B.	Merton and Morden U.D.	Crayford U.D.	Chigwell U.D.
Carshalton U.D.	Mitcham M.B.	Erith M.B.	Chingford M.B.
	Richmond M.B.	Orpington U.D.	Dagenham M.B.
Coulsdon and Purley U.D.	Surbiton M.B.	Penge U.D.	Ilford M.B.
Epsom and Ewell M.B.	Sutton and Cheam M.B.		Leyton M.B.
Esher U.D.	Wimbledon M.B.	*Hertfordshire*	Waltham Holy Cross U.D.
			Walthamstow M.B.
		Barnet U.D.	Wanstead and Woodford M.B.
		Bushey U.D.	
		Cheshunt U.D.	
		East Barnet U.D.	
		Elstree R.D.	

8. Assignment of Vital Statistics by Area

In all tables births and stillbirths are classified according to the area of usual residence of the parents (or mother), and deaths according to the usual residence of the deceased. The definition of usual residence for this purpose was modified in 1953, the main change being that inmates of hospitals for the chronic sick and of mental and mental deficiency hospitals were in that year regarded as having been resident in the hospital. (A similar change with regard to persons dying in accommodation provided under Parts III and IV of the National Assistance Act, 1948, had already been brought into effect during 1952.) Rates for areas in 1953 are therefore not comparable with those for 1952. Details of the new definitions were conveyed to Medical Officers of Health in 1952 in a memorandum which was reproduced in the 1953 Text Volume. The method of classification of chronic sick hospitals for this purpose was slightly modified in 1954 and from that year rates for a certain number of smaller areas may not be comparable with those of 1953.

9. General

See also the Explanatory Notes to the Tables volumes, Parts I and II.

CORRIGENDA

Statistical Review, 1954, Commentary Volume

Page 224 **Central Index of Service Voters :**
line 3, *for* 148,963 *read* 79,579
line 8, *for* 173,651 *read* 104,267

Statistical Review, 1955, Commentary Volume

Page 171 Table LXXXV.
Males, 20—, 1948 *for* 73 *read* 74

Page 220 Table CXV.
Irish Republic—Marriages
1952 *for* 10·7 *read* 10·8
1953 *for* 10·6 *read* 10·8
1954 *for* 10·7 *read* 10·8
1955 *for* 11·1 *read* 11·3
Irish Republic—Live births
1952 *for* 21·8 *read* 21·9
1953 *for* 21·1 *read* 21·2
1954 *for* 21·1 *read* 21·3
1955 *for* 21·2 *read* 21·1
The figures appearing in the corresponding table in previous Commentary (Text) Volumes should also be amended.

Page 238 **Central Index of Service Voters :**
line 3, *for* 163,046 *read* 81,244
line 8, *for* 184,195 *read* 102,393

INTRODUCTION

Registrars in England and Wales took particulars in 1956 of over seven hundred thousand births and of rather more than half a million deaths. Statistics derived from their records of these events, together with figures based on information obtained on other occasions and from other sources, have been published already in the first two parts of the *Statistical Review* for 1956. Mainly a commentary on those statistics, this third part also gives an account of some of the other matters that occupied the General Register Office during that year.

The results of other statistical activities of the Office are published in *Supplements to the Statistical Review* and in the series published as *Studies on Medical and Population Subjects*. *Supplements* concerned with statistics of mental health and of cases of cancer have recently been published. A further *Supplement* giving statistics based on hospital in-patient records and *Studies* concerned with mental health and with general practitioners' records are in preparation.

This commentary puts the figures for 1956 in perspective, reviews trends and, so far as possible, explains changes. The aim is to assist administrators, research workers and others by underlining the main features of the year's population and health statistics.

In addition to this there is a note on work done in 1956 under the auspices of the United Nations, the World Health Organization and other bodies that have an interest in aiding international research by promoting the study of technical and administrative changes needed to make the population and health statistics of different countries more comparable one with another.

The Advisory Committee on Medical Nomenclature and Statistics, under the chairmanship of Sir Ernest Rock Carling, has continued to give much valuable advice and assistance to the Registrar General, particularly in relation to the various medical enquiries undertaken by the Office. A Report on the Committee's work in 1955 and 1956 is on pages 250–253.

Population

The home population, i.e. that actually in England and Wales, has reached a figure of 44·7 millions and is increasing by about 180 thousands a year. The actual increase in any one year depends upon three elements : births, deaths and migration. The flow of births has recently shown a tendency to increase from a level trend, and an annual average of 675 thousand in the five years 1951–55, to 700 thousand in 1956. Deaths have been increasing slowly as a natural consequence of a tendency for the population to grow older in age structure as the larger generations of the nineteenth century pass away. Superimposed on this trend, however, there are sometimes large fluctuations arising from the irregular incidence of epidemics of influenza and other diseases ; no such disturbance occurred in 1956. The migration balance of England and Wales is very small, net emigration overseas being offset by immigration from Scotland and Ireland.

Forecasts made in 1956 indicated that the total population, including members of H.M. Forces overseas but excluding Commonwealth and Foreign Forces in this country, which was 44·8 millions at the middle of the year would rise to 48·5 millions in 1996 if the fertility, mortality and migration trends then current were to continue.

A study of local authority populations has revealed a continuation of the outward movement from the conurbations and large towns to surrounding areas and to the New Towns.

Births

As already indicated, there has been a rise in the annual number of births. The total live births for 1956 at 700,335 was the highest since 1949. The birth rate was 15·6 per 1,000 population, an increase of nearly 5 per cent over the previous year. This was the continuation of a marked upturn which began in 1955.

More detailed analysis indicates that this rise in fertility affected women of all marriage durations except the very longest, and at most ages and parities.

So far as long term prospects are concerned it appears from the detailed analyses that current generations are likely to replace themselves, with a little to spare, with completed families of rather more than two children on the average.

The present volume includes the first detailed analysis of multiple births since the analysis published in the *Statistical Review for the Five Years 1946–50*, Text, Civil. Post-war twin rates have been higher than in 1938–45, but there is no clear evidence of a further increase since 1946–50.

Marriages

In 1956 there were 352,944 marriages contracted in England and Wales, about 5,000 less than in 1955. The crude marriage rate, 15·7 persons married per 1,000 total population, declined slightly compared with 1955. This was due to the smaller number of unmarried persons of marriageable age in the population. There has been a continued rise in marriage rates at young ages.

The present volume contains a detailed table of marriage rates based on the experience of 1951–55. These rates imply the attainment of proportions married higher than ever reached before and a continued reduction in the mean age at marriage.

At the most usual ages of marriage the number of unmarried women no longer exceeds that of men and approximate balance has been reached.

Divorce and remarriage

In 1956, 28,426 divorce petitions were filed and 26,265 decrees made absolute compared with 28,314 petitions and 26,816 decrees in 1955. After allowing for other factors such as the increase in the number of married couples at risk, changes in legislation and the long term rising trend of divorce, it seems likely that the incidence of divorce was doubled as a consequence of World War II. The proportion of divorced persons who remarry continues in the region of three quarters, a little higher for men than for women.

Mortality

There were 521,331 deaths registered in England and Wales in 1956. The crude death rates were 12·5 per 1,000 males and 10·9 per 1,000 females, both rates being the same as for 1955. Expectation of life at birth, on the basis of mortality in 1956, was 68 years for males and 73 years for females.

In 22 per cent of all deaths a post-mortem had been performed or there was a record of an operation having been performed. The percentage was over 60 per cent for deaths from maternal causes (73 per cent), meningococcal infections (69 per cent) and ulcer of stomach and duodenum (61 per cent).

Infant mortality

The infant mortality rate of 23·7 per thousand related live births in 1956 was one of the lowest in the world. In Europe, only Sweden and the Netherlands had lower rates.

Mortality from gastro-enteritis declined by 62 per cent between 1951 and 1956, and there were also considerable reductions in mortality in this period from pneumonia and bronchitis (34 per cent) and the infective group of postnatal diseases (55 per cent). Mortality due to congenital malformations, postnatal asphyxia and birth injuries remained relatively static.

The stillbirth rate of 22·9 per 1,000 total births showed little change from 1955. Regional rates varied from 26·8 in Wales to 19·3 in the London and South Eastern Region.

Tuberculosis

There were 3,804 male and 1,571 female deaths in 1956. Between 1955 and 1956 there was a decline of 17 per cent in the death rate for males and of 20 per cent for females. For those between the ages of 15 and 64 the rate fell by about 20 to 25 per cent.

The crude notification rates of 88 per 100,000 living for males and of 55 per 100,000 living for females were the lowest since the present form of records was started in 1938.

Cancer

In 1956, 48,935 men and 43,775 women were recorded as having died from cancer. The number of deaths from cancer of the lung (18,186) was about 5 per cent higher for both sexes in 1956 than in 1955.

Death rates from leukaemia in children under 15 since 1950 show no sign of any regular trend, but there has been a steady increase in the rates at ages over 15. This trend is particularly marked for deaths from myeloid leukaemia ; the increases have largely occurred in the older age-groups.

Accidental and violent deaths

In 1956 there were 21,870 deaths due to accidents and violence. Death rates per million living for these causes have increased from 568 in 1952 to 604 in 1956 for males and from 298 in 1952 to 383 in 1956 for females. Between these years the death rate from motor vehicle accidents increased by one sixth for males and by one third for females.

Deaths of 3,198 males and 2,084 females in 1956 were attributed to suicide. Domestic gas poisoning was the principal means of suicide used. There were 6,908 deaths from accidents in the home and residential institutions in 1956, 58 per cent of them being of people aged 75 and over.

Certification of cause of death

During 1955 an investigation was carried out by the General Register Office, with the co-operation of ten hospitals where post-mortem examinations were performed as a routine, to gain information on the correlation between clinical and post-mortem diagnoses. For all deaths occurring in these hospitals during a period of six months, the cause of death was assessed by a clinician before a post-mortem was carried out ; in all cases where a post-mortem was then carried out, the cause of death as assessed by the pathologist taking into account the post-mortem findings was also given. The results were then compared.

In 19 per cent of the deaths there was a disagreement of fact between the clinician's and the pathologist's assessment of the cause of death. There is some evidence to show that some diseases, notably cancer of the lung, are being under-diagnosed by clinicians, but the net statistical effect of the disagreements is generally small. In the vast majority of cases where there was disagreement it was most unlikely that a more accurate clinical diagnosis could have in any way altered the outcome.

Therapeutic misadventures

The causes of the 692 deaths that occurred in the years 1954–56 with some indication of therapeutic misadventure have been analysed in detail.

In 302 of these cases death was due to an adverse reaction to a drug or therapy and in a further 287 to an overdose of a drug, especially aspirin or some kind of barbiturate.

In only 13 cases out of the 692 was death due to a mistake in the drug administered, including six where the drug was medically administered.

International co-operation in population and health statistics

The Statistical Commission of United Nations, having noted that more than 150 countries or areas, with a total population exceeding 2,000 million, had been enumerated during the decade 1945–54, recommended that the Economic and Social Council should encourage governments to take a census during the ten year period 1956–65, but preferably around 1960, and that in doing so they should take into account the outcome of regional and international discussion on the principles of census taking.

At the first of the two sessions held by the Economic and Social Council during 1956 the Under-Secretary for Economic and Social Affairs, expressing the view that many countries were hampered in their economic and social development by the lack of adequate statistics, particularly those necessary to enable a comprehensive view to be taken of the economic, social and demographic factors affecting their development, suggested that more might be done by way of technical assistance to help the governments concerned to remedy this defect.

The Conference of European Statisticians extended the functions of its Working Group on Censuses of Population to cover housing censuses. The Working Group itself met for a second time in November 1956 and, as before, had a member from the Office in the Chair. The Group reported on draft principles elaborated by the United Nations for guidance in taking censuses of population and housing, with particular reference to the use of sampling methods.

The Office was represented on the United Kingdom delegation to the Ninth World Health Assembly which resolved to adopt the *Additional Regulations of the 21 May 1956* amending the *Nomenclature Regulations 1948* and to provide for the changes to the International Lists of Diseases and Causes of Death proposed by the Seventh Revision Conference in 1955. The Director-General of WHO was requested to issue a revised edition of the *Manual of the International Statistical Classification of Diseases, Injuries and Causes of Death.*

A meeting of the WHO Expert Committee on Health Statistics, for which the Office provided the elected *Rapporteur*, dealt with an extensive agenda of which morbidity statistics were a prominent feature.

An Advisory Group on the Prevention of Accidents in Childhood arranged by the WHO Regional Office for Europe pointed to the fact that in European countries accidents to children outrank any other source of mortality in children over one year of age.

The year was marked by the holding in London of the Fourth Conference of British Commonwealth Statisticians. The Office was represented on the United Kingdom delegation and population statistics, with particular emphasis on various aspects of census taking, were among the demographic subjects discussed.

Thirty-five visitors from eighteen overseas countries came to the General Register Office during 1956.

General Register Office,
Somerset House,
London, W.C.2.
October, 1958.

POPULATION

The estimated population of England and Wales at mid-1956 is shown in Table I.

Table I.—Estimated population of England and Wales, mid-1956

(*Thousands*)

	Persons	Males	Females
Total	44,821	21,669	23,152
Home	44,667	21,517	23,150
Civilian	44,151	21,013	23,138

The three types of population shown are based on different concepts. The *total* population is an estimate of the population belonging or economically attached to England and Wales. It therefore includes an estimate of the members of H.M. Forces that may be regarded as drawn from England and Wales wherever they are stationed, but excludes members of H.M. Forces drawn from other parts of the United Kingdom and Commonwealth and members of the Forces of other countries, even though they are temporarily in England and Wales. Merchant seamen of England and Wales and visitors abroad ought to be (but are not) included, and visitors to this country ought to be (but are not) excluded ; it is assumed, however, that the two numbers are about the same so that the estimate is not affected. The *home* population is the population of all types actually in England and Wales. It therefore includes all Armed Forces in England and Wales even though they are drawn from other parts of the United Kingdom and Commonwealth or from any other country. It excludes any of H.M. Forces outside England and Wales even though they are drawn from England and Wales. Merchant seamen of England and Wales and visitors abroad are excluded, but visitors to England and Wales are included. The *civilian* population excludes all Armed Forces.

Sex and Age

The estimates of the total, home and civilian populations of England and Wales by sex and age at mid-1956 are shown in Tables 1 and A2.

Marital condition

Estimates of the total population by sex, age and marital condition are shown in Table A3.

Table II.—Estimated total population by sex, age and marital condition, mid-1956, and the change between mid-1951 and mid-1956, England and Wales

(*Thousands*)

Age Group	Males				Females			
	All Conditions	Single	Married	Widowed and Divorced	All Conditions	Single	Married	Widowed and Divorced
All Ages ..	**21,669**	**9,382**	**11,477**	**810**	**23,152**	**9,048**	**11,522**	**2,582**
0–14 ..	5,203	5,203	—	—	4,962	4,962	—	—
15–44 ..	9,089	3,566	5,431	92	9,096	2,758	6,161	177
45–64 ..	5,332	446	4,654	232	5,966	837	4,292	837
65 and over	2,045	167	1,392	486	3,128	491	1,069	1,568
Change : mid-1951 to mid-1956								
All Ages ..	**+436**	**+ 14**	**+432**	**−10**	**+378**	**−178**	**+428**	**+128**
0–14 ..	+229	+229	—	—	+198	+198	—	—
15–44 ..	−281	−241	− 46	+ 6	−368	−379	+ 45	− 34
45–64 ..	+419	+ 21	+399	− 1	+284	− 33	+320	− 3
65 and over	+ 69	+ 5	+ 79	−15	+264	+ 36	+ 63	+165

Sex ratios

Only in the youngest age-group shown in Table III are there more males than females. About 106 boys are born for every 100 girls, but the death rates for males are higher than those for females at all ages so that the numbers of males per thousand females falls with increasing age, until at ages over 75 there are nearly twice as many women as men.

Table III.—Males per 1,000 females in the total population

Age Group	Mid-1951	Mid-1956
0–4	1,050	1,052
20–24	1,003	1,027
30–34	980	996
40–44	978	970
50–54	880	944
60–64	781	770
70–74	708	670
75 and over	618	575

Comparing the 1956 ratios with those for 1951 shows that the fall of death rates at younger ages has prolonged the excess of males to older ages and increased the ratios of males to females at all ages up to 55. At young ages the male and female death rates have fallen by about the same proportion so the difference between the rates has also fallen. It therefore takes longer for the difference between the death rates for males and females to balance

with the excess of boys born. At mid-1956 there were 999 men in the age-group 15–44 for every 1,000 women. In 1951 there were 990 ; at the 1911 Census only 926. At older ages, however, the death rates for males have fallen much less than those for females, consequently the excess of women has been increasing. At mid-1956 there were 654 men for every 1,000 women over 65, at mid-1951 there were 690, and at the 1911 Census there were 757.

Age structure

The rise since 1951 in the numbers of children is due mostly to the larger number of live births between mid-1951 and mid-1956 than between mid-1936 and mid-1941. (The older group are the children who passed their fifteenth birthday between mid-1951 and mid-1956.) The effect of the increased number of live births is added to by the decline of infant mortality ; about 973 of every thousand babies born in 1951–55 survived to one year old, but only 945 out of those born in 1936–41 did so.

The fall in the numbers aged 15–44 was basically due to the smaller number of births between mid-1936 and mid-1941 than between mid-1906 and mid-1911. (The older group are the people who passed their forty-fifth birthday between mid-1951 and mid-1956.) This basic influence was much modified, however, because the later generation had experienced a shorter period of life and much lower mortality rates. There were 4,605 thousand live births in 1906–10 and at mid-1956 this generation numbered about 3,300 thousand. There were only 3,040 thousand live births in 1936–40, and at mid-1956 this generation numbered about 2,810 thousand. This change therefore reduced the population aged 15–44 by 490 thousand. The remaining loss between mid-1951 and mid-1956 was about 165 thousand deaths of people who were aged 15–44 at mid-1951.

The rise in the number of people aged 45–64 is due almost entirely to mortality changes. There were nearly as many births in 1886–90 as in 1906–10, but the younger group (those passing their forty-fifth birthday between mid-1951 and mid-1956) had experienced a shorter period of life and lower mortality rates ; they numbered 3,300 thousand at mid-1956, but the older group numbered only 1,880 thousand. Only about 690 thousand of those aged 45–64 at mid-1951 died between mid-1951 and mid-1956, leaving out of the 3,300 thousand entering the age-group from below a net intake of 2,600 thousand. This more than replaced the 1,880 thousand leaving the group by ageing.

The group aged 65 and over was increased by the 1,880 thousand who had a sixty-fifth birthday between mid-1951 and mid-1956 and survived to the end of the period, and was reduced by the 1,580 thousand or so of those aged 65 and over at mid-1951 who died before mid-1956.

It is possible to be fairly certain about future changes in the numbers in age-groups corresponding to the people already born. Thus the group aged 15–44 is likely to increase as the effect of falling mortality will outweigh the effect of smaller numbers of births. Similarly the two older groups will continue to increase as the effects of falling mortality continue ; this effect is slightly modified for the 45–64 group because the births originating the " Newcomers " to the group were fewer than those originating the " Leavers ". Expressed as a proportion of the whole population this group is not likely to alter much (though it will be a smaller proportion of the increased population aged 15–64). The proportion aged 65 and over in the population is likely to continue to increase ; by 1976 one person in six will be in this age-group.

Marital condition structure

The proportion married in the population aged 15 and over increased from 64·6 per cent at mid-1951 to 66·4 per cent at mid-1956. There was also an increase in the numbers of widowed and divorced women. This occurred solely in the oldest age-group.

In the reproductive age-group the proportion married rose from 61·6 per cent in 1951 to 63·7 per cent in 1956. There was, in fact, hardly any change in the numbers married, although the population of all conditions had fallen by about 650 thousand. This striking change in the marital condition structure of the population occurred as a result of the increase in the number of marriages and the reduction in the ages at which they take place. This is discussed in the chapter on Marriage.

In the 45–64 group the proportion married rose slightly from 77·6 per cent in 1951 to 79·2 per cent in 1956. This increase came more or less evenly from the single (which fell from 12·2 per cent to 11·4 per cent) and the widowed and divorced (which fell from 10·1 per cent to 9·5 per cent). The small fall in the proportion widowed and divorced has different explanations for the two sexes. For men the explanation is that the losses by age-transfer, deaths and new marriages are larger than the gains by widowhood and divorces. For women the gains are very slightly larger than the losses (and both, incidentally, are substantially larger than for men), but the group became smaller because of the ageing of war widows from the First World War. At mid–1951 there were about 100 thousand of these ; about 35 thousand of them were aged 60–64 and so passed their sixty-fifth birthday between mid–1951 and mid–1956.

In the group aged 65 and over the only striking changes are in the widowed and divorced. The men decreased in number and the women increased for the same reasons as were noted for the 45–64 group. Because of the higher death rates for men than for women the group of widows and divorced women of 65 and over gain much more than do the men both by age-transfer and by widowhood. Women's death rates are less than two-thirds as high as those for men of the same age, but there are more than three times as many widows and divorced women of 65 and over as there are widowers and divorced men, so that there are nearly twice as many deaths of widowed and divorced women as of widowed and divorced men of 65. This, however, is not sufficient to offset the effects of age-transfer and new widowhood. In addition, the 35 thousand or so war widows from the First World War who passed their sixty-fifth birthday between mid–1951 and mid–1956 contributed to the increase. That, however, is a once-for-all effect, and does not influence the trend. In 1891 there were 2,155 widows of 65 and over for every thousand widowers (the treatment of divorced people was not definite) ; by 1956 there were 3,226 or 3,020 if the First World War widows are excluded. Nearly 5 per cent of the total population aged 15 and over now consists of widows and divorced women aged 65 and over.

Local populations

Estimates of the home populations of all boroughs, urban districts and rural districts in England and Wales at mid–1956 are shown in Tables 12 and E.

Estimates of the home populations by sex and age in standard regions, Wales, conurbations and urban and rural aggregates are shown in Tables 2 and A4.

Estimates of the number of children under 1 year old, 1 but under 5 years old, and 5 but under 15 years old in administrative counties, county and metropolitan boroughs at mid-1956 have been published in the *Registrar General's Quarterly Return* No. 433 (1st Quarter of 1957) pages 28 and 29.

Population changes in the conurbations

The six conurbations in England contain about 17 million people ; half of this total is in Greater London alone. In the five years since the Census the conurbations have had a natural increase of more than 300 thousand but their home population has actually decreased slightly. The distribution of these changes between the six conurbations is shown in Table IV.

Table IV.—Population changes in the conurbations, mid–1951 to mid–1956

(*Thousands*)

Conurbation	Home Population change	Natural Increase	Balance of change	
			Thousands	Per cent of population
Greater London	−80	147	−227	−2·7
Tyneside	+ 7	24	− 17	−2·0
West Yorkshire	+ 1	16	− 15	−0·9
Merseyside	+ 9	52	−43	−3·1
South East Lancashire	+ 3	31	− 28	−1·2
West Midlands	+36	62	− 26	−1·1

These are substantial movements of population ; it is interesting to see where some of the people have gone.

The population of the eight London New Towns (Basildon, Bracknell, Crawley, Harlow, Hatfield, Hemel Hempstead, Stevenage, Welwyn Garden City) has increased by about 130 thousand in the five years. Part of this is natural increase, but it is probable that 120 thousand is migration and that the great majority of these came from Greater London. The counties adjoining the Greater London conurbation have all increased in population. Excluding the parts in the conurbation and the New Towns, and allowing for natural increase, Essex has gained about 90 thousand, Hertfordshire about 20 thousand, Kent about 35 thousand and Surrey about 45 thousand. With the New Towns gain of 120 thousand this makes a total of 310 thousand, substantially more than the Greater London loss of about 227 thousand. It is likely that the home counties have been receiving population from the rest of the country, possibly even from the other conurbations. It is possible, therefore, that the daytime population of the Greater London conurbation has not been reduced at all ; the movement into New Towns, which normally involves a change of workplace as well as a change of residence, may be being balanced by a movement from the rest of the country into the workplaces vacated by those who have gone to the New Towns.

The areas surrounding each of the other five conurbations seem to have gained less than the conurbations have lost. The amounts are summarised in Table V. The effects of natural increase are excluded throughout.

Table V.—Population movements from conurbations

(*Thousands*)

Conurbation	Loss	Area near conurbation	Gain of population	Loss of population from conurbation to other than neighbouring areas	Gain of population in neighbouring areas unaccounted for by conurbation loss
Greater London ..	227	London New Towns ..	120	—	83
		Rest of Home Counties ..	190	—	—
Tyneside	17	Castle Ward R.D.	2	—	—
		Darlington R.D. (Aycliffe New Town)	7	8	—
West Yorkshire ..	15		—	15	—
Merseyside	43	Whiston R.D. ..	17	26	—
South East Lancashire	28		—	28	—
West Midlands ..	26	Seisdon R.D. ..	5	8	—
		Meriden R.D. ..	8	—	—
		Warwick R.D. ..	2	—	—
		Bromsgrove R.D.	3	—	—

There is no reason why the population movements shown in this table should balance each other, nor is there any reason why all the population moving out of a conurbation should move to nearby areas. For example, the two conurbations of the North Western region lost about 54 thousand to unknown areas. The whole Region lost about the same amount, so there is some evidence that the people concerned moved to other parts of the country, or left the country altogether.

The population movements shown in Tables IV and V do not include all the movement resulting from overspill housing ; a substantial part of this takes place within the boundaries of conurbations, and so does not show in an analysis which does not sub-divide the conurbations.

BIRTHS

Live Births

The 700,335 live births which occurred in England and Wales in 1956 were the largest number since 1949, and the crude birth rate of 15·6 per 1,000 population was the largest since 1950. The numbers by legitimacy and the rates for the most recent years are summarised in Table VI, extracted from the serial Tables B and C in Part II.

Table VI.—Live births by legitimacy and rate per 1,000 population, 1938, 1951–55, 1955 and 1956, England and Wales

Period	Number of live births (*thousands*)			Rate per 1,000 population
	Total	Legitimate	Illegitimate	Total
1938	621·2	594·8	26·4	15·1
1951–55*	675·4	643·3	32·1	15·2
1955	667·8	636·7	31·1	15·0
1956	700·3	666·8	33·5	15·6

* Annual average.

The increase of nearly 5 per cent over the previous year was not due to any similar change in the number of potential mothers. It marks the continuation of a rise which began in the late spring of 1955. Until then the birth rate had been fairly constant since the end of the disturbance caused by the war, with some tendency to fall rather than to rise.

In this it had paralleled the situation in most other countries with a similar social structure, as can be seen from Table Q. Only very few of them also had an upturn in 1956 ; these included Germany, Austria and Switzerland. But in quite a number of countries rates are still above the pre-war level, notably in France and in Canada, the United States, Australia and New Zealand. The rates are a good deal lower than in the nineteen-thirties in countries of Southern and Eastern Europe, as well as Japan, where they used to be relatively high and had started to fall more recently than in the West.

Table Q covers only the more developed countries of the world which have fairly reliable birth registration statistics. It takes no account of large areas of Asia, Africa and Latin America where birth rates are known to be high even if no good annual series are available ; in many of them the population is growing rapidly.

Crude birth rates, however, do not allow a true appreciation of current fertility trends and levels for reasons which are explained below, and they should be regarded as only rough guides.

Birth rates per 1,000 women aged 15 to 44

As a first step to a more penetrating analysis the births may be related to the number of women of childbearing age instead of to the total population. This age-range is conventionally taken as 15–44. Next, legitimate and illegitimate births separately may be related to the married and unmarried women in that range respectively.

Table VII.—Live birth rates per 1,000 women aged 15–44 by legitimacy, 1841 to 1956, England and Wales

Note.—The ratios were calculated before rounding off the rates.

Year	Rate			Ratio to 1938 (taken as 100)		
	All live births per 1,000 women aged 15–44	Legitimate live births per 1,000 married women aged 15–44	Illegitimate live births per 1,000 unmarried women aged 15–44	All	Legitimate	Illegitimate
	3-year Averages					
1841	148·3	—	—	239	—	—
1851	149·8	294·9	19·4	241	268	337
1861	151·1	288·1	18·9	243	262	328
1871	155·7	296·3	17·2	250	269	298
1881	147·7	286·0	14·1	238	260	245
1891	129·7	263·9	10·5	209	240	182
1901	114·8	235·5	8·5	185	214	147
1911	98·3	197·4	7·9	158	179	138
1923*	79·1	155·2	6·5	127	141	112
1933	61·1	114·0	5·5	98	104	95
1951	72·0	105·8	10·0	116	96	174
	Individual Years or Annual Average					
1938	62·2	110·0	5·8	100	100	100
1939–49	71·4	112·6	10·5	115	102	182
1950	73·0	108·6	10·2	117	99	177
1951	71·6	105·4	9·8	115	96	170
1952	71·8	104·5	10·0	115	95	174
1953	73·5	106·3	10·2	118	97	178
1954	72·9	104·8	10·2	117	95	177
1955	72·8	103·7	10·3	117	94	178
1956	77·0	108·2	11·4	124	98	199

* 1923 (i.e., 1922–24) has been selected since in 1920 and 1921 conditions were still abnormal after the First World War, and 1933 (1932–34) because it marked the low point in numbers of births in the inter-war period.

Such rates are presented in Table VII together with ratios comparing them with the rates for 1938. The total rate rose in 1956 almost to the level of the early nineteen-twenties and was about a quarter larger than in 1938. (In the crude rate this change is obscured by the fall in the proportion of women aged 15–44 in the total population since 1938.) But the legitimate rate hardly regained the 1938 level, and although the illegitimate rate was about twice as large as before the war it is clear that the bulk of the increase in the total rate since then is due to the larger proportion of women in this age-range who are married. This rise can be seen from the following statement and from Table XXXIV on page 56.

Year	Proportion married among women aged 15–44 (*per thousand*)	Index (1938=100)
1938	541	100
1951	646	119
1955	669	124
1956	677	125

Reproduction rates

Table VII illustrates the changes in the annual number of births per woman in the reproductive age-range over the last hundred years. The picture which it gives is not very much affected by changes in the age distribution of women within this range.

Table VIII.—Gross and net reproduction rates, 1841–1956, England and Wales

Year	G.R.R.	N.R.R.	Year	G.R.R.	N.R.R.
	3 year Averages			Individual years and Annual Average	
1841 ..	2·237	1·349			
1851 ..	2·264	1·381	1938 ..	0·897	0·805
1861 ..	2·277	1·427	1939–49	1·031	0·945
1871 ..	2·356	1·511	1950 ..	1·062	1·010
1881 ..	2·252	1·511	1951 ..	1·044	0·996
1891 ..	1·973	1·369	1952 ..	1·052	1·008
1901 ..	1·702	1·238	1953 ..	1·076	1·032
1911 ..	1·428	1·121	1954 ..	1·071	1·031
1923 ..	1·153	0·966	1955 ..	1·077	1·038
1933 ..	0·862	0·756	1956 ..	1·146	1·107

This can be seen from the gross reproduction rates in Table VIII and from the following comparison:

Index Numbers (1938 = 100)

Period	All live births per 1,000 women aged 15–44	Gross reproduction rate
1840–42	239	249
1900–02	185	190
1922–24	127	129
1938	100	100
1939–49	115	115
1951	115	116
1956	124	128

The gross reproduction rate is a measure of annual fertility which is standardised for the detailed sex-age composition of the population. It is calculated by summing the female age fertility rates (live female births per woman in each age-group) multiplied by the width of the age-groups used.

The net reproduction rates also shown in Table VIII differ from the gross rates by being discounted for the mortality of the period. Before summation each age fertility rate is multiplied by the mean number of years lived through the age-range concerned according to the female life table of the period. At one time the N.R.R. was widely used, not as an index of the births and deaths of the year, but as a measure of the implications of current family building habits and mortality for the ultimate replacement of the population. In this sense it is now discredited, because it would imply unrealistic and even inconsistent assumptions, at least in societies limiting their families. It is subject to many of the temporary influences which affect annual numbers of births. The figures are given here for the convenience of users who like to keep up-to-date serial records in this form.

The question of replacement will be discussed on pages 22–24.

Age, duration and parity

Tabulation basis

Fertility tabulations can be made on the basis of either live births or maternities, and which is most convenient depends on the use to which they are put. The tables in Part II distinguish a large number of characteristics, including legitimacy, age of mother, duration of marriage and number of previous children. They give several different combinations of these factors, some for parts of the country as well as for England and Wales as a whole. It is therefore not practical or economic to provide completely parallel classifications of births and maternities.

Full analyses by legitimacy and mother's age are given for both live births and maternities (Tables AA to FF and TT), but the legitimate fertility tabulations involving duration of marriage or number of previous children are restricted to maternities (Tables HH to MM and QQ). The legitimate fertility rates by age of mother and year and duration of marriage (Table OO) were also in terms of maternities until 1955 ; beginning in 1956 they have been converted to a live birth basis by factors of the kind shown in Table IX. Table PP (mean family size by year of marriage) always related to live births.

Maternities are slightly greater in number than the corresponding live births (stillbirths included in the former exceeding the multiple births excluded), but the excess is small and the maternity statistics can be converted to live birth figures with sufficient accuracy for most purposes by means of the appropriate ratios of live births to maternities. Ratios for 1938 to 1955 have appeared in previous Commentary Volumes and for 1956 they are shown in Table IX.

Table IX.—Ratio of legitimate live births to legitimate maternities by age of mother at maternity, 1956, England and Wales

Age of mother at maternity						
All ages	Under 20	20–	25–	30–	35–	40 and over
0·990	0·987	0·991	0·992	0·991	0·984	0·965

The tables distinguishing duration of marriage and numbers of previous children (Tables HH to QQ) are confined to women married once only. Comparable statistics for women married more than once and for all married women, both classified by duration of *current* marriage, relating to 1952, were published in the Commentary Volume for 1955. Ratios comparing the three sets of fertility rates were also given there (pages 30–33).

Incomplete statement at registration

The annual statistics have been slightly incomplete through the occasional failure to obtain at birth registration a record of the mother's age or duration of marriage or the number of her previous children. The proportion of " not stated " cases of various types in the records for the year 1938, the first of the series, and for the years 1946 to 1956 are given in Table X.

Table X.—" Not stated " cases per 10,000 total legitimate maternities, 1938 and 1946 to 1956, England and Wales*

Type of information " not stated "	1938	1946–50	1951	1952	1953	1954	1955	1956
Age only	20	19	16	14	14	14	15	14
Age and year of marriage	5	3	2	5	6	6	7	6
Age and previous children	—	—	—	—	—	—	—	—
Age, year of marriage and previous children	25	9	6	—	—	—	—	—
Year of marriage only	89	29	24	32	30	32	32	30
Previous children only	44	25	19	—	—	—	—	—
Year of marriage and previous children ..	7	4	3	—	—	—	—	—
Total, all types ..	190	89	70	51	50	52	54	50
All age types	50	31	24	19	20	20	22	20
All duration types ..	125	45	35	37	36	38	39	36
All children types ..	76	38	28	—	—	—	—	—

* From 1952 onwards the comparisons relate to women married *once only*.

In 1938, the first year of operation of the Population (Statistics) Act, the additional information required by that Act was deficient in 1·9 per cent of total legitimate birth registrations, but by 1951 the deficiency had fallen to 0·7 per cent. Restricting the tabulations from 1952 to women married once only reduced the deficiency still further to about 0·5 per cent, by causing the virtual disappearance of cases where the number of previous children was not stated. The date of marriage, from which the duration of marriage is obtained, continues to be the most frequent item of information omitted.

As the number of omissions is so small and no severe bias in them is suspected the " not stated " cases have been proportionally distributed among the " stated " in Tables AA, HH, II, LL and MM ; for that form of presentation is more convenient for most users.

Illegitimate births and pre-marital conceptions

33,534 of the 700,335 live births occurring in 1956, or 34,113 of the 707,921 maternities, were illegitimate, a proportion of 4·8 per cent. Tables B and C of Part II contain serial records of the numbers of births and of rates since 1851 ; numbers of maternities from 1938 onwards are shown in column 2 of Table XI.

Table XI.—Illegitimate maternities and pre-maritally conceived legitimate maternities, 1938 to 1956, England and Wales

Year	Illegitimate maternities	Pre-maritally conceived legitimate maternities*	Total maternities conceived extra-maritally*		Percentage of extra-maritally conceived maternities legitimated by marriage of parents before birth of child
			Numbers	Percentage of all maternities	
1	2	3	4	5	6
1938	27,440	64,530	91,970	14·4	70·2
1939	26,569	60,346	86,915	13·8	69·4
1940	26,574	56,644	83,218	13·7	68·1
1941	32,179	43,363	75,542	12·7	57·4
1942	37,597	40,705	78,302	11·8	52·0
1943	44,881	37,271	82,152	11·8	45·4
1944	56,477	37,746	94,223	12·3	40·1
1945	64,743	38,176	102,919	14·9	37·1
1946	55,138	43,488	98,626	11·8	44·1
1947	47,491	59,633	107,124	12·0	55·7
1948	42,402	62,304	104,706	13·4	59·5
1949	37,554	59,185	96,739	13·1	61·2
1950	35,816	54,188	90,004	12·8	60·2
1951	33,444	50,477	83,921	12·3	60·1
1952	33,088	50,740	83,828	12·3	60·5
1953	33,083	50,266	83,349	12·1	60·3
1954	32,128	50,901	83,029	12·2	61·3
1955	31,649	50,638	82,287	12·2	61·5
1956	34,113	54,895	89,008	12·6	61·7

* From 1952 onwards the figures relate to women married *once only*.

Legitimate maternities conceived before marriage and illegitimate maternities are complementary and should be considered together. This is clear from the figures for the period of the Second World War, when the number of illegitimate maternities rose and that of pre-maritally conceived legitimate maternities fell, leaving the combined number, and still more the combined proportion of all maternities, relatively stable.

Column 3 of Table XI shows the number of pre-maritally conceived legitimate maternities, taken as equivalent approximately to those at marriage duration under 9 months from 1952 onwards, and under about 8½ months before then. The combined total of extra-maritally conceived maternities (89 thousand in 1956) is expressed as a percentage of all maternities in column 5. At about an eighth it has been slightly lower in recent years than in 1938. (The effect of the change in duration tabulation in 1952 is indicated by the fact that if the 1951 figures are adjusted to the new basis by adding half a month's maternities the percentage for that year in column 5 is raised from 12·3 to 13·0.)

In Table XII extra-maritally conceived maternities are related to the population at risk, viz., unmarried women together with the mothers of legitimately born children conceived before marriage. To facilitate the comparison of recent rates with those before 1952 an additional column for 1951 has been provided showing the rates that would have been produced in that year on the tabulation basis adopted in 1952.

Table XII.—Extra-maritally conceived maternities per 1,000 unmarried women (*see text*), 1938 to 1956, England and Wales

Age of Mother	1938	1939	1940–45 Average	1946–50 Average	1951	1951* (Adjusted)	1952	1953	1954	1955	1956
15– ..	12·0	12·1	11·1	13·8	14·6	15·0	15·1	15·6	16·1	16·6	19·2
20– ..	37·1	35·6	36·5	46·9	42·8	46·3	46·4	47·8	50·1	50·2	56·0
25– ..	27·6	26·6	34·5	45·1	38·7	41·6	39·1	39·2	38·6	41·4	44·5
30– ..	16·0	15·8	23·2	33·0	30·6	32·1	28·5	29·6	28·8	29·2	33·7
35– ..	10·6	10·0	13·0	18·2	17·0	17·5	16·2	16·0	16·5	16·7	18·5
40– ..	4·2	4·0	5·2	5·9	5·7	5·8	5·3	5·4	5·5	5·7	6·0
15–44 ..	19·8	19·0	20·8	26·8	24·7	26·2	25·4	25·8	26·3	26·7	29·8
Ratio to 1938 :											
Crude ..	1·00	0·96	1·05	1·35	1·25	1·32	1·28	1·30	1·33	1·35	1·51
Standardised by age ..	1·00	0·98	1·07	1·38	1·29	1·36	1·33	1·39	1·40	1·43	1·60

* Adjusted on 1952 duration basis.

The highest rates are for women aged 20–24, followed by those aged 25–29. The rates are appreciably higher than before the war, but it should be noted that this is not true of the total numbers of such maternities, which are slightly lower—the proportion of unmarried persons in the younger age-groups of the population has fallen greatly.

There is a more detailed discussion on pages 19–21 of the Commentary for 1955.

Legitimate births and fertility

Age of mother and duration of marriage

The total numbers of legitimate births and the corresponding rates per 1,000 married women aged 15–44 were shown above in Tables VI and VII. But fertility declines with advancing age of mother and with lengthening duration of marriage, and for a proper assessment of it these factors must be taken into account.

Table II in Part II classifies the year's legitimate maternities (to women married once only) by age of mother at maternity and the duration of her marriage. Corresponding rates, based on the estimated years of married life spent in the calendar year as shown in Table JJ, are given in Table KK†.

An alternative classification of the maternities, by age at *marriage* and year of marriage, is given in Table MM‡; the corresponding mean numbers exposed to risk are given in Table NN and rates in Table OO. These last two tables have been modified in 1956 from the form used in 1952 to 1955. They now relate to the integral duration intervals (from one wedding anniversary to the next) ended in 1956, spanning two calendar years of risk, instead of an integral calendar year of risk spanning two duration intervals. Table OO has also been adjusted from maternity rates to live birth or fertility rates. It continues Tables 2(*a*)–(*g*)

† To obtain equivalent birth rates they should be multiplied by the appropriate ratio of births to maternities.

‡ Table MM also shows number of previous children.

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of Appendix A to the 1955 Commentary Volume. Table PP now shows mean family size (liveborn children) at integral durations (wedding anniversaries) reached in the calendar year, by calendar year of marriage and age at marriage, and continues Tables 1(*a*)–(*g*) of the same Appendix.

The rates combining marriage duration with age at maternity are summarised in Table XIII. It shows the typical pattern of decline with increasing age, as well as with each year of duration after the first†. The incidence of pre-marital conceptions, conventionally measured by the rates for durations under 9 months, is also highest at ages under 20 (where the maternity rate is as high as for the remaining quarter of the first year), falls steeply to the next age-group (20–24) and more slowly thereafter.

Table XIII.—Legitimate maternity rates for women married once only by age and marriage duration, 1952 to 1956, England and Wales*

Age of Married Woman	Year	Marriage Duration (completed years)										
		All Durations	0–	1–	2–	3–	4–	5–9	10–14	15–19	20–24	25 and over
All ages under 50	1952–54	·089	·278	·258	·222	·203	·181	·115	·049	·019	·007	·001
	1955	·088	·279	·257	·219	·203	·186	·115	·047	·019	·006	·001
	1956	·092	·292	·267	·230	·215	·192	·122	·051	·020	·006	·001
Under 20 ..	1952–54	·408	·457	·311	·323	·354	—	—	—	—	—	—
	1955	·391	·433	·305	·310	·350	—	—	—	—	—	—
	1956	·406	·454	·314	·315	·333	—	—	—	—	—	—
20–24	1952–54	·252	·272	·278	·247	·235	·220	·200	—	—	—	—
	1955	·249	·269	·273	·238	·233	·221	·207	—	—	—	—
	1956	·259	·277	·283	·250	·245	·229	·217	—	—	—	—
25–29	1952–54	·171	·236	·247	·215	·205	·189	·140	·110	—	—	—
	1955	·171	·243	·244	·217	·203	·194	·143	·102	—	—	—
	1956	·180	·247	·255	·226	·216	·199	·152	·113	—	—	—
30–34	1952–54	·101	·229	·236	·201	·185	·167	·107	·070	·065	—	—
	1955	·096	·234	·243	·197	·179	·167	·104	·063	·062	—	—
	1956	·100	·247	·245	·210	·190	·173	·110	·066	·063	—	—
35–39	1952–54	·050	·168	·181	·148	·134	·126	·078	·043	·035	·039	—
	1955	·049	·166	·190	·150	·135	·128	·080	·042	·035	·035	—
	1956	·050	·175	·195	·152	·144	·132	·082	·045	·035	·035	—
40–44	1952–54	·015	·053	·064	·055	·050	·043	·029	·017	·012	·012	·009
	1955	·014	·055	·066	·052	·050	·046	·030	·016	·012	·011	·008
	1956	·014	·054	·075	·059	·049	·042	·030	·017	·012	·010	·008
45–49	1952–54	·001	·005	·004	·004	·003	·003	·002	·002	·001	·001	·001
	1955	·001	*·002*	*·002*	*·004*	*·004*	*·003*	·003	·002	·001	·001	·001
	1956	·001	*·003*	*·004*	*·005*	*·003*	*·002*	·002	·001	·001	·001	·001

* In calculating these rates the few maternities to women whose stated age and marriage duration implied an age at marriage below the legal minimum of 16 have been excluded.

The table shows that the increase in birth rates which occurred in 1956 affected all age-groups where the number of maternities is large enough for chance fluctuations not to obscure the picture, and all marriage durations up to at least the 10–14 years group inclusive. Compared with 1955 rates the proportional increases were similar over the whole of that field ; compared with the average rates of 1952–54 they were rather more concentrated on the age-groups 25–39, excluding the longest durations for women aged 30–39.

† The apparent exception at the longest durations within some of the lines, mainly that for age-group Under 20, is due to the fact that as it approaches the right-hand edge of the table the group becomes confined to fewer single years of age, corresponding to the very youngest *marriage* ages. In this part of a detailed table by single years of age fertility rates change more rapidly with marriage age than with duration, and the number of women at the individual ages making up the group increases very rapidly with age.

Cohort analysis

A true appreciation of fertility trends needs more than the examination of annual fertility rates. It is necessary to take a group of people, such as those born or married in a particular period, and to follow them through their reproductive lives, either by detailed records (which are rarely available) or by statistical computation which approximates to the same results. Such a group is generally called a cohort, and the study of fertility records in this form, cohort analysis. In this country the two types of group mentioned are often distinguished by referring to those born in the same period as a generation, and reserving the term cohort for those married in the same time interval.

Analysis of the births of any one period such as a year can give misleading results when either family size or the timing of births is changing. This is true both of long-run changes in the pattern of family building and of the short-term distortions caused by such events as wars and economic depressions and reflected in the violent fluctuations in the fertility rates of the last twenty years. Cohort analysis avoids these dangers, and also makes it possible to see the changes in birth timing in perspective.

To this end tables of mean family sizes and fertility rates were computed and published in Appendix A of the 1955 Commentary Volume. The mean family size tables show for each marriage cohort* since 1920 the average number of liveborn children reached after each single year of marriage duration. The fertility rate tables show the average annual additions by which family size has been built up. Both sets give figures for all women married under the age of 45 combined and for the separate marriage age-groups. They were made by linking the data from the 1946 sample Family Census of the Royal Commission on Population, the 1951 Census of England and Wales and the annual vital registration records.† The series is being kept up-to-date by Tables OO and PP.

The figures are discussed in detail in the 1951 Census *Fertility Report.*

Table XIV and Diagram 1 show the mean ultimate family size of marriage cohorts since 1861. The earlier figures have been drawn from the census data of 1911 and 1946. Those from 1930 onwards have been projected from the position reached by the cohorts concerned in 1955 by assuming future fertility rates by marriage age and duration equal to the mean of those experienced in 1951–55. The projected values have been revised from those shown in the 1955 Commentary. (This has been made necessary by the discovery of an arithmetical error which does not, however, affect the general conclusions.) The projected values are unlikely to be appreciably in error for marriages of 1940 or before, which had lasted at least 15 years in 1955. The element of projection (though not, of course, the margin of error) amounts to between 10 and 20 per cent of the total for marriages of 1942–45 and to 20 per cent or more from 1946 onwards, when the figures gradually become more speculative.

* Women married once only.

† For the technical problems involved and the methods used see *Census 1951, England and Wales : Fertility Report*, Chapter IV, Appendix 1.

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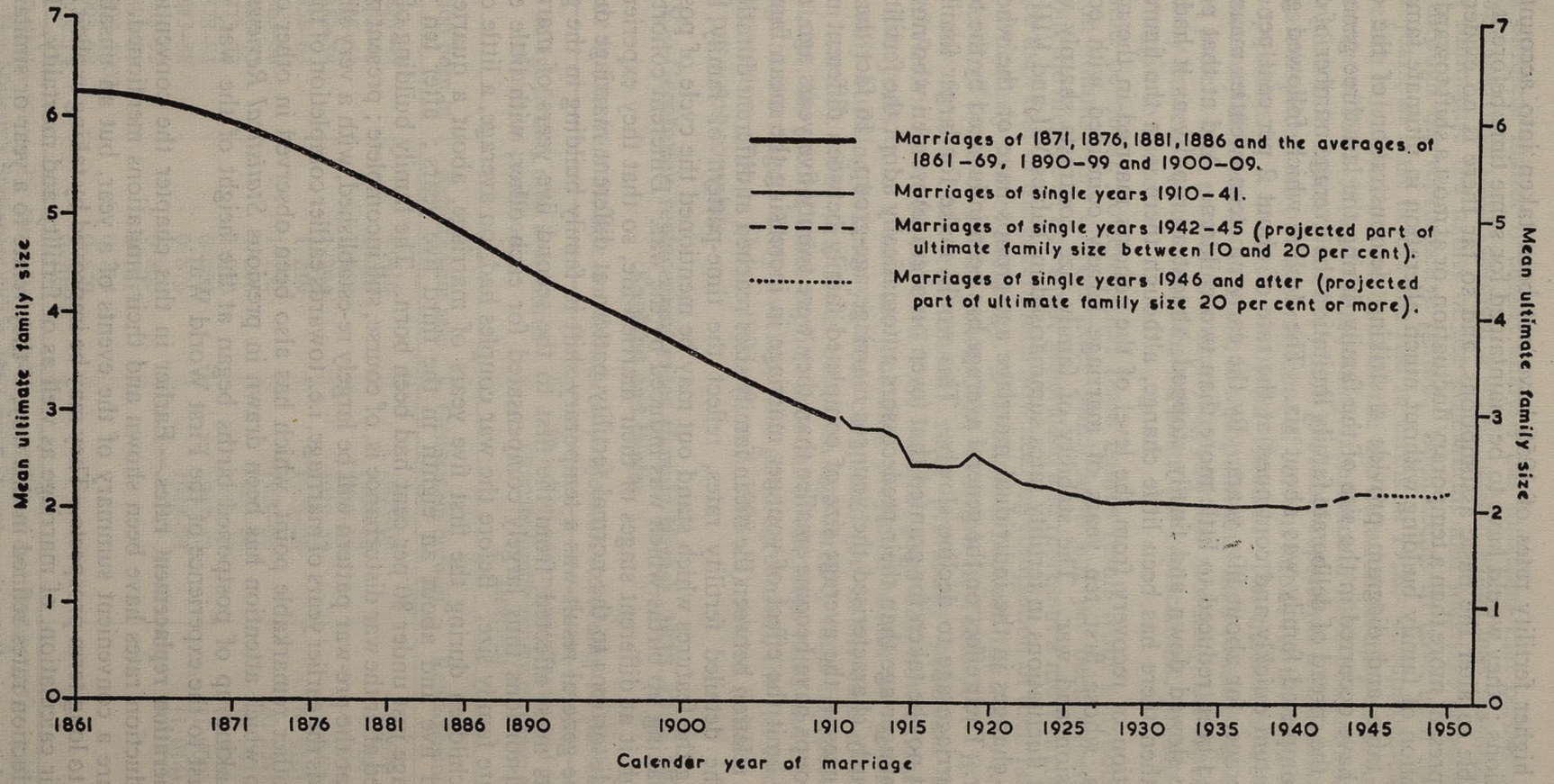
Table XIV.—Mean ultimate family size of marriage cohorts since 1861, all marriage ages under 45, England and Wales

Calendar year of marriage	Mean ultimate family size (*actual*)	Calendar year of marriage	Mean ultimate family size (*actual*)	Calendar year of marriage	Mean ultimate family size (*projected*)
1861–69	6·16	1910	2·95	1930	2·09
		1911	2·83	1931	2·08
1871	5·94	1912	2·80	1932	2·08
		1913	2·81	1933	2·06
1876	5·62	1914	2·73	1934	2·04
1881	5·27	1915	2·43	1935	2·04
		1916	2·43	1936	2·02
1886	4·81	1917	2·44	1937	2·03
		1918	2·45	1938	2·07
1890–99	4·13	1919	2·57	1939	2·05
1900–09	3·30	1920	2·47	1940	2·00
		1921	2·38	1941	2·04
		1922	2·28	1942	2·09
		1923	2·23	1943	2·15
		1924	2·21	1944	2·19
		1925	2·17	1945	2·18
		1926	2·14	1946	2·18
		1927	2·09	1947	2·18
		1928	2·08	1948	2·18
		1929	2·08	1949	2·18
				1950	2·21

Diagram 1.—Mean ultimate family size of marriage cohorts since 1861, all marriage ages under 45, England and Wales



The higher fertility rates of 1956 have not been taken into account in the projections ; they would have to be maintained for some time before it became profitable to alter the basic assumptions, and so far there is no evidence that they represent more than a temporary fluctuation, or at most a shift towards earlier completion of family building without much alteration in ultimate family size.

The table and diagram provide a striking demonstration of the changes which have occurred in the size of the family during the last three generations. Before the spread of deliberate family limitation the average number of children in a completed family was about six. The decline which followed gathered momentum quickly and continued at the rate of about 2 per cent per annum, on average, for about fifty years. By the early nineteen-twenties mean family size had been reduced to little more than two children. And at that point the decline slowed down and finally stopped, almost as rapidly as it had begun. Since then there has been little change, although there is in the figures some suggestion of recovery from the level of the cohorts married in the nineteen-thirties, whose first ten years of marriage largely coincided with economic depression and war. The stability of family size contrasts sharply with the violent fluctuations in fertility rates summarised in Tables VII and VIII.

The changes in the individual marriage age-groups have on the whole been similar. Their effect on the general average has been influenced by the tendency for marriage age to decline slowly. This would make for larger families, but it must not be taken for granted that (even on average) women who now marry at a younger age than their predecessors automatically adopt the fertility which previously characterised the younger marriage age-group. In fact the relative differences in the average size of completed family between different marriage age-groups have become smaller than they were twenty-five years ago, and that would limit the effect of younger marriage in increasing the mean family size.

The relation between the mean family sizes reached at different durations, and also the detailed fertility rates, reflect the time-pattern of family building. Among the features which stand out may be mentioned the cycle of postponing and making up births which was induced by the war. Different cohorts passed through it at different stages of their married life, so that they experienced the same distortions to the normal fertility pattern at different marriage durations. But the general result was a temporary shift in family building in the group of cohorts most affected, from the first to the second five years of married life. The distortions thus largely compensated for each other, with little effect on ultimate family size. Before the war couples had, on average, a little over half their children during the first five years of marriage, about a quarter in the second five and about an eighth in the third five years ; after ten years of marriage just under 80 per cent had been born. The family building of couples married after the war disturbance is, of course, still incomplete ; present prospects are that the pre-war pattern will be largely re-established, with a very slight shift towards the earlier years of marriage, i.e., towards earlier completion of the family.

Another remarkable point, which has also been observed in other countries and to which attention has been drawn in previous *Statistical Reviews*, is that the making up of postponed births began at the height of the war, in sharp contrast to the experience of the First World War.

Generation replacement rates.—Earlier in this chapter the conventional net reproduction rates have been shown and their limitations mentioned. Briefly, they are a convenient summary of the events of a year, but an unsatisfactory guide to long-term prospects. They may be improved by taking explicit account, in their calculation, of marriage as well as of fertility and mortality. But even reproduction rates refined in this way, if they relate to a year or similar period, are subject to distortions and fluctuations when the time-pattern of family building is changing, though ultimate family size may be constant.

It is a different matter if cohort analysis has indicated that certain sets of fertility and marriage rates represent a stable pattern which may reasonably be taken to summarise the habits of the generations and marriage cohorts now passing through the reproductive period. Such seems to have been the case in recent years, at least before the rise in births in 1956. A replacement rate was therefore calculated on the basis of the age-duration fertility rates and the marriage rates of 1951–55, and the mortality experience of 1950–52 as represented by the English Life Tables No. 11*, which probably represents a fair estimate of the ultimate implications of the persistence of current habits for the replacement of the population.† It comes to 1·01 for females. The male rate, at about 1·06, is not very different.‡ In short, in a population which consistently experienced the present high proportions marrying and low mortality, the family size indicated by current trends would be sufficient for replacement, perhaps with a slight margin to spare.

It should be noted, however, that these figures result from a hypothetical calculation summarising current rates which have not yet been experienced throughout the lifetime of any single generation and represent a more favourable experience than that of the generations now nearing completion of their families. This is particularly true of mortality. The relation between the above replacement rates and those of actual generations is shown in Table XV. It brings together the female birth replacement rates previously published in the *Statistical Review* for 1946–50, Civil Text Volume, page 220, now extended by another five years, and a new set including projected values for generations whose family building has not yet been completed (or, in the case of the last few, even started). The first set is based on age fertility rates irrespective of marital status, the second takes explicit account of marriage rates and of family size by age at marriage. They overlap, with good agreement, for the two most recent generation groups (born 1903–08 and 1908–13) whose fertility is for practical purposes complete.

Table XV.—Generation replacement rates (female births), 1838–43 to 1948–53, England and Wales

(*Figures in brackets include an element of projection exceeding 10 per cent*)

Based on age fertility rates irrespective of marital condition		Based on age marriage rates and mean ultimate family size by marriage age (*revised*)	
Generation born in	Replacement rate	Generation born in	Replacement rate
1838–43	1·416	1903–08	0·672
1843–48	1·403	1908–13	0·730
1848–53	1·358	1913–18	0·795
1853–58	1·294	1918–23	(0·849)
1858–63	1·219	1923–28	(0·910)
1863–68	1·152	1928–33	(0·938)
1868–73	1·093	1933–38	(0·964)
1873–78	1·030	1938–43	(0·978)
1878–83	0·958	1943–48	(1·000)
1883–88	0·876	1948–53	(1·014)
1888–93	0·806		
1893–98	0·761		
1898–1903	0·714		
1903–08	0·679		
1908–13	0·704		

* *The Registrar General's Decennial Supplement, England and Wales, 1951 : Life Tables* London : Her Majesty's Stationery Office, 1957, price 3s. net.

† For details see *Census 1951, England and Wales, Fertility Report*.

‡ These rates have been revised analogously to Table XIV.

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The number of female births to the last generation of women before the spread of family limitation was about 40 per cent above replacement level. Then it declined until, for the generations born in the early years of this century, it was 30 per cent short of the number needed for replacement. Since then it has been rising vigorously and, if present trends continue, will reach replacement level with the generation now about to enter the reproductive period. But the rise has been slowing down, and there are no clear indications at present that it will carry the rate very much higher than unity.*

The reason is that, of the rise of 51 per cent between the generation replacement rate of women born in 1903–08 (0·672) and the projected rate of those born in 1948–53 (1·014), about half (24 per cent of the earlier rate) is due to improved mortality (mainly in infancy) and between a third and quarter (15 per cent of 0·672) to higher proportions marrying. Only the remaining quarter (12 per cent of 0·672, or about 8 per cent of replacement level) is due to an increase in ultimate family size. The proportions dying young or remaining unmarried have now become so small that little further increase in replacement rates can be looked for from this source. Of course it is much too early to predict with any confidence the experience of generations recently born. But cohort analysis has revealed considerable stability in family size. Unless there are great changes in economic and social conditions or another revolution in people's attitude to marriage and the raising of children, of which there is no clear sign at present, the population will probably continue to replace itself, perhaps with a little to spare.

Birth order

The legitimate maternities of the year are tabulated by birth order as well as mother's age at maternity in Table HH. In 1956, 40 per cent of the total were first births, 30 per cent second, 15 per cent third and 15 per cent fourth or later births. In Table LL the first maternities among these are further subdivided by duration of marriage.

Table MM gives a threefold classification by mother's age at marriage, duration of marriage and birth order. It makes it possible to investigate the share of births of different orders in the recent rise in fertility rates. True birth order rates would relate, say, the second maternities of mothers married in 1953 at age 20–24 to the estimated number of women in that group who have so far had one child. But it has not so far been possible to carry out the considerable work of making a series of such estimates in line with those of mean family size in the 1955 Commentary Volume. In the meantime a series of rates has been computed relating the live births† of each calendar year from 1952 to 1956, classified by birth order, to *all* the married women of the same marriage year and marriage age as the mothers concerned. In effect the marriage age / cohort rates of Table OO (style of 1952–55, but live births) have been subdivided by birth order in proportion to Table MM. These rates are shown in Appendix A on pages 278–287. Those for all ages under 45 combined are means of the age rates weighted by the original number of spinster marriages in each cohort and age-group. Index numbers of these all-ages rates are given in Table XVI.

* The generation rates in Table XV may be related approximately to marriage cohorts by remembering that the bulk of spinster marriages occur between the ages of 20 and 30. Those of the 1903–08 generation, for instance, would therefore be concentrated roughly in the period 1925–35, those of the 1918–23 generation in 1940–50 and those of the 1928–33 generation in 1950–60.

† Maternities converted by the appropriate coefficients.

Table XVI.—Ratios of fertility rates by birth order (live births per woman married once only, irrespective of parity) to those of 1952 taken as 100, 1952 to 1956, England and Wales

All marriage ages under 45

Note.—Calculated from rates in Appendix A taken to 4 decimal places.

Mean marriage duration (years)	Calendar year of marriage	Calendar year of maternity	Number of previous children					
			Total	0	1	2	3	4 or more
½	1952	1952	100			100		
	1953	1953	102			102		
	1954	1954	103			103		
	1955	1955	102			102		
	1956	1956	106			106		
1	1951	1952	100	100		100		
	1952	1953	102	102		108		
	1953	1954	102	102		110		
	1954	1955	102	102		114		
	1955	1956	106	105		118		
2	1950	1952	100	100	100		100	
	1951	1953	97	98	96		88	
	1952	1954	95	94	99		83	
	1953	1955	95	93	101		88	
	1954	1956	99	96	104		92	
3	1949	1952	100	100	100		100	
	1950	1953	107	112	107		96	
	1951	1954	102	107	101		88	
	1952	1955	103	104	104		92	
	1953	1956	108	111	109		94	
4	1948	1952	100	100	100	100	100	
	1949	1953	104	107	103	101	96	
	1950	1954	108	112	108	102	95	
	1951	1955	103	110	104	96	82	
	1952	1956	110	117	110	102	89	
5	1947	1952	100	100	100	100	100	
	1948	1953	106	114	106	99	103	
	1949	1954	106	117	103	102	102	
	1950	1955	114	127	112	108	106	
	1951	1956	112	134	111	101	99	
6	1946	1952	100	100	100	100	100	100
	1947	1953	104	112	107	99	98	95
	1948	1954	105	123	104	98	98	104
	1949	1955	105	125	105	96	100	107
	1950	1956	120	151	119	111	108	114
7	1945	1952	100	100	100	100	100	100
	1946	1953	104	105	100	104	105	118
	1947	1954	104	113	99	101	106	121
	1948	1955	103	123	99	96	103	122
	1949	1956	108	131	104	100	108	123

Table XVI—*continued*

Mean marriage duration (years)	Calendar year of marriage	Calendar year of maternity	Number of previous children					
			Total	0	1	2	3	4 or more
	1944	1952	100	100	100	100	100	100
	1945	1953	104	110	105	106	102	94
8	1946	1954	105	118	100	103	110	109
	1947	1955	104	122	99	99	107	114
	1948	1956	111	146	107	103	108	119
	1943	1952	100	100	100	100	100	100
	1944	1953	100	89	98	100	102	108
9	1945	1954	100	100	97	99	101	108
	1946	1955	99	93	91	97	104	117
	1947	1956	105	115	101	98	107	122
	1942	1952	100	100	100	100	100	100
	1943	1953	100	92	93	98	111	111
10	1944	1954	96	83	83	96	109	119
	1945	1955	93	92	82	90	103	114
	1946	1956	99	95	84	92	111	132
	1941	1952	100	100	100	100	100	100
	1942	1953	106	96	105	108	107	108
11	1943	1954	100	83	89	97	109	121
	1944	1955	96	81	79	92	106	125
	1945	1956	100	85	85	96	108	129
	1940	1952	100	100		100	100	100
	1941	1953	104	99		105	104	109
12	1942	1954	104	98		103	109	111
	1943	1955	99	84		95	104	123
	1944	1956	102	81		96	110	136
	1939	1952	100	100		100	100	100
	1940	1953	101	111		106	99	87
13	1941	1954	104	110		109	103	93
	1942	1955	102	104		102	105	98
	1943	1956	103	100		98	105	109
	1938	1952	100	100		100	100	100
	1939	1953	107	111		122	110	93
14	1940	1954	105	119		123	109	84
	1941	1955	106	114		123	106	89
	1942	1956	114	120		129	115	100
	1937	1952	100	100		100	100	100
	1938	1953	98	92		106	96	96
15	1939	1954	101	100		115	109	91
	1940	1955	104	118		123	107	86
	1941	1956	107	116		123	112	93
	1936	1952	100	100		100	100	100
	1937	1953	100	92		102	113	97
16	1938	1954	99	89		115	107	93
	1939	1955	103	103		119	113	93
	1940	1956	103	114		130	113	84

Table XVI—*continued*

Mean marriage duration (years)	Calendar year of marriage	Calendar year of maternity	Number of previous chidren					
			Total	0	1	2	3	4 or more
	1935	1952	100		100		100	100
	1936	1953	97		100		100	95
17	1937	1954	96		95		103	94
	1938	1955	93		93		103	90
	1939	1956	104		116		119	91
	1934	1952	100		100		100	
	1935	1953	99		100		98	
18	1936	1954	99		107		96	
	1937	1955	96		98		95	
	1938	1956	95		95		95	
	1933	1952	100		100			100
	1934	1953	99		107			95
19	1935	1954	97		107			92
	1936	1955	94		107			86
	1937	1956	96		109			88
	1932	1952	100			100		
	1933	1953	96			96		
20	1934	1954	91			91		
	1935	1955	88			88		
	1936	1956	81			81		
	1931	1952	100			100		
	1932	1953	107			107		
21	1933	1954	97			97		
	1934	1955	84			84		
	1935	1956	83			83		
	1930	1952	100			100		
	1931	1953	93			93		
22	1932	1954	102			102		
	1933	1955	84			84		
	1934	1956	81			81		

When the births are so finely subdivided there are bound to be many small numbers subject to chance fluctuations. In Table XVI births of different orders have therefore been grouped together in such a way that the corresponding cells in Table MM for 1956 contained at least 1,000 maternities. Even so there are quite a few cells where no significance can be attached to very small movements in the index numbers.

It is clear from Table XVI that the rise in rates in 1956 compared with 1955 affected not only all durations up to about 17 years, but also all birth orders. Taken by and large, moreover, there does not seem to have been much variation between different birth orders in the proportional increases of rates. The picture is similar for individual marriage age-groups under 30 ; after that age the data are rather sparse and the movement of the rates shows no consistent change.

The sustained rise in first birth rates within each duration from 4 to 8 years is likely to be due to the post-war rise in births : if women married just after the war had their first children more quickly after marriage than later cohorts fewer of them would be still childless at duration 5 or 6 (say). That would cause their rates in Appendix A to be smaller than those of the following cohorts, even if their true birth order rates at those durations were the same.

Keeping this qualification in mind it may be noted that over the period as a whole there seems to have been some tendency for first and fourth and higher order birth rates to rise, but not for second and third birth rates. This applies to the first ten or eleven years of marriage only.

Birth occurrences and registration time lag

The statutory period allowed for registration of either a live birth or a still-birth is 42 days and as a consequence there has generally been an appreciable time lag between the occurrence of a birth and its registration. In the past the time lag has been found to decrease markedly after the introduction of an incentive to register earlier, for example, by the dependence of the issue of food ration books and Family Allowances upon birth registration. Conversely, registration has become more tardy when such incentives have been removed or have become less compelling. In 1955 the average time lag between occurrence of a birth and registration was about twelve days.

The importance of time lags arises from their influence on the difference between the number of births registered in a period and the number occurring in that period. Occurrences are usually the more appropriate statistics for fertility measurement, but registrations are available sooner. The difference between the two is influenced by the time lag in two ways. A difference will occur, even though the time lag be constant, if birth incidence is changing ; and also, even though birth incidence be constant, if the time lag is changing. In practice both factors operate. The combined effect of these factors may be measured by the ratio of occurrences to registrations, and has been very small except in the unsettled conditions of 1940–41, as the following statement shows:

Ratio of live birth occurrences to registrations

1939	1940	1941	1942	1943	1944	1945	1946	1947
0·992	0·972	0·986	0·996	1·002	1·009	0·992	1·001	0·993

1948	1949	1950	1951	1952	1953	1954	1955	1956
0·998	0·999	1·008	0·997	1·001	1·004	1·002	1·004	1·003

Seasonal incidence of births

The number of live births is normally greatest in the second quarter of the year and smallest in the fourth quarter. This is illustrated by Table XVII, based on Table D in Part II. Table XVII also shows that the seasonal cycle is similar for legitimate and illegitimate births, but with somewhat wider swings for the illegitimate.

Table XVII.—Ratio of quarterly births to average quarterly births taken as 100: 1939, 1949–53 and 1956, England and Wales

Period	1939	1949–53 Average	1956
	All Live Births		
1st Quarter ..	100	102	102
2nd „ ..	106	105	103
3rd „ ..	101	100	100
4th „ ..	93	93	95
Year ..	400	400	400
	Legitimate Live Births		
1st Quarter ..	99	102	102
2nd „ ..	106	105	103
3rd „ ..	101	100	100
4th „ ..	94	93	95
Year ..	400	400	400
	Illegitimate Live Births		
1st Quarter ..	105	104	99
2nd „ ..	107	107	107
3rd „ ..	100	98	98
4th „ ..	88	91	96
Year ..	400	400	400
	Legitimate Stillbirths		
1st Quarter ..	104	105	106
2nd „ ..	104	104	102
3rd „ ..	98	96	97
4th „ ..	94	95	95
Year ..	400	400	400

The seasonal variation in the number of stillbirths is the product of two factors, the variation of births and that of stillbirth rates. The first of these has much the greater influence, but operates something like a month in advance because the average period of gestation is shorter for stillbirths than for live births. Hence the distribution resembles that of live births, but anticipates it slightly, with the result that the first quarter has the largest numbers.

The monthly birth figures in Table TT allow a more detailed study. The varying length of calendar months can be allowed for by using daily averages. The ratios of these averages in each month to those for the calendar year are given in Table XVIII.

Table XVIII.—Monthly birth incidence in relation to the average for the calendar year, 1939, 1951–54, 1955 and 1956, England and Wales

Month of Occurrence	Ratio of monthly daily average to that of the calendar year taken as 1,000											
	Legitimate Live Births				Illegitimate Live Births				Legitimate Stillbirths			
	1939	1951–54	1955	1956	1939	1951–54	1955	1956	1939	1951–54	1955	1956
January	980	990	1,011	989	1,076	994	1,014	971	1,043	1,043	1,041	987
February ..	995	1,038	1,002	1,016	1,041	1,053	1,032	975	1,045	1,081	982	1,130
March	1,041	1,066	1,052	1,080	1,080	1,082	1,037	1,050	1,078	1,076	1,084	1,082
April	1,073	1,060	1,044	1,066	1,046	1,088	1,035	1,085	1,068	1,080	990	1,031
May	1,078	1,072	1,038	1,043	1,138	1,096	1,034	1,045	1,060	1,031	1,028	1,052
June	1,043	1,037	1,028	1,012	1,044	1,060	1,035	1,079	1,002	993	968	1,005
July	1,025	1,011	1,003	1,004	1,038	1,018	1,025	989	984	963	985	961
August	985	969	962	968	960	935	967	967	972	940	968	990
September ..	1,004	992	987	1,002	969	969	972	975	963	933	996	934
October	939	932	954	942	859	882	920	942	938	944	920	931
November ..	914	906	942	921	853	891	934	923	932	947	1,031	989
December ..	927	931	979	956	898	938	996	1,000	917	973	1,004	916

For live births the table shows that the daily average is normally at a minimum in November, then rises sharply until March, remains high until May or June and then declines again except for a minor rise in September. The peak is usually in March or May, occasionally in April.

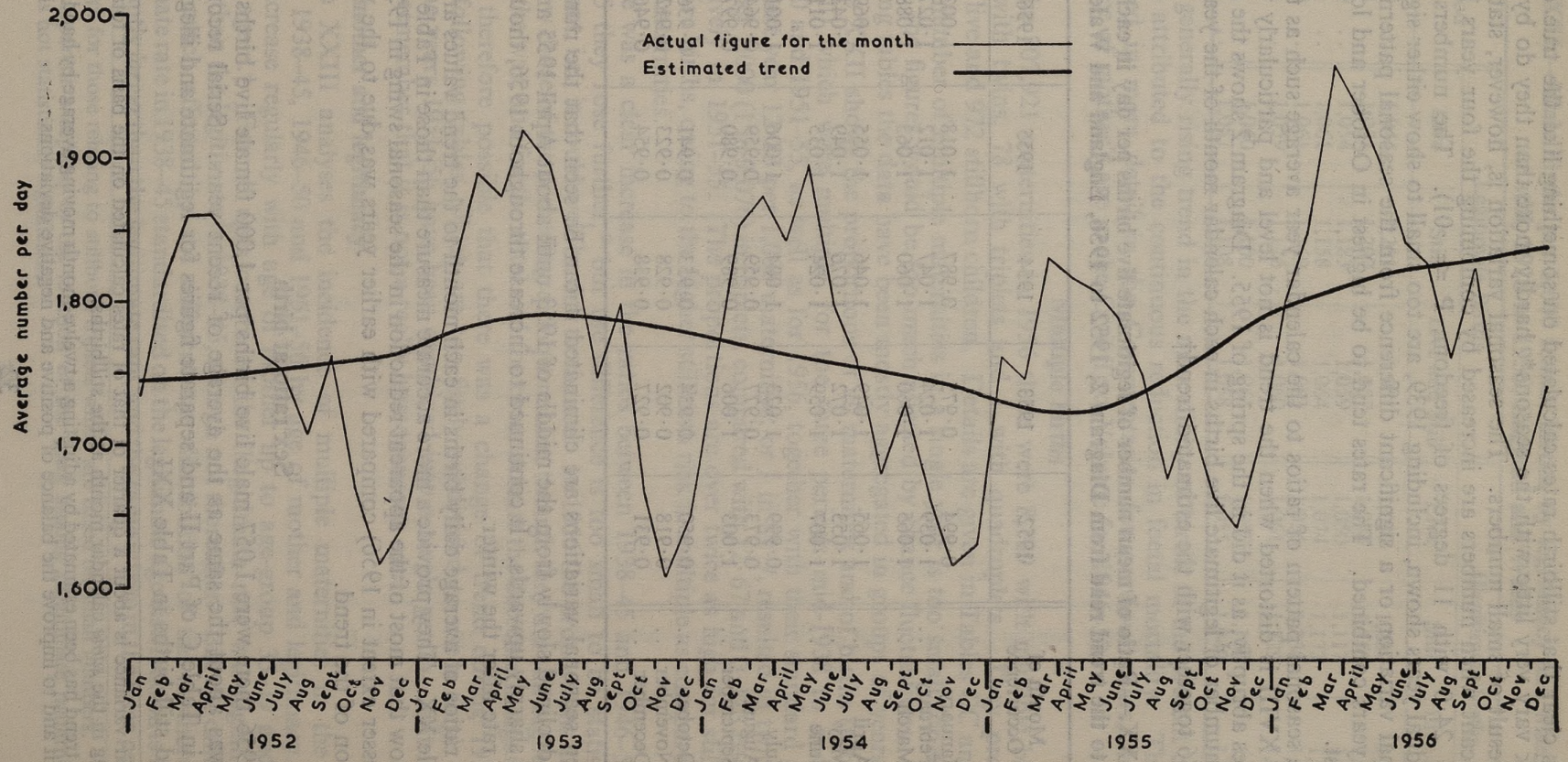
Stillbirths tend to be relatively numerous in January to May and relatively rare in July to December, corresponding to the distribution of live births about a month later. Their ratios fluctuate more from one year to another than those of live births, mainly because of their small numbers. The seasonal variation in stillbirth *rates* is shown by Table XIX, which relates the average daily number of stillbirths in each calendar month to the sum of that number and of the corresponding number of live births one month later.

Table XIX.—Stillbirth rates by calendar month (*see text*), 1939, 1951–54, 1955 and 1956, England and Wales

Note.—The ratios were calculated before rounding off the rates.

Month of Occurrence of Stillbirth	Rate per 1,000 total births (live and still)				Ratio to calendar year rate taken as 1,000			
	1939	1951–54	1955	1956	1939	1951–54	1955	1956
Year	**38·1**	**22·9**	**23·1**	**22·8**	**1,000**	**1,000**	**1,000**	**1,000**
January ..	39·9	23·0	23·9	22·4	1,045	1,006	1,036	980
February ..	38·0	23·1	21·9	23·9	998	1,008	946	1,046
March ..	38·0	23·3	24·1	23·1	998	1,017	1,041	1,012
April ..	38·0	23·1	22·4	22·5	997	1,006	967	984
May	38·6	22·8	23·1	23·6	1,013	994	1,000	1,035
June	37·1	22·6	22·5	23·1	973	986	972	1,013
July	38·2	22·9	23·7	22·8	1,002	999	1,027	999
August ..	36·7	21·8	22·6	22·5	962	950	979	984
September ..	39·5	23·0	24·0	22·8	1,036	1,003	1,040	998
October ..	39·0	23·7	22·5	23·3	1,023	1,037	972	1,019
November ..	38·4	23·2	24·1	23·4	1,007	1,013	1,041	1,025
December ..	36·3	22·6	22·7	20·8	953	985	982	911

Diagram 2.—Monthly incidence of legitimate live births in relation to the trend, 1952 to 1956, England and Wales



It is clear that stillbirth rates calculated on something like the true exposed to risk vary very little with the seasons*, hardly more than they do by chance as a result of small numbers. The seasonal variation is, however, statistically significant when numbers are increased by combining the four years 1951–54 ($\chi^2 = 24{\cdot}0$ with 11 degrees of freedom, $P \doteq {\cdot}01$). The numbers in the individual years shown, including 1939, are too small to show either significant seasonal variation or a significant difference from the seasonal pattern for all seven years combined. The rates tend to be highest in October and lowest in August.

The seasonal pattern of ratios to the calendar year average such as those in Table XVIII is distorted when the trend is not level and particularly when it changes abruptly, as it did in the spring of 1955. Diagram 2 shows the average daily number of legitimate live births in each calendar month of the years 1952 to 1956 together with the estimated trend†.

Table XX.—Ratio of mean number of legitimate live births per day in each month to the trend read from Diagram 2, 1952 to 1956, England and Wales

Month of Occurrence	1952	1953	1954	1955	1956
January ..	0·994	0·975	0·987	1·018	1·003
February ..	1·039	1·024	1·047	1·012	1·027
March ..	1·065	1·060	1·060	1·063	1·088
April ..	1·065	1·049	1·046	1·055	1·069
May ..	1·053	1·072	1·076	1·049	1·043
June ..	1·007	1·059	1·024	1·035	1·011
July ..	0·999	1·023	1·004	1·006	1·001
August ..	0·973	0·977	0·959	0·959	0·964
September ..	1·003	1·006	0·989	0·980	0·997
October ..	0·950	0·934	0·953	0·941	0·936
November ..	0·918	0·902	0·928	0·923	0·912
December ..	0·931	0·927	0·938	0·954	0·946

When seasonal variations are eliminated it can be seen that the number of births declined slowly from the middle of 1953 until about April 1955 and then turned sharply upwards. It continued to increase throughout 1956, though at a slower rate after the winter.

The ratios of average daily births in each month to the trend values are given in Table XX. They provide a more accurate measure than those in Table XVIII, and show that most of the apparent reduction in the seasonal swing in 1955 (and to a lesser extent in 1956) compared with earlier years was due to the varying direction of the trend.

Sex ratio at birth

In 1956 there were 1,057 male live births per 1,000 female live births. This ratio was about the same as the average of recent years. Serial records are shown in Table C of Part II and separate figures for legitimate and illegitimate live and still births in Table XXI.

* Their variance is about a quarter of that of rates calculated on the basis of total births occurring in the *same* calendar month as the stillbirths.

† The trend has been estimated by adjusting a twelve-month moving average by hand so as to smooth it and to improve the balance of positive and negative deviations.

Table XXI.—Male births per 1,000 female births, by legitimacy and whether live or still, 1928 to 1956, England and Wales

Period	Legitimate Births			Illegitimate Births		
	Live	Still	Live and Still	Live	Still	Live and Still
1928–30 ..	1,044	1,231	1,051	1,037	1,280	1,049
1931–35 ..	1,051	1,207	1,057	1,044	1,153	1,049
1936–40 ..	1,054	1,183	1,059	1,050	1,117	1,054
1941–45 ..	1,061	1,158	1,064	1,074	1,173	1,078
1946–50 ..	1,061	1,169	1,063	1,056	1,238	1,061
1951–55 ..	1,059	1,126	1,060	1,061	1,229	1,066
1955 ..	1,060	1,100	1,061	1,058	1,164	1,061
1956 ..	1,057	1,108	1,058	1,055	1,049	1,055

The generally rising trend in the masculinity of births in the present century can be attributed to the continuous reduction in foetal mortality. This was discussed in more detail in the Commentaries for previous years, and the influence of mother's age in the Civil Text Volume for 1946–50.

Multiple births

Of the 707,921 maternities in 1956 there were 8,739 with multiple births—8,660 with twins, 78 with triplets and 1 with quadruplets. They produced 16,586 live and 972 stillborn children. Details are given in Tables CC and DD.

The number of multiple maternities in a single year is too small for detailed study ; the figures would be too much affected by chance fluctuations. In the following tables the data have been mostly aggregated in groups of years.

Table XXII shows the proportions of all maternities and of births (total, live and still) which were multiple, for the three periods mid-1938 to end-1945, 1946–50 and 1951–55, as well as for 1956, together with their standard errors. In the last year 12·23 per 1,000 maternities, or 1 in 81·7, resulted in twins, and 0·110 per 1,000 (1 in 9,076) in triplets, compared with 12·67 and 0·118 per 1,000 respectively in 1951–55. The proportions are over twice as high for stillbirths as for live births, owing to the higher stillbirth risk in multiple as compared with single maternities.

There was a clear increase in the ratios between 1938–45 and 1946–50. In 1951–55 they rose further,* but the difference is too small to be statistically significant, i.e., it could well be due to chance. In 1956 the proportions actually fell below those of the preceding quinquennium, though they are still higher than during the war, and for the total and for twins at least the decrease is significant.

It is therefore possible that there was a change of trend during 1951–55. In the following tables, which are too finely subdivided to use a single year's data, the years 1951–56 have been combined into a single group ; but it is as well to remember that it is not a really homogeneous one.

Age of mother and legitimacy

Table XXIII analyses the incidence of multiple maternities in the three periods 1938–45, 1946–50 and 1951–56 by age of mother and legitimacy. The rates increase regularly with age of mother up to age-group 35–39 and then decline again.† For all ages combined the illegitimate rate was significantly smaller than the legitimate in 1938–45, though not thereafter. But the difference is very much affected by the different age distribution of the mothers—the illegitimate rate in 1938–45 standardised on the legitimate age distribution is 13·36, significantly *larger* than the legitimate rate, and the same is true in the later periods.

* Except for those relating to stillborn triplets which are based on small numbers.

† The apparent exception in the location of the peak among illegitimate maternities in 1951–56 is not statistically significant.

Table XXII.—Multiple birth proportions, 1938 to 1956, England and Wales

		1938–45	1946–50	1951–55	1956
Multiple maternities* per 1,000 total maternities	All multiple	12·01 ±·05	12·66 ±·06	12·79 ±·06	12·34 ±·13
	Twins	11·91 ±·05	12·54 ±·06	12·67 ±·06	12·23 ±·13
	Triplets	0·100 ±·004	0·112 ±·005	0·118 ±·006	0·110 ±·012
Multiple births (live and still) per 1,000 total births	All multiple	23·84 ±·07	25·11 ±·08	25·37 ±·09	24·50 ±·18
	Twins	23·54 ±·07	24·77 ±·08	25·01 ±·09	24·16 ±·18
	Triplets	0·295 ±·008	0·333 ±·009	0·348 ±·010	0·326 ±·021
Multiple live births per 1,000 liveborn children	All multiple	23·00 ±·07	24·28 ±·08	24·54 ±·09	23·68 ±·18
	Twins	22·72 ±·07	23·96 ±·08	24·20 ±·08	23·38 ±·18
	Triplets	0·272 ±·007	0·311 ±·009	0·334 ±·010	0·301 ±·021
Multiple stillbirths per 1,000 stillborn children	All multiple	48·75 ±·55	58·83 ±·78	60·53 ±·87	59·25 ±1·90
	Twins	47·74 ±·54	57·60 ±·77	59·48 ±·86	57·85 ±1·88
	Triplets	0·975 ±·077	1·207 ±·112	0·958 ±·110	1·402 ± ·292

* A maternity is treated as multiple whether the children involved are live or stillborn.

Table XXIII.—Proportion of multiple maternities by age of mother and legitimacy, 1938 to 1956, England and Wales

(*Per thousand*)

Maternal Age	Legitimate			Illegitimate		
	1938–45	1946–50	1951–56	1938–45	1946–50	1951–56
All Ages	**12·06 ±·05**	**12·68 ±·06**	**12·71 ±·06**	**11·34 ±·19**	**12·31 ±·24**	**12·78 ±·25**
Under 20	6·38 ±·21	6·61 ±·24	6·48 ±·20	5·40 ±·34	5·51 ±·44	4·78 ±·38
20–24	8·54 ±·09	9·00 ±·10	9·18 ±·09	8·49 ±·29	8·92 ±·37	9·29 ±·40
25–29	11·30 ±·09	12·60 ±·10	12·52 ±·10	12·70 ±·43	14·11 ±·50	14·35 ±·58
30–34	14·47 ±·11	15·20 ±·14	16·16 ±·14	17·31 ±·62	16·25 ±·69	20·57 ±·79
35–39	16·83 ±·16	17·55 ±·19	18·57 ±·21	18·53 ±·83	20·68 ±·97	19·50 ±·98
40–44	13·14 ±·26	13·32 ±·31	12·45 ±·31	13·40 ±1·17	13·45 ±1·32	15·15 ±1·38
45 and over ..	6·97 ±·66	6·38 ±·80	6·86 ±·89	9·13 ±3·45	10·03 ±4·09	8·13 ±3·63
Not stated ..	10·90 ±·72	8·93 ±·89	8·82 ±1·03	10·19 ±1·55	9·92 ±2·34	6·03 ±2·13

A more detailed study of multiple births must distinguish the different types. Triplets and higher order multiples will be left aside because of their very small numbers and their complexity.* Twins are of two types : monozygotic or identical twins arising from the splitting of a fertilised ovum, and dizygotic or fraternal twins arising from the fertilisation of two ova in a single menstrual cycle. Monozygotic twins must always be of the same sex, while in the absence of evidence to the contrary the relative frequencies of dizygotic twin pairs consisting respectively of two boys, two girls or a boy and a girl may be expected to follow those deduced from the sex ratio of singly born children. It was shown in Part II of the *Statistical Review* for 1938 (page 121) that the like-sex dizygotic pairs may be taken with sufficient accuracy as equal in number to the unlike-sex pairs, and hence the number of monozygotic pairs estimated by subtracting the number of unlike-sex pairs from the number of like-sex pairs. The figures in Table XXIV have been calculated on this basis.

* The triplet rates for the whole period 1938–56 show a similar movement with mother's age as do the total multiple rates in Table XXIII :

Triplet maternities per million total maternities by age of mother and legitimacy, 1938–56, England and Wales

Age of mother	Total	Legitimate	Illegitimate
All Ages	**109 ± 3**	**109 ± 3**	**96 ± 12**
Under 20	49 ±10	56 ±11	18 ± 13
20–24	66 ± 4	67 ± 5	57 ± 16
25–29	91 ± 5	90 ± 5	114 ± 26
30–34	150 ± 7	150 ± 7	142 ± 36
35–39	190 ±11	188 ±11	231 ± 58
40–44	116 ±15	118 ±16	79 ± 56
45 and over	81 ±47	86 ±50	— —
Not stated	104 ±47	99 ±49	136 ±136

Table XXIV.—Twin maternities per 1,000 total maternities by type, age of mother and legitimacy, 1938 to 1956, England and Wales

Age of Mother	Legitimate				Illegitimate			
	1938–45	1946–50	1951–56	1938–56	1938–45	1946–50	1951–56	1938–56
Monozygotic Twins								
All Ages	**3·42** ±·05	**3·62** ±·06	**3·54** ±·06	**3·52** ±·03	**3·06** ±·19	**3·46** ±·24	**3·47** ±·25	**3·29** ±·13
Under 20	3·05 ±·21	3·46 ±·24	3·24 ±·20	3·24 ±·12	3·32 ±·34	3·51 ±·44	2·72 ±·38	3·19 ±·22
20–24	3·23 ±·09	3·47 ±·10	3·42 ±·09	3·37 ±·05	3·48 ±·29	2·82 ±·37	3·71 ±·40	3·35 ±·20
25–29	3·31 ±·09	3·52 ±·10	3·48 ±·10	3·43 ±·06	2·53 ±·43	3·32 ±·50	3·52 ±·58	3·05 ±·28
30–34	3·51 ±·11	3·92 ±·14	3·58 ±·14	3·65 ±·07	2·89 ±·62	4·49 ±·69	3·87 ±·78	3·67 ±·40
35–39	3·86 ±·16	3·72 ±·19	4·05 ±·21	3·86 ±·11	2·44 ±·83	3·32 ±·96	2·38 ±·98	2·70 ±·53
40–44	3·55 ±·26	3·58 ±·31	3·72 ±·31	3·61 ±·17	3·17 ±1·16	6·21 ±1·32	5·81 ±1·38	4·92 ±·74
45 and over ..	4·29 ±·66	3·19 ±·80	4·11 ±·87	3·93 ±·44	3·91 ±3·46	3·34 ±4·10	4·88 ±3·64	4·04 ±2·14
Not stated ..	3·78 ±·72	3·63 ±·89	2·50 ±1·02	3·47 ±·49	3·79 ±1·54	1·10 ±2·34	1·51 ±2·13	2·72 ±1·12
Dizygotic Twins								
All Ages	**8·54** ±·06	**8·94** ±·07	**9·04** ±·07	**8·82** ±·04	**8·18** ±·23	**8·75** ±·28	**9·21** ±·31	**8·64** ±·16
Under 20	3·30 ±·21	3·11 ±·23	3·14 ±·20	3·19 ±·12	2·04 ±·30	2·00 ±·37	2·06 ±·35	2·03 ±·19
20–24	5·26 ±·10	5·46 ±·11	5·68 ±·10	5·47 ±·06	4·91 ±·31	6·10 ±·43	5·51 ±·43	5·41 ±·22
25–29	7·91 ±·11	8·97 ±·12	8·94 ±·12	8·58 ±·07	10·10 ±·55	10·61 ±·61	10·74 ±·71	10·44 ±·35
30–34	10·82 ±·14	11·12 ±·17	12·40 ±·17	11·39 ±·09	14·29 ±·80	11·67 ±·83	16·49 ±·99	14·14 ±·50
35–39	12·79 ±·20	13·65 ±·24	14·31 ±·27	13·46 ±·13	15·97 ±1·09	17·00 ±1·24	16·87 ±1·29	16·56 ±·69
40–44	9·47 ±·31	9·63 ±·37	8·58 ±·37	9·28 ±·20	10·02 ±1·43	7·24 ±1·37	9·34 ±1·54	8·97 ±·84
45 and over ..	2·61 ±·57	3·19 ±·80	2·51 ±·76	2·75 ±·40	5·22 ±3·69	6·69 ±4·73	3·25 ±3·26	5·05 ±2·26
Not stated ..	6·98 ±·82	5·31 ±·97	6·20 ±1·22	6·35 ±·56	6·16 ±1·71	8·82 ±3·12	4·52 ±2·61	6·52 ±1·33

The table continues the analysis made in the Civil Text Volumes for 1940–45 (pages 119 ff.) and 1946–50 (page 138).

Monozygotic twins.—The monozygotic twin rates are illustrated in Diagram 3. In each of the three periods the legitimate rates rose very slightly with mother's age,* significantly so in the first and third periods.† In no period did they deviate significantly from a straight line. There were, however, significant differences between the three periods : the mean for 1946–50 was higher than that for 1938–45,‡ and the slopes of the lines are all different from each other, being steepest in 1938–45 and flattest in 1946–50.§ The illegitimate rates are based on much smaller numbers and are therefore more subject to chance variations ; in no period did they deviate significantly from the lines fitted to the legitimate rates.‖

* This does not imply that there is a direct influence of mother's age. It might well be that father's age is the direct cause of this variation, appearing here because of the correlation between parents' ages.

†

Period	F with 1 and 5 degrees of freedom	P
1938–45	25·06	$<$·01
1946–50	3·24	·1
1951–56	16·23	·01

‡ The mean for 1951–56 was not significantly different from the other two, but that for the combined period 1946–56 was significantly higher than that for 1938–45.

§ The differences between periods as multiples of their standard errors were :—

Periods	Between means	Between slopes
1938–45 and 1946–50	2·8	10·1
1938–45 and 1951–56	1·8	4·9
1946–50 and 1951–56	1·0	6·2
1938–45 and 1946–56	2·7	not tested

‖ The equations of the three regression lines are as follows :

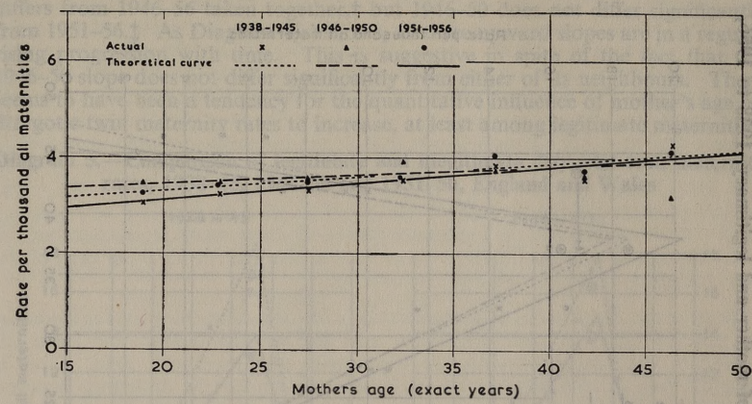
Let y = legitimate monozygotic twin maternity rate per 1,000 total legitimate maternities,
x = age at maternity in years.

Then :—

1938–45	$y = 2{\cdot}4391 + 0{\cdot}0334\ x$
1946–50	$y = 3{\cdot}0757 + 0{\cdot}0184\ x$
1951–56	$y = 2{\cdot}7486 + 0{\cdot}0279\ x$

The deviations of the illegitimate rates gave χ^2 with 7 d.f. of 8·9, 8·5 and 6·8 respectively ($P > \cdot 2$ throughout).

Diagram 3.—Legitimate monozygotic twin maternities per 1,000 total legitimate maternities by age of mother, 1938 to 1956, England and Wales



Investigation shows that the difference between the periods is not accounted for by the very small differences in the age-distribution of maternities within the five-year groups of mother's age.

A separate analysis of male and female monozygotic twin rates was made in the Civil Text Volumes for 1940–45 (pages 121–123) and 1946–50 (page 139). The male rates were slightly lower than the female. It does not follow that male fertilised ova split less frequently than female, for the incidence of abortion is probably greater among male foetuses and that might cause a deficiency in male twin births even if there is none among conceptions.

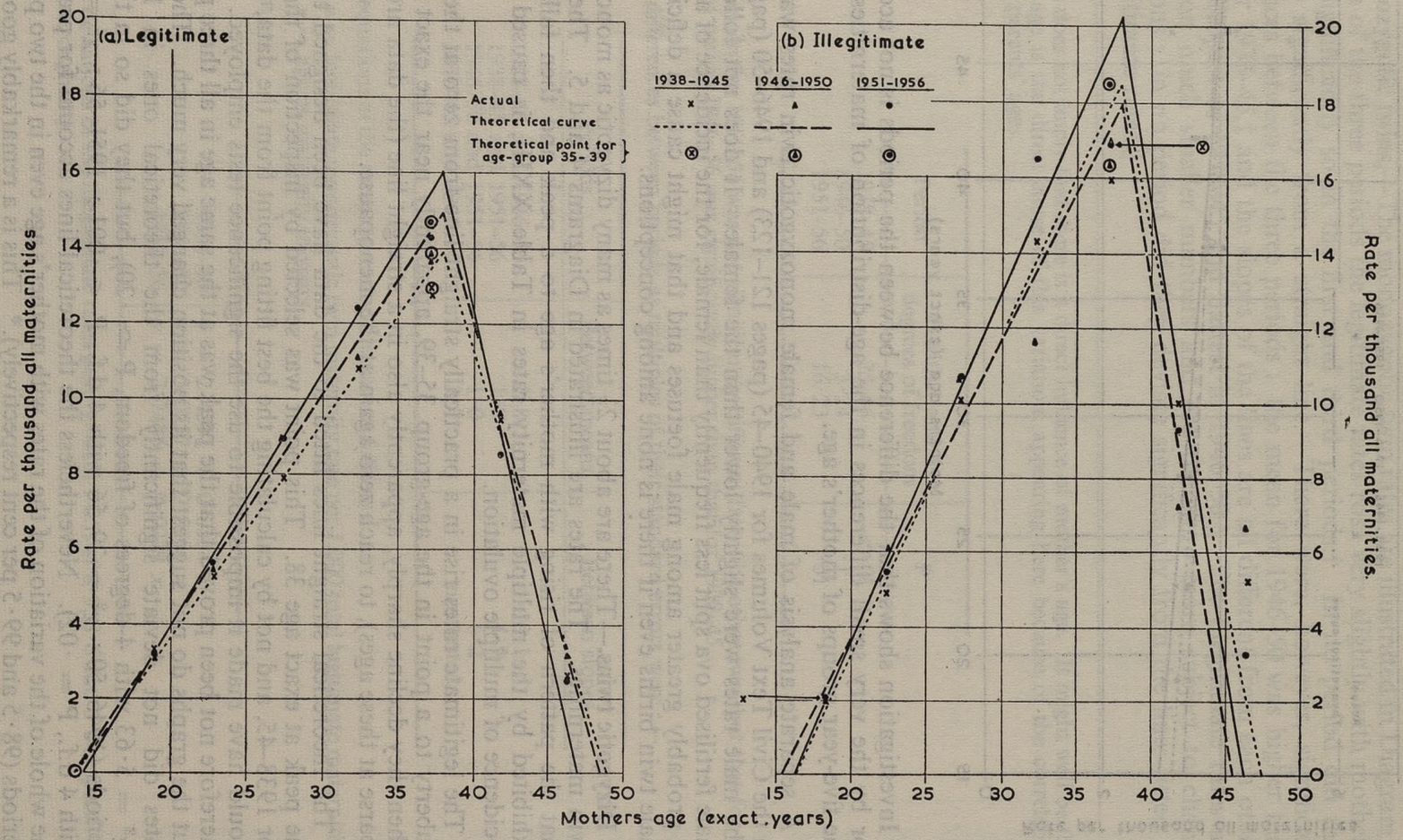
Dizygotic twins.—There are about 2½ times as many dizygotic as monozygotic twin maternities. The rates are illustrated in Diagrams 4 and 5. They show that the pattern of rising with mother's age to a peak and then falling off, exhibited by the multiple maternity rates in Table XXIII, is caused by the incidence of multiple ovulation.

The legitimate rates rise in a practically straight line from zero at the age of puberty to a point in the age-group 35–39, apparently near the exact age 38. Then they decline sharply, apparently also in a straight line (the data are rather sparse at these ages), to reach zero again at the menopause.

The theoretical straight lines fitted to the data have been designed to reach the peak at exact age 38. This point was selected by inspection of the graph for 1938–45, and not by calculating the best fitting point from the data, for that would have made it impossible to use the significance tests employed. It has therefore not been proved that the peak was at the same age in all three periods; but the graphs do not suggest that its position changed very much. The actual rates did not deviate significantly from the theoretical ones in 1938–45 ($\chi^2 = 5{\cdot}63$ with 4 degrees of freedom, $P \simeq \cdot 20$), but they did so in the later periods (1946–50 : $\chi^2 = 29{\cdot}56$ with 4 d.f., $P < \cdot 001$; 1951–56 : $\chi^2 = 11{\cdot}64$ with 4 d.f., $P = \cdot 02$). Nevertheless the theoretical lines account for practically the whole of the variation of the rates with mother's age even in the two post-war periods (98·5 and 99·5 per cent respectively).* This is a remarkably good fit for so simple a theoretical model.

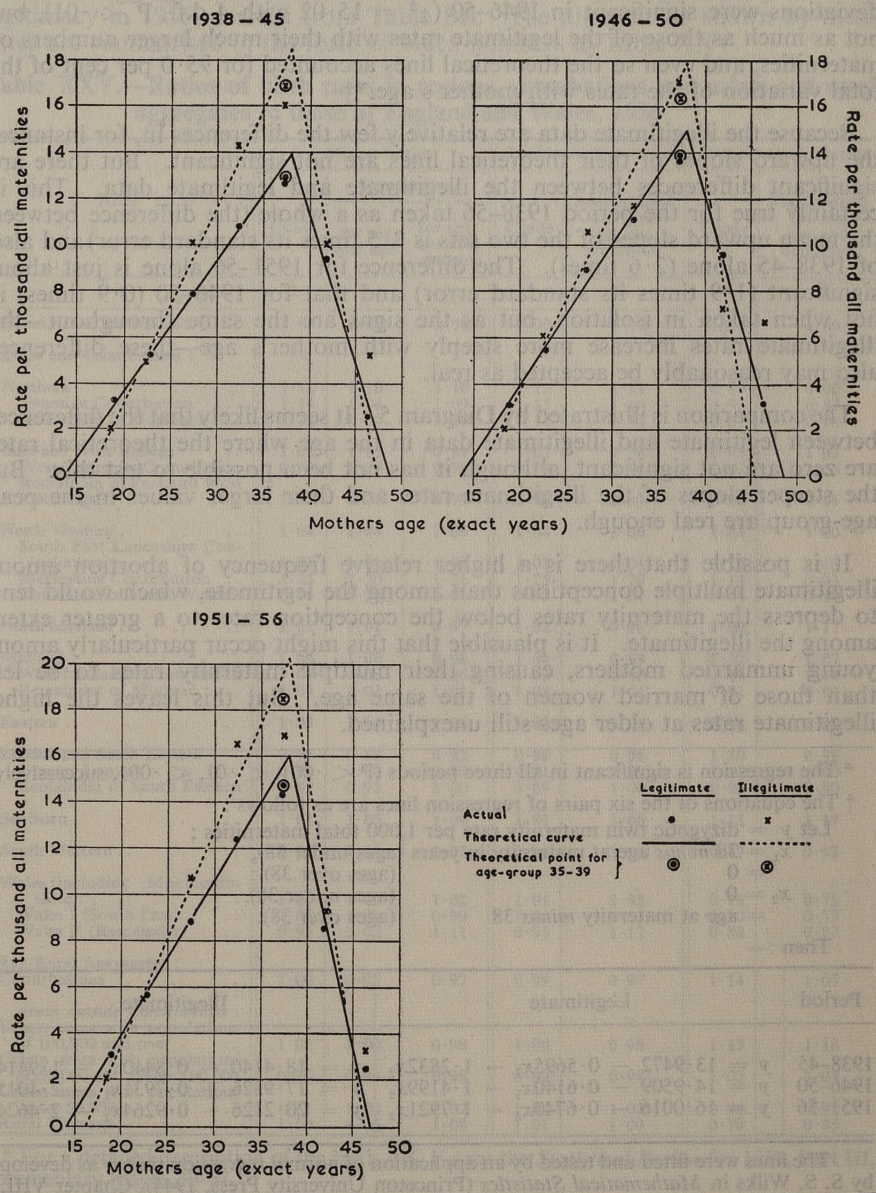
* The regression is highly significant in all three periods ($F > 100$ with 2 and 4 d.f., $P < \cdot 001$, throughout).

Diagram 4.—Dizygotic twin maternities per 1,000 total maternities by age of mother and legitimacy, 1938 to 1956, England and Wales



Although the three pairs of lines have all been given the same peak age 38 it is clear that they differ significantly among themselves.* In particular 1938–45 differs from 1946–56 taken together,† but 1946–50 does not differ significantly from 1951–56.‡ As Diagram 4(*a*) shows, all three upward slopes are in a regular rising progression with time. This is suggestive in spite of the fact that the 1946–50 slope does not differ significantly from either of its neighbours. There seems to have been a tendency for the quantitative influence of mother's age on dizygotic twin maternity rates to increase, at least among legitimate maternities.

Diagram 5.—Comparison of legitimate and illegitimate dizygotic twin maternity rates, 1938–45, 1946–50 and 1951–56, England and Wales



* For variation between all three periods, F = 5·51 with 6 and 12 d.f., P < ·01.
† F = 7·13 with 3 and 15 d.f., P < ·001.
‡ F = 1·66 with 3 and 8 d.f., P > ·20.

The illegitimate rates again suffer from greater liability to chance fluctuation owing to the much smaller numbers of maternities. Unlike the theoretical lines shown in the 1940–45 Civil Text Volume (page 122) those in Diagram 4(*b*) have been given a peak at age 38 like those for legitimate rates, and the same tests have been used on both. That seemed preferable for the sake of comparability, although at least one of the tests employed is not strictly valid for such small numbers. It does not mean that in fact the peak is at age 38, or at the same age as for the legitimate rates. It may well be at a slightly earlier age in at least one or other of the periods, but it has not been possible to test this. The actual rates did not deviate significantly from the theoretical lines in 1938–45 and 1951–56 ($\chi^2 = 6{\cdot}02$ and $6{\cdot}30$ respectively with 4 d.f., $P > {\cdot}10$). The deviations were significant in 1946–50 ($\chi^2 = 15{\cdot}02$ with 4 d.f., $P < {\cdot}01$), but not as much as those of the legitimate rates with their much larger numbers of maternities, and even so the theoretical lines accounted for 95·0 per cent of the total variation of the rates with mother's age.*†

Because the illegitimate data are relatively few the differences in, for instance, the upward slopes of their theoretical lines are not significant. But there are significant differences between the illegitimate and legitimate data. This is certainly true for the period 1938–56 taken as a whole (the difference between the mean upward slopes of the two sets is 3·5 times its standard error) and also of 1938–45 alone (2·6 times). The difference for 1951–56 alone is just about significant (1·9 times its standard error) and that for 1946–50 (0·9 times) is not when taken in isolation, but as the signs are the same throughout—the illegitimate rates increase more steeply with mother's age—these differences also may reasonably be accepted as real.

The comparison is illustrated by Diagram 5. It seems likely that the differences between legitimate and illegitimate data in the age where the theoretical rates are zero are not significant, although it has not been possible to test this. But the steeper slopes of the illegitimate rates and their larger values in the peak age-group are real enough.

It is possible that there is a higher relative frequency of abortion among illegitimate multiple conceptions than among the legitimate, which would tend to depress the maternity rates below the conception rates to a greater extent among the illegitimate. It is plausible that this might occur particularly among young unmarried mothers, causing their multiple maternity rates to be less than those of married women of the same age. But this leaves the higher illegitimate rates at older ages still unexplained.

* The regression is significant in all three periods ($P < {\cdot}001, < {\cdot}01, < {\cdot}001$, successively).

† The equations of the six pairs of regression lines are as follows :

Let y = dizygotic twin maternity rate per 1,000 total maternities ;
x_1 = 38 *minus* age at maternity in years (ages under 38),
= 0 (ages over 38) ;
x_2 = 0 (ages under 38),
= age at maternity *minus* 38 (ages over 38).

Then :—

Period	Legitimate	Illegitimate
1938–45	$y = 13{\cdot}9472 - 0{\cdot}5695x_1 - 1{\cdot}2832x_2$	$y = 18{\cdot}4140 - 0{\cdot}8440x_1 - 1{\cdot}9414x_2$
1946–50	$y = 14{\cdot}9509 - 0{\cdot}6140x_1 - 1{\cdot}4199x_2$	$y = 17{\cdot}9326 - 0{\cdot}7931x_1 - 2{\cdot}4015x_2$
1951–56	$y = 16{\cdot}0016 - 0{\cdot}6740x_1 - 1{\cdot}7921x_2$	$y = 20{\cdot}2126 - 0{\cdot}9264x_1 - 2{\cdot}4624x_2$

The lines were fitted and tested by an application of normal regression theory as developed by S. S. Wilks in *Mathematical Statistics* (Princeton University Press, 1944), Chapter VIII.

Birth rates in different parts of the country

The numbers of live births by sex and legitimacy and the crude birth rates for all administrative areas in England and Wales are given in Table E, together with summary figures for standard regions, conurbations and urban and rural aggregates. The table also shows for each area an area comparability factor* by which the crude birth rates can be standardised for the sex-age structure of the local population, and the ratio of this adjusted rate to the national birth rate.

But even rates standardised for sex and age are not a safe guide to fertility differentials. The analysis has been taken a step further in the tables in Appendix B. They relate to regions, conurbations and remainders of regions, and urban and rural aggregates. For each of these areas they give age fertility rates by legitimacy in 1956, derived from Table BB. The differentials shown by these rates are summarised in the form of index numbers in Table XXV.

Table XXV.—Ratios of birth rates in regions, conurbations and urban and rural aggregates to those of England and Wales, 1956

Area	All live births			Legitimate live births		Illegitimate live births	
	Crude	Standardised for sex and age	Standardised for sex, age and condition	Crude	Standardised for sex, age and condition	Crude	Standardised for sex, age and condition
1	2	3	4	5	6	7	8
ENGLAND AND WALES ..	1·00	1·00	1·00	1·00	1·00	1·00	1·00
Regions and Conurbations :							
Northern	1·12	1·10	1·10	1·13	1·11	0·89	0·90
Tyneside Conurbation ..	1·14	1·08	1·09	1·15	1·10	0·93	0·87
Remainder of Northern ..	1·11	1·10	1·10	1·12	1·11	0·87	0·92
East and West Ridings ..	1·03	1·03	0·99	1·03	0·98	0·95	1·07
West Yorkshire Conurbation	0·99	1·00	0·99	0·99	0·98	1·09	1·16
Remainder of East and West Ridings	1·05	1·04	0·99	1·06	0·99	0·86	0·99
North Western	1·04	1·04	1·06	1·04	1·06	1·03	1·00
South East Lancashire Conurbation	1·02	1·02	1·02	1·01	1·01	1·16	1·19
Merseyside Conurbation ..	1·25	1·20	1·26	1·25	1·28	1·14	0·93
Remainder of North Western	0·95	0·98	1·00	0·95	1·01	0·84	0·87
North Midland	1·02	1·02	0·97	1·02	0·96	1·00	1·17
Midland	1·04	1·00	0·98	1·04	0·98	1·02	1·07
West Midlands Conurbation	1·04	0·98	0·96	1·03	0·95	1·13	1·14
Remainder of Midland ..	1·04	1·03	1·01	1·04	1·01	0·91	0·99
Eastern	1·03	1·04	1·06	1·03	1·06	0·98	1·06
London and South Eastern ..	0·91	0·88	0·92	0·90	0·91	1·10	0·98
Greater London	0·92	0·86	0·89	0·91	0·89	1·17	1·00
Remainder of South Eastern	0·89	0·95	1·00	0·89	1·00	0·90	0·90
Southern	1·01	1·05	1·06	1·01	1·06	1·11	1·19
South Western	0·95	1·01	1·02	0·96	1·03	0·87	0·92
Wales (including Monmouthshire)	1·00	1·02	1·02	1·01	1·03	0·75	0·75
Wales I (South East) ..	1·02	1·01	0·99	1·04	1·01	0·70	0·73
Wales II (Remainder) ..	0·95	1·02	1·11	0·95	1·12	0·88	0·82
Urban/Rural Aggregates :							
Conurbations	1·00	0·95	0·97	0·99	0·97	1·14	1·03
Areas outside Conurbations :							
Urban areas with populations of 100,000 and over ..	1·01	1·00	0·98	1·00	0·96	1·13	1·18
Urban areas with populations of 50,000 and under 100,000	0·99	0·99	0·98	0·99	0·98	1·02	1·05
Urban areas with populations under 50,000	1·01	1·02	1·02	1·02	1·02	0·86	0·92
Rural Districts	1·00	1·06	1·08	1·01	1·09	0·79	0·86

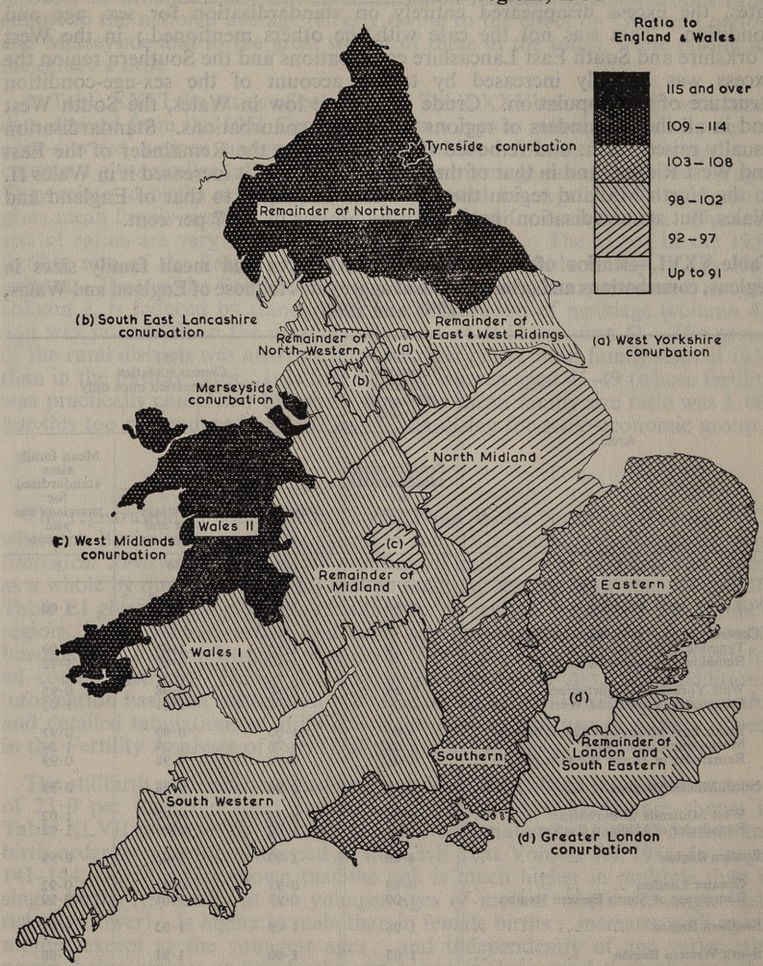
* For a detailed description of the birth A.C.F.s see the *Statistical Review* for 1954, Part III, Commentary, pages 30–31.

Among the conurbations and remainders of regions by far the largest crude birth rate in 1956, as in previous years, was that of Merseyside, followed by Tyneside and the Remainder of the Northern region (column 2). Standardisation, either for sex and age alone, using A.C.F.s (column 3), or for sex, age and marital condition (column 4), only reduced this lead appreciably in Tyneside. The smallest crude rates occurred in the Remainder of the South Eastern region and in Greater London. Standardisation for sex, age and condition entirely removed the deficiency of the first of these, whereas sex and age alone accounted for only half of it ; in Greater London standardisation actually accentuated the deficiency a little. Other areas where standardisation made a considerable difference were the Remainder of the East and West Ridings (ratio reduced from 1·05 to 0·99), the Remainder of the North West (raised from 0·95 to 1·00), the North Midlands (reduced from 1·02 to 0·97), the West Midlands conurbation (reduced from 1·04 to 0·96), the South (raised from 1·01 to 1·06), the South West (raised from 0·95 to 1·02) and most of all Wales II (raised from 0·95 to 1·11, i.e., to second place).

The peculiar sex-age-condition structure of the local population thus made a difference of 0·05 or more to the index in 9 of the 17 mutually exclusive areas ; standardisation for sex and age alone gave a sufficient indication of that in 5 of these (if the Remainder of the North West is included), provided about half the total adjustment in 3 (Remainder of the North West, Remainder of the South East and Wales II), and none in 2 (Remainder of East and West Ridings and North Midlands). There were no large changes between columns 2 and 3 without counterpart between columns 2 and 4.

The ratios of column 4 are illustrated in Diagram 6.

Diagram 6.—Live birth rates standardised for sex, age and marital condition, conurbations and remainders of regions, 1956



Urban and rural aggregates showed no great differences in crude birth rates. Standardisation reveals, however, that this was merely because the different sex-age structure of the local population hides the excess of rural fertility rates over those of urban areas.

The legitimate birth rate indexes in columns 5 and 6, both crude* and standardised, are very similar to their counterparts for all births in columns 2 and 4.

The illegitimate indexes in columns 7 and 8, however, are rather different. Among the 17 mutually exclusive areas, the crude rates were high in all the conurbations except Tyneside, and otherwise only in the Southern region.

* Columns 5 and 7 are respectively derived from rates of legitimate and illegitimate births per 1,000 home population irrespective of sex, age or marital condition.

But in Greater London and Merseyside, two of the three areas with the highest rates, the excess disappeared entirely on standardisation for sex, age and condition. That was not the case with the others mentioned ; in the West Yorkshire and South East Lancashire conurbations and the Southern region the excess was actually increased by taking account of the sex-age-condition structure of the population. Crude rates were low in Wales, the South West and in all the remainders of regions containing conurbations. Standardisation usually raised them, and removed the deficiency in the Remainder of the East and West Ridings and in that of the Midlands, though it increased it in Wales II. In the North Midland region the crude rate was equal to that of England and Wales, but standardisation increased it by no less than 17 per cent.

Table XXVI.—Ratios of standardised fertility rates and mean family sizes in regions, conurbations and urban and rural aggregates to those of England and Wales, 1951 and 1956

Area	1956 Registration statistics All married women	1951 Census statistics Women married once only		
	Fertility rates standardised for current age	Fertility rates standardised for : Marriage age	Fertility rates standardised for : Marriage age and duration	Mean family sizes standardised for marriage age and duration
1	2	3	4	5
ENGLAND AND WALES	**1·00**	**1·00**	**1·00**	**1·00**
Conurbations and remainders of Regions :				
Tyneside Conurbation	1·10	1·10	1·09	1·09
Remainder of Northern Region	1·11	1·10	1·11	1·12
West Yorkshire Conurbation	0·98	0·99	0·98	0·95
Remainder of East and West Ridings	0·99	1·00	1·01	1·02
South East Lancashire Conurbation	1·01	1·00	0·99	0·97
Merseyside Conurbation	1·28	1·26	1·24	1·24
Remainder of North Western Region	1·01	0·99	0·98	0·99
North Midland Region	**0·96**	**0·98**	**0·98**	**0·99**
West Midlands Conurbation	0·95	0·97	0·97	1·02
Remainder of Midland Region	1·01	1·02	1·01	1·02
Eastern Region	**1·06**	**1·00**	**1·02**	**0·99**
Greater London	0·89	0·91	0·91	0·92
Remainder of South Eastern Region	1·00	0·97	1·01	0·99
Southern Region	**1·06**	**1·09**	**1·03**	**1·01**
South Western Region	**1·03**	**1·00**	**1·01**	**1·00**
Wales I (South East)	1·01	1·05	1·05	1·04
Wales II (Remainder)	1·12	1·09	1·10	1·12
Urban/Rural Aggregates :				
Conurbations	0·97	0·98	0·98	0·98
Areas outside Conurbations :				
Urban areas with populations of 100,000 and over	0·96	1·00	0·99	1·00
Urban areas with populations of 50,000 and under 100,000	0·98	0·97	0·97	0·99
Urban areas with populations under 50,000	1·02	0·99	1·00	1·00
Rural Districts	1·09	1·08	1·06	1·03

Among the urban and rural aggregates the crude illegitimate rates are strictly in order of urbanisation. But standardisation reduces the conurbations ratio almost to the national average (largely owing to the effect on Greater London and Merseyside and to the great weight of these in the total), while raising all the others a little.

In Table XXVI the ratios of column 6 in Table XXV are compared with some data derived from the 1951 Census. Column 3 gives ratios of fertility rates of once-married women under age 50, standardised for age at marriage, and column 4 gives similar ratios standardised for marriage duration as well as age. They relate to births occurring in the year ended 8th April, 1951. Column 5 gives mean family sizes at census date standardised for both factors. The four sets of ratios are very similar, with three exceptions. The excess in the 1956 fertility rate of the Eastern region was not clearly visible in any of the 1951 indexes. That of the Southern region, while even greater in column 3 than in column 2, is reduced by standardisation for duration of marriage (column 4), and was not visible in the mean family sizes of 1951 (column 5). The excess of the rural districts was also much less marked in the mean family sizes of 1951 than in the fertility rates. It is true that for women aged 45–49 (whose fertility was practically completed by census date) the mean family size ratio was 1·06; but this too was reduced to 1·03 on standardising for socio-economic group.*

Stillbirths

The registration of stillbirths in England and Wales began on 1st July, 1927, when the Births and Deaths Registration Act, 1926, came into operation. The *Statistical Reviews*, Part II, show numbers of stillbirths in England and Wales as a whole by quarters (Table D) and annually by sex and legitimacy (Table B). Table E1 gives annual numbers of stillbirths by sex and legitimacy for standard regions, conurbations, urban and rural aggregates, metropolitan and county boroughs, and administrative counties ; Table E gives the total numbers for all county districts. Under the Population (Statistics) Act, 1938, additional information has been collected at the registration of births, including stillbirths, and detailed tabulations of stillbirths by legitimacy and age of mother appear in the Fertility Analyses of Part II of the annual *Reviews*.

The stillbirth rate has remained fairly stable since 1949 in the neighbourhood of 23·0 per thousand total live and still births. The figures are shown in Table XLVII on page 85. The effects of multiple maternities, age of mother and birth order were amply discussed in the Civil Text Volume for 1946–50, pages 141–144, where it was shown that the risk is much higher in multiple than in single births (especially at the younger ages of mother where the single birth risks are lower) ; is higher in male than in female births ; increases with age of mother except at the youngest ages ; and independently of age varies with parity, being highest at first births and lower at the second than at any other higher parity birth.

The seasonal incidence of stillbirths is discussed on pages 30–32, and the medical aspects on pages 84 ff and 244 ff.

* See *Census 1951, England and Wales, Fertility Report.*

MARRIAGES

In 1956 there were 352,944 marriages contracted in England and Wales. Marriages and marriage rates for past years are given in serial form in Tables B and C of Part II and in Table D for calendar quarters. The summary in Table XXVII shows that the number of marriages was about 5,000 smaller than in 1955, but that this was due to the smaller number of unmarried persons of marriageable age in the population. The crude marriage rate (15·7 persons married per 1,000 total population) declined fractionally compared with 1955. But the male and female rates per 1,000 unmarried population aged 15 and over* were practically unchanged. They were still respectively 16 and 11 per cent higher than in 1938, and higher than the average for 1951–55.

Table XXVII.—Number of marriages and persons married per 1,000 total population of all ages and per 1,000 unmarried† population aged 15 and over, by sex, 1938 to 1956, England and Wales

Period	Marriages (thousands)	Per 1,000 total population		Per 1,000 unmarried† population aged 15 and over			
				Males		Females	
		Rate	Ratio to 1938 rate taken as 100	Rate	Ratio to 1938 rate taken as 100	Rate	Ratio to 1938 rate taken as 100
1938 ..	361·8	17·6	100	61·2	100	47·8	100
1939–50‡ ..	381·9	17·9	102	68·2	111	53·0	111
1951–55‡ ..	350·9	15·8	90	68·3	112	51·4	108
1954 ..	341·7	15·4	88	67·0	109	50·4	105
1955 ..	357·9	16·0	91	70·7	116	53·1	111
1956 ..	352·9	15·7	89	70·7	116	52·9	111

† Single, widowed and divorced.

‡ Annual averages.

Marriage rates by sex, age and prior marital condition

The more detailed analysis in Tables H and XXVIII, showing marriage rates by sex, age and prior marital condition, confirms that the fall in the number of marriages was due to the smaller population at risk.

* Though 16 is the minimum legal age for marriage, groupings beginning at age 15 are more convenient for making the necessary population estimates, for applying the rates to other population statistics and for international comparisons.

Table XXVIII.—Marriage rates by sex, age and prior marital condition, 1931 and 1938 to 1956, England and Wales

(The ratios in columns 10 and 12 were calculated before rounding off the rates)

Year	Annual marriage rates per 1,000 in each age-group							Marriage rate per 1,000 population over 15	Ratio to corresponding rate for 1938 taken as 1,000	Marriage rate which would have resulted had the 1938 age rates been in operation	Ratio of actual marriage rate (col. 9) to rate in column 11 taken as 1,000
	15–	20–	25–	30–	35–	45–	55 and over				
1	2	3	4	5	6	7	8	9	10	11	12
BACHELORS											
1931	3·3	72·3	152·2	111·5	49·8	16·4	5·4	56·0	864	65·4	856
1938	3·2	87·0	176·8	127·5	57·0	18·5	4·8	64·8	1,000	64·8	1,000
1939–50	6·4	112·1	175·6	128·3	61·2	20·8	5·1	71·2	1,100	63·1	1,129
1951–55	6·7	132·1	172·5	107·7	49·1	18·2	5·1	70·8	1,093	60·7	1,167
1954	6·6	135·2	169·9	102·3	46·4	17·4	5·0	69·7	1,076	59·9	1,164
1955	8·2	146·3	181·8	108·5	48·5	17·6	5·1	74·0	1,143	59·0	1,256
1956	9·4	152·0	178·8	108·8	47·5	17·3	4·9	74·7	1,153	58·3	1,280
WIDOWERS AND DIVORCED MEN											
1931	—	139·2	172·7	189·2	133·5	67·6	14·9	35·8	938	40·7	879
1938	—	153·6	174·5	248·0	152·6	79·1	15·9	38·1	1,000	38·1	1,000
1939–50	—	217·6	425·9	338·1	214·8	106·0	17·6	50·5	1,323	38·1	1,327
1951–55	—	133·7	406·8	318·8	206·4	117·2	19·7	55·2	1,447	40·3	1,370
1954	—	108·3	362·4	296·8	187·4	113·1	19·4	52·6	1,379	40·7	1,293
1955	—	92·0	411·0	284·9	183·9	116·4	20·2	53·5	1,404	41·0	1,305
1956	—	94·0	347·2	262·8	168·8	109·7	20·1	50·5	1,325	40·9	1,235
SPINSTERS											
1931	17·1	106·8	119·1	57·2	21·3	7·9	2·2	51·7	842	68·4	756
1938	22·6	147·9	154·0	67·2	25·7	8·6	2·0	61·4	1,000	61·4	1,000
1939–50	36·8	191·1	153·3	72·8	28·9	10·2	2·0	69·5	1,132	56·5	1,230
1951–55	43·9	232·3	156·5	75·3	29·5	10·4	2·1	72·0	1,172	50·2	1,434
1954	44·6	237·8	154·5	72·0	28·8	10·2	2·1	71·3	1,162	49·1	1,452
1955	50·5	255·3	164·4	79·4	30·8	10·8	2·1	76·3	1,243	48·3	1,581
1956	54·4	262·7	163·1	79·9	30·9	10·4	2·1	77·3	1,259	47·3	1,633
WIDOWS AND DIVORCED WOMEN											
1931	—	128·2	138·8	94·1	36·5	14·1	2·2	9·8	964	11·9	822
1938	—	197·1	172·4	114·2	50·1	14·7	2·5	10·2	1,000	10·2	1,000
1939–50	—	294·0	308·6	170·3	73·0	21·6	2·7	15·7	1,548	10·9	1,448
1951–55	—	403·0	355·6	188·2	84·2	29·3	3·0	16·1	1,581	9·5	1,682
1954	—	427·0	382·8	183·3	80·1	29·1	2·9	15·2	1,491	9·2	1,650
1955	—	433·7	445·3	199·5	82·8	30·5	3·1	15·3	1,507	8·8	1,747
1956	—	450·0	460·0	196·1	80·5	29·7	3·0	14·4	1,415	8·4	1,708

This is brought out particularly by the comparison of the same rates in terms of index numbers in Table XXIX and by Diagram 7. The rates continued to rise at the youngest ages, particularly for first marriages, and to remain high above the pre-war level except for bachelors over 25. There has been no change in the tendency for a larger proportion of people to get married at some time in their lives and for more of them to do so earlier. First marriage rates in the age-group under 20 have been climbing rapidly ; the spinster rate in this group overtook that in the 35–44 group in 1937 (that in the narrower 35–39 group in 1941, and again in 1949 after a break in 1946–48) and is leaving it further and further behind.

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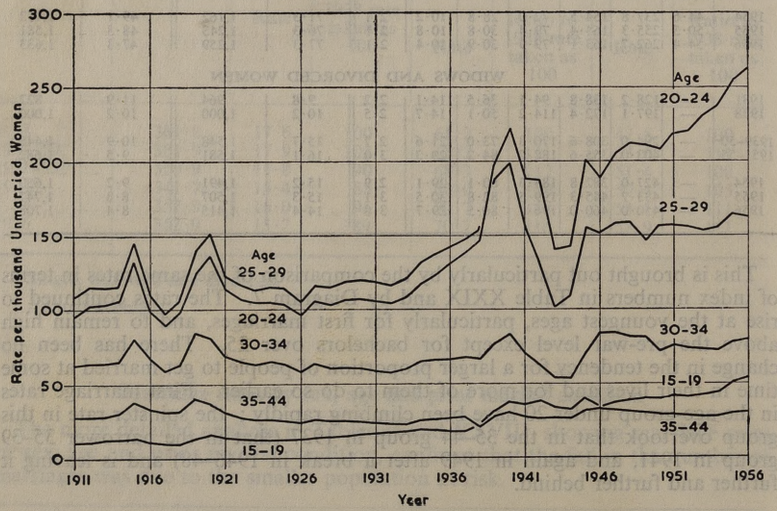
Table XXIX.—Ratios of marriage rates by sex, age and prior marital condition, to those of 1938 taken as 100, 1931 and 1939 to 1956, England and Wales*

(*All the ratios were calculated before rounding off the rates in Table XXVIII*)

15–	20–	25–	30–	35–	45–	55 and over	All Ages†	Period	15–	‡ 20–	25–	30–	35–	45–	55 and over	All Ages†
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
BACHELORS									WIDOWERS AND DIVORCED MEN							
100	83	86	87	87	89	114	86	1931	—	—	99	76	87	85	94	88
100	100	100	100	100	100	100	100	1938	—	—	100	100	100	100	100	100
198	129	99	101	107	113	107	113	1939–50	—	—	244	136	141	134	111	133
205	152	98	84	86	99	107	117	1951–55	—	—	233	129	135	148	124	137
204	155	96	80	81	94	105	116	1954	—	—	208	120	123	143	122	129
254	168	103	85	85	95	106	126	1955	—	—	236	115	121	147	127	131
290	175	101	85	83	94	103	128	1956	—	—	199	106	111	139	126	124
SPINSTERS									WIDOWS AND DIVORCED WOMEN							
76	72	77	85	83	92	108	76	1931	—	65	81	82	73	96	89	82
100	100	100	100	100	100	100	100	1938	—	100	100	100	100	100	100	100
163	129	100	108	112	119	100	123	1939–50	—	149	179	149	146	146	109	145
195	157	102	112	115	122	103	143	1951–55	—	204	206	165	168	199	122	168
198	161	100	107	112	120	103	145	1954	—	217	222	161	160	197	119	165
224	173	107	118	120	125	101	158	1955	—	220	258	175	165	207	126	175
241	178	106	119	120	121	104	163	1956	—	228	267	172	161	201	122	171

* Some of the rates have been revised.
† Age-standardised.
‡ Based on small numbers.

Diagram 7.—Marriage rates§ of women by age, 1911 to 1956, England and Wales



§ 1911–37 : All marriages per 1,000 spinsters, widows and divorced women. 1938–56 : First marriages per 1,000 spinsters.

A more detailed discussion of the trends in marriage rates in recent years can be found in the Commentary Volume for 1955, pages 45–47, and in the marriage chapters of previous volumes.

Marriages of minors.—The tendency to younger marriage is naturally reflected in the proportion of brides and grooms who are under 21. For men it rose from 3·4 per cent in 1938 to 7·8 per cent in 1955 and 8·7 per cent in 1956, and for women from 16·4 per cent to 30·3 and 32·2 per cent, respectively, in the same years. These marriages were last discussed in detail in the Commentary Volume for 1954, pages 38 and 39.

A nuptiality table for England and Wales, 1951–55

A set of marriage rates can be summarised in a nuptiality table, in the same way as death rates are summarised in a life table. It is a convenient way of bringing out their implications, and also useful because the results can be combined with fertility rates or mean family sizes in the calculation of replacement rates.

Such a table may start with, say, 100,000 female births, and apply to them successively the probabilities of marriage at each age. These probabilities, or nuptiality rates, are calculated from the (central) age marriage rates in the same way as mortality rates (q_x) from death rates. The operation gives the number surviving unmarried at each age in a hypothetical population subject throughout its life to the set of marriage rates used, in the absence of mortality. The result is called a gross nuptiality table. If mortality is allowed for as well as marriage the result is a net nuptiality table.

In connection with the Fertility Report on the 1951 Census a net nuptiality table for females under age 50 was calculated, using the net nuptiality of 1951–55.* This went a step further by calculating, not only the number of deaths, first marriages and single survivors, but also the number of widowhoods, divorces and remarriages, and of survivors married once only and more than once, each by duration of marriage as well as age, and of those widowed or divorced. The results (except those by duration of marriage) are reproduced in Appendix C, Table 2.

The corresponding male table has now been computed and the results (other than those by marriage duration) are given in Table 1 of Appendix C. The divorce rates used for the males have had to be estimated somewhat indirectly, but any errors in them should make little difference to the numbers shown as married once only. The radix of the table has been taken as 105,900 births, to preserve the sex ratio of 1,059 male per 1,000 female births recorded in 1951–55.†

The tables only go up to age 50, mainly because older ages were not needed for the fertility analysis which was their original purpose, but also because the limitation made it possible to neglect the mortality differences between different marital conditions. 99 per cent of all first marriages in England and Wales take place below the age of 50, among both men and women ; 98 per cent below the age of 45.‡ When remarriages are included these proportions naturally become a little

* For details see *Census 1951, England and Wales, Fertility Report*, Chapter IV, Appendix 2.

† The male replacement rate calculations quoted in the birth chapter were based on an abridged nuptiality table. The number of first marriages under age 45 so arrived at exceeded those in the detailed table now computed by a mere ¼ per cent.

‡ The total number of first marriages is normally between 1 and 2 per cent higher among women than among men, there being rather more remarriages among men. (The total number of *all* persons married must, of course, be the same for both sexes.)

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smaller and also less equal between the sexes, but in 1956, for example, the number of *all* men married under the age of 50 was about the same as the number of all women married under the age of 45, both being just over 94 per cent of the total number of marriages. This means that the tables not only contain the great bulk of all marriages, but also reflect sufficiently the requirement that consistent tables must have the same total number of marriages of men and of women.

Table XXX.—Marriages of men and women under age 50 among the survivors of 105,900 male and 100,000 female live births according to the net nuptiality of 1951–55, England and Wales

Men			Age-group	Women		
Total	First marriages	Re-marriages		Total	First marriages	Re-marriages
3,351	3,351	—	**15–19**	20,667	20,667	0
49,047	49,004	43	**20–24**	52,642	52,338	304
28,079	27,284	795	25–29	13,994	12,275	1,719
10,194	8,306	1,888	30–34	5,383	3,382	2,001
5,249	3,154	2,095	35–39	3,054	1,274	1,780
3,299	1,399	1,900	40–44	2,167	584	1,583
2,592	722	1,870	45–49	1,706	328	1,378
99,219	**92,498**	**6,721**	**Under 45**	**97,907**	**90,520**	**7,387**
101,811	**93,220**	**8,591**	**Under 50**	**99,613**	**90,848**	**8,765**

Thus Table XXX, which summarises the numbers of marriages from the two tables, immediately brings out the fact that the male and female marriage rates of the period were not consistent with each other—they implied 4 per cent more marriages of men under 50 than of women under 45. That was possible because the sex-age structure of the unmarried population was a little abnormal, containing the remains of the former surplus of women which is gradually becoming confined to the older ages where few marriages take place. As the population structure becomes more normal, therefore, either male marriage rates will tend to fall (as a result of a shortage of women) or female ones to rise (as a result of the greater relative supply of men), possibly both. Tables XXVIII and XXIX do not suggest that a fall in male rates had set in by 1956 : those for bachelors were still rising, though there were indications of a decline among the remarriage rates which have a much smaller weight in the total. The rise in female rates, however, was continuing apace. More precisely there has been a continuing increase in first marriage rates of both sexes at young ages and much less change at older ones, which means that marriage incidence is surpassing even the level of the 1951–55 tables. Yet the proportions married implied by these tables, shown in Table XXXI, are the highest ever recorded in this country, as can be seen from Table XXXII.

Table XXXI.—Proportions ever-married, married and widowed or divorced according to the net nuptiality of 1951–55, England and Wales

(*Per thousand*)

Figures are rounded and may not add to totals

Men				Age-group	Women			
Ever-married	Married once only	Married more than once	Widowed or divorced*		Ever-married	Married once only	Married more than once	Widowed or divorced*
6	6	—	—	15–19	49	49	—	0
251	251	0	0	20–24	528	525	1	2
685	676	3	6	25–29	838	813	11	13
844	813	17	14	30–34	909	852	32	25
897	840	38	20	35–39	931	842	51	38
920	838	57	24	40–44	940	818	67	55
930	824	76	30	45–49	945	787	80	78

* And not currently married.

The relation between marriage rates and population structure

Table XXXII.—Proportions married and ever-married among men and women aged 45–49, England and Wales

Censuses 1851–1951 and net nuptiality of 1951–55

(*Per thousand*)

	Men		Women	
	Ever-married	Married	Ever-married	Married
Census of				
1851	879	810	874	739
1861	892	831	878	744
1871	901	842	876	740
1881*	901	842	877	734
1891*	896	836	871	728
1901*	886	827	858	726
1911	873	824	835	729
1921	876	837	832	739
1931	890	855	832	733
1951	902	878	848	780
Net nuptiality of 1951–1955 ..	930	900	945	867

* Estimated from data for age-group 45-54.

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More people are getting married, and they are getting married at younger ages. The two things are closely linked, for even without a further increase in the rates at young ages the marriage rates of 1951–55 are sufficient to deplete the unmarried population over age 25 further. Hence the changing age proportions of the marriageable population are bound to lead to a further lowering of the average age at marriage. This is illustrated by Table XXXIII, which shows how the age proportions of spinsters between the ages of 15 and 35 are affected by a continuance of the 1951–55 marriage rates.

Table XXXIII.—Age proportions of spinsters between the ages of 15 and 35, England and Wales

(*Per cent*)

Note.—Figures are rounded and may not add to totals.

Age-group	1951 Census population	1951 Census population projected by net nuptiality of 1951–55 for—			Net nuptiality table population 1951–55	1956 Population estimate
		5 years	10 years	15 years		
Proportions of actual numbers						
15–	49	54	59	61	57	54
20–	29	27	26	26	28	26
25–	13	11	9	8	10	11
30–	9	8	6	4	5	8
15–34	100	100	100	100	100	100
Standardised for number of related live births						
15–	53	55	57	57	57	56
20–	28	27	28	28	28	27
25–	11	10	10	9	10	11
30–	7	7	6	5	5	6
15–34	100	100	100	100	100	100

The proportions in the 1956 population estimate (Table II) correspond closely to those projected from the 1951 Census by survival factors calculated from the 1951–55 nuptiality table. The share of the age-group 15–19 went up from 49 to 54 per cent and that of the groups 25–34 fell from 22 to 19 per cent. Further projection shows the trend continuing in the same direction, though slowing down a little after another five years. It actually carries the proportions beyond those in the nuptiality table itself (57 and 15 per cent). That is a temporary effect due to the varying numbers of births from which the age-groups concerned have sprung ; standardising for the number of births gives the regular progression shown in the lower half of the table.

The relative numbers of men and women in the main marrying age-groups are shown by the following statement. In past Commentary Volumes the number of men aged 15–44 was related to the number of women of the same age. Such a comparison takes no account of the fact that on average men are between two

and three years older at marriage than women. (The difference between the mean marriage ages of all bridegrooms and all brides, shown in Table L of Part II, has gradually increased from just over two years in the nineteenth century and at the beginning of the twentieth to about three in the nineteen-forties and since.) The average of the male populations at ages 15–44 and 20–44 last birthday (roughly equivalent to 17½–45 in exact years) has therefore been related to the average of the female populations at ages 15–44 and 15–39 (say 15–42½).

Males aged 17½–45 per 1,000 females aged 15–42½ (*see text*)

	Census						Estimate 1956	Nuptiality table 1951–55
	1871	1901	1911	1921	1931	1951		
All conditions ..	877	876	892	846	892	988	1,013	1,039
Unmarried	786	787	808	724	800	968	1,052	1,087

The last column of the statement is based on the average number of survivors in the net nuptiality tables for 1951–55. It should be remembered that the ratio for the unmarried in this column is affected by the inconsistency between the male and female marriage rates, mentioned above ; if the female rates came into line with the male there would be fewer unmarried women left and the ratio would be slightly larger.

The ratios for 1921 reflect the losses of the First World War. All the others up to 1931 inclusive show a deficit of unmarried men of about 20 per cent, compared with 4 or 5 per cent when men and women aged 15–44 are related. For all conditions combined the deficit is 11 or 12 per cent compared with 7 or 8. Thus the revision of the age basis of the comparison increases the deficiency of men by about 15 percentage points for the unmarried, but by only 4 points for all conditions combined. The latter, much smaller, difference between the two age bases is caused by the constant increase, up to the early years of the century, in the numbers of births of which these age-groups were the survivors. (The reversal of this last influence has no doubt contributed to the slow increase in the excess of the average marriage age of men over that of women.) The remainder of the total male deficit of 11 per cent, i.e. the 7 per cent which is also shown on the old basis, is largely attributable to the effects of net emigration (predominantly male) and of the war casualties of 1914–18, and the same is true of the excess deficit of 9 per cent among the unmarried.

Since then net emigration has ceased to be of importance and the number of war deaths was much smaller in 1939–45 than in 1914–18. There has also been a slight increase in the masculinity of live births. These changes have been establishing balance between the sexes, and the ratios in the actual population, both of all conditions and unmarried alone, have been approaching those in the life and nuptiality tables. This must have been a powerful factor in raising the marriage rates of women, though not the only one, as the male rates have also risen.

Total married women of reproductive age.—The effect of these high rates in raising the proportion of the population which is married has been shown above in Table XXXII. It is important for the fertility of the community, since that depends largely on the number of married women of reproductive age in the population. The proportions of married women are shown by five-year age-groups under age 50 for selected years in Table XXXIV.

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Table XXXIV.—Married women per 1,000 total female population in each age-group and ratio of proportion to that of 1938 taken as 100 : 1911, 1931, 1938, 1946, 1951, 1955 and 1956, England and Wales

Year	Age-group							Aggregates	
	15–19	20–24	25–29	30–34	35–39	40–44	45–49	20–39	15–49
	Married women per 1,000 total female population								
1911	12	242	558	711	752	755	729	552	502
1931	18	257	587	733	755	749	733	572	529
1938	23	328	643	733	771	768	736	623	566
1946	35	436	696	800	797	784	762	686	626
1951	42	475	769	828	832	812	780	731	666
1955	50	524	800	857	852	839	799	765	689
1956	55	540	806	866	857	845	804	774	697
	Ratio of proportion to that of 1938 taken as 100 (*Calculated before rounding off the proportions*)								
1911	52	74	87	97	97	98	99	89	89
1931	78	78	91	100	98	98	100	92	93
1938	100	100	100	100	100	100	100	100	100
1946	153	133	108	109	103	102	103	110	111
1951	184	145	120	113	108	106	106	117	118
1955	217	160	124	117	110	109	108	123	122
1956	241	165	125	118	111	110	109	124	123

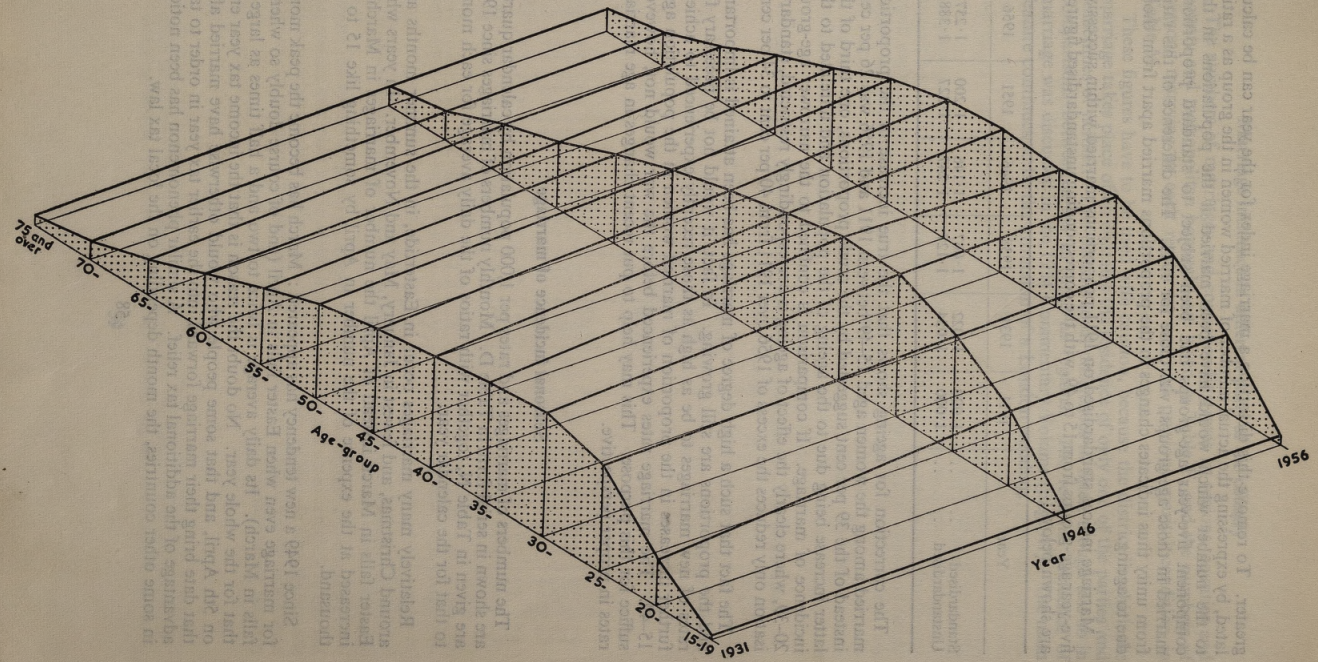
Throughout the period covered by the table the proportions married in the total female population have increased in each age-group and these increases have been outstanding at ages under 25. The proportion in 1956 exceeded that of 1938 by no less than 141 per cent at ages 15–19 and by 65 per cent at ages 20–24. The rise of 25 per cent at ages 25–29 is less striking but hardly less significant, applying as it does to larger proportions married. The increase in the size of the female married population and the tendency for its age structure to become younger is illustrated by Diagram 8.

In any particular year the proportions married increase with advancing age, at first very rapidly and then more slowly, to a maximum close to age 35. They then decline slowly as new marriages are increasingly offset by widowhoods, but the total reduction in the proportion to age 49 is relatively small.

The last two columns of Table XXXIV show the proportion of married women in the reproductive age-group 15–49 as a whole and in the more critical group 20–39, among whom 90 per cent of births occur. The proportions represent the fractions of the reproductive years which fall within married life. From 1911 to 1931 the former proportion rose slightly from 50·2 to 52·9 per cent, and then more rapidly to 56·6 in 1938. It had reached 62·6 by 1946 and 69·7 by 1956. In the age-group 20–39 the proportion rose from 55·2 per cent in 1911 to 77·4 in 1956.

These increases have been exaggerated by the ageing of the population in the 15–49 group since 1911 which has tended to increase the relative number of women at the older ages within the group, i.e. where the proportion married is

Diagram 8.—Comparative size, and age distribution, of the population of married women, 1931, 1946 and 1956, England and Wales



greater. To remove this distortion a marriage index for the year can be calculated, by expressing the actual number of married women in the group as a ratio to the number which would have been married if the populations in the component five-year age-groups had been subject to standard proportions married in those age-groups, viz. those for 1911. The difference of this ratio from unity thus indicates changes in the proportions married apart from those due to ageing.

Marriage indices standardised on 1911 proportions married within successive five-year age-groups from 15 to 49, with the corresponding unstandardised figures, are shown below :

Year	1911	1931	1938	1946	1951	1956
Standardised	1·000	1·022	1·067	1·146	1·200	1·257
Unstandardised	1·000	1·054	1·127	1·247	1·327	1·388

The correction for ageing shows that the true increase in the proportion married among the women aged 15–49 between 1911 and 1956 was 26 per cent instead of the 39 per cent suggested by the crude proportions, one third of the latter increase being due to the ageing of the population and unrelated to the incidence of marriage. If comparison is confined to the narrower age-group 20–39, where clearly the effect of ageing is correspondingly restricted, standardisation only reduces the excess of 1956 over 1911 from 40 per cent to 34 per cent.

The fact that such a high degree of marriage has been attained is important, and the proportions are still growing. In fact, it would not be necessary for rates of new marriages to be as high as those recently experienced to achieve further increases in the proportion of married women in the population aged 15–49. The marriage rates experienced before the war would not, however, suffice for this purpose. This may help to put recent changes in age marriage rates in proper perspective.

Seasonal incidence of marriage

The numbers of marriages and rates per 1,000 population by calendar quarter are shown in serial form in Table D. Monthly numbers of marriages since 1947 are given in Table N, together with ratios of the daily average for each month to that for the calendar year.

Relatively many marriages occur in Eastertide, in the summer months and around Christmas, and fewest in January, May and November. In years when Easter falls in March instead of April the number of marriages in March is increased at the expense of the number in April by something like 15 to 20 thousand.

Since 1949 a new tendency has appeared : March has become the peak month for marriage even when Easter falls in April (and of course doubly so when it falls in March). Its daily average is twice to two and a half times as large as that for the whole year. No doubt the reason is that the income tax year ends on 5th April, and that some people who would otherwise have married after that date bring their marriage forward into the earlier tax year in order to take advantage of the additional tax relief. A similar phenomenon has been noticed in some other countries, the month depending on the local tax law.

Marriage incidence in different parts of the country

The numbers of marriages and corresponding rates in regions, counties and county and metropolitan boroughs are given in Table F, and the numbers of persons marrying in each region by age and previous marital condition in Table M.

These figures have to be used with caution, because the district in which the marriage takes place often contains the residence of only one of the parties and sometimes of neither. This distorts local differences in rates, though less so in comparisons between areas as large as regions. The regional incidence of marriage was discussed in the 1954 Commentary Volume (page 47). The main feature continues to be the attraction of a London wedding.

WIDOWHOOD

In Table SS of Part II the number of marriages ended by the death of a spouse are given by joint ages of the deceased and the surviving spouse.

Table XXXV shows widowhood* rates by age for selected periods from 1939 to 1956. It is possible that the rates per 1,000 married women at the younger ages are slightly over estimated as a result of the method adopted, viz. rateable distribution, for dealing with deaths of people whose marital condition is not stated. The possible amount of bias is very small, however, and could not affect the general picture.

The deaths which generate these rates occur not at the specified ages but at ages distributed about a mean that is slightly above that of the married women whose husbands die (slightly below that of the married men whose wives die) ; also the population of married people is selected in that it excludes any people who could not marry because of ill health. Nevertheless, the rates in Table XXXV do reflect the sex and age distribution and annual changes of mortality rates.

Table XXXV.—Widowhood rates, 1939, 1946–50 and 1952 to 1956, England and Wales†

1939	1946–50	1952	1953	1954	1955	1956	Age of surviving spouse	1939	1946–50	1952	1953	1954	1955	1956
Deaths of wives per 1,000 married men								Deaths of husbands per 1,000 married women						
8·7	7·5	7·0	7·0	6·9	6·9	6·8	15 and over	14·3	13·5	13·6	13·7	13·7	13·9	14·0
2·1	1·4	0·7	0·6	0·5	0·5	0·5	Under 25	1·8	1·1	0·9	0·8	0·8	0·8	0·8
2·3	1·4	0·8	0·8	0·7	0·6	0·6	25–	2·0	1·6	1·2	1·2	1·1	1·1	1·1
2·3	1·6	1·0	1·0	1·0	0·9	0·8	30–	2·8	2·2	1·8	1·7	1·7	1·6	1·6
2·8	1·9	1·4	1·3	1·3	1·2	1·2	35–	4·4	3·3	2·9	2·8	2·8	2·7	2·7
3·6	2·4	2·0	2·0	2·0	1·8	1·8	40–	6·6	5·2	4·7	4·6	4·5	4·5	4·5
4·9	3·9	3·1	3·0	3·0	3·0	2·9	45–	10·3	9·0	8·2	7·8	7·8	7·9	7·7
7·4	5·7	5·2	5·0	5·0	4·8	4·5	50–	16·0	14·2	14·2	14·2	13·9	13·6	13·1
10·5	8·6	7·5	7·7	7·3	7·4	7·4	55–	22·9	21·2	21·2	21·5	21·4	21·2	21·6	22·0
16·5	13·7	12·3	12·1	11·8	12·0	11·8	60–	35·0	33·0	32·8	33·0	32·5	33·0	33·3
24·8	21·0	19·7	19·8	19·1	19·1	19·0	65–	49·6	47·1	48·0	49·2	48·3	49·3	49·8
37·3	32·9	31·6	30·9	30·5	30·7	30·4	70–	72·1	69·8	69·4	70·2	69·9	70·9	72·3
73·3	58·5	57·9	58·6	56·8	57·8	59·2	75 and over	126·4	95·3	106·5	108·2	107·6	113·3	111·9

† Non-civilian casualties were not classified by marital condition before 1950. An approximate allowance has been made for them by rateable allocation.

The chance of a married woman aged 25 becoming a widow before she attains the age of 45 is not more than 1 in 20, though this is about twice the chance that she herself will die within the same period. It is clear that mortality rates at ages under 45 are so low that they are not significantly depleting the younger married population.

* A widowhood rate is defined as " The number of married women (men) whose husbands (wives) die in the current year per 1,000 married women (men) in the specified age-group ".

DIVORCES AND REMARRIAGES OF DIVORCED PERSONS

Divorces

Divorce statistics are shown in Tables O and P1 to P4 of Part II. Table XXXVI gives the number of divorce* petitions filed and of decrees absolute granted in 1931–35 (average) and in each year since 1936, and the rates per 1,000 married women aged 20–49. The bulk of divorces occurs in this age range, and its use for the denominator in place of the total number of married couples gives the rates a rough measure of age standardisation.

Table XXXVI.—Divorce petitions filed and decrees absolute granted, 1931 to 1956, England and Wales

Year	Petitions filed		Decrees Absolute granted	
	Number	Per 1,000 married women aged 20–49	Number	Per 1,000 married women aged 20–49
1931–35† ..	4,784	0·80	4,011	0·67
1936	5,749	0·92	4,057	0·65
1937	5,903	0·93	4,886	0·77
1938	10,233	1·59	6,250	0·97
1939	8,703	1·33	7,955	1·22
1940	7,086	1·05	7,755	1·15
1941	8,305	1·21	6,368	0·93
1942	12,003	1·72	7,618	1·09
1943	15,385	2·19	10,012	1·43
1944	18,969	2·70	12,312	1·75
1945	25,711	3·65	15,634	2·22
1946	43,163	6·09	29,829	4·21
1947	48,501	6·81	60,254	8·47
1948	37,919	5·28	43,698	6·08
1949	35,191	4·87	34,856	4·82
1950	29,729	4·09	30,870	4·24
1951	38,382	5·23	28,767	3·92
1952	34,567	4·69	33,922	4·60
1953	30,542	4·14	30,326	4·11
1954	29,036	3·93	28,027	3·79
1955	28,314	3·83	26,816	3·62
1956	28,426	3·83	26,265	3·54

* Dissolution and nullity.

† Annual average.

There has been an upward trend in the incidence of divorce in this country ever since the basis of the present divorce law was established a hundred years ago. Each of the two World Wars added greatly to the otherwise slow increase. In addition to the considerable fluctuations caused by the upheaval of war the sequence of the figures is also disturbed by changes in the law such as the Matrimonial Causes Act, 1937*, and enactments relating to financial assistance to litigants in need of it. The latest of these is the Legal Aid and Advice Act, 1949, which came into operation on 2nd October, 1950.

The permanent effect of these different disturbances is difficult to isolate. This is largely because most changes in the law have called forth a spate of petitions from people who would not or could not get a divorce until the changes were introduced, and possibly from some who were already going to file a petition but postponed it in order to take advantage of the new facilities. It takes a few years for the petition rate to settle down to its new normal level. Before this could happen after the Matrimonial Causes Act of 1937 the war had broken out, while the fluctuation caused by the Legal Aid and Advice Act was superimposed on the decline from the post-war peak.

It is clear, however, that the permanent increase in divorce due to these two enactments is much smaller than might be suggested by the high proportion of petitioners taking advantage of their provisions. (This proportion is of the order of half in the case of each enactment.) Taking account of such evidence as the proportion of petitions brought by husbands and wives respectively one may hazard the guess that the rise in the long-term trend of the divorce petition rate attributable to the Act of 1937 was of the order of 20 per cent, while that due to the Act of 1949 was rather smaller, perhaps only of the order of 5 per cent.

These figures are no more than guesses at the probable order of magnitude, but with that in mind they may be used for an attempt to see the changes in divorce incidence since before the war in perspective. There were 4·8 times as many divorce petitions filed in 1956 as in 1937, but some of this increase was due to the rise in the number of married couples ; the rate per 1,000 married women aged 20–49 was only 4·1 times as large. If allowance is made for the Acts of 1937 and 1949 this is reduced to between 3 and 3½ times, and if the pre-war average rate of increase is extrapolated to give an expected rate for 1956 the actual rate (allowing for the changes in the law) is about twice as large.

These ratios give an idea of the scale of the permanent increase in divorce incidence brought about by the war. By now the temporary effects both of the war and of the 1949 Act must have passed, and it should be noted that at present there is no clear evidence of the usual rising trend.

The discussion so far has been in terms of petitions filed rather than divorce decrees made absolute, because the latter are subject to variable time lags according to the accumulation of work in the courts and changes in procedure. Before the war the proportion of petitions resulting in decrees absolute averaged something over 80 per cent and in recent years something over 90 per cent.

The detailed tables of decrees absolute by class of case, ages of the parties, duration of marriage and number of children were last discussed at length in the Civil Text Volume for 1946–1950†. It was estimated there that with post-war divorce rates the average proportion of marriages ultimately ending in divorce was in the neighbourhood of 7 per cent, being rather larger for very young marriage ages and smaller for the older ones.

* This Act came into operation on 1st January, 1938. *Inter alia* it established cruelty, desertion and lunacy as grounds for divorce.

† *Statistical Review* for 1946–1950, Civil Text Volume, pages 57–67.

Remarriages of divorced persons

An important aspect of divorce is its impact upon the number of married couples in the population and hence on the number of legitimate births. For an assessment of this impact the incidence of divorce and of remarriage of divorced persons must be examined together, since the married population is only reduced to the extent that divorced persons do not marry again.

The general trend of the numbers of married persons who were divorced and of divorced persons who remarried is shown in Table XXXVII.

Table XXXVII.—Annual number of persons divorced and of divorced persons who remarried, 1926 to 1956, England and Wales

Period	Number of persons divorced in the period	Number of divorced persons remarrying in the period							
		Persons	Men	Women	Divorced men marrying spinsters	Divorced men marrying widows	Divorced men and women inter-marrying	Divorced women marrying bachelors	Divorced women marrying widowers
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1926–30	6,716	3,917	2,128	1,789	1,662	270	392	1,225	368
1931–35	8,022	5,154	2,777	2,377	2,179	302	592	1,597	484
1936–40	12,361	8,558	4,580	3,978	3,641	464	949	2,746	758
1941–45 *	20,778	12,548	7,093	5,455	5,453	874	1,532	3,587	1,102
1946–50	79,803	48,898	26,273	22,625	17,767	3,303	10,406	14,271	3,151
1951–55	59,143	43,785	22,547	21,238	14,077	2,838	11,264	12,310	3,296
1951	57,534	44,171	23,110	21,061	14,809	2,880	10,842	12,524	3,116
1952	67,844	46,098	23,719	22,379	14,861	2,965	11,786	13,071	3,415
1953	60,652	43,989	22,557	21,432	14,114	2,798	11,290	12,349	3,438
1954	56,054	41,979	21,555	20,424	13,257	2,743	11,110	11,658	3,211
1955	53,632	42,686	21,793	20,893	13,343	2,806	11,288	11,947	3,302
1956	52,530	40,598	20,721	19,877	12,534	2,648	11,078	11,320	3,018

* Annual averages.

Table XXXVIII shows the number of divorced persons remarrying expressed as a percentage of the number of persons divorced in the same period (columns (2) to (5) of Table XXXVII).

Divorced persons who remarry during any period are not confined to those granted a decree absolute during the same period, so that the above figures do not precisely represent the proportion of divorced persons who ultimately remarry. Most of these figures will understate the true proportion, though perhaps not by a substantial amount when the rate of increase of divorces is slow. The figures for the years 1948–51 and 1953–56 after peaks in divorce incidence may, however, overstate the proportion. Bearing these disturbances in mind it still seems likely that the proportion of divorced persons who ultimately remarry is in the region of three quarters, so that the net loss to the married population is only a fraction of the total number divorced.

Throughout the period covered by Table XXXVII (1926–1956) the number of divorced men who remarried exceeded that of divorced women who remarried. The mean percentage ratios of divorced women to divorced men among those remarrying rose slightly between 1926–30 and 1936–40 from 84·1 to 86·9, fell to 76·9 in 1941–45, and rose to 86·1 in 1946–50 and 94·2 in 1951–55. In 1956 the ratio was 95·9 per cent.

Table XXXVIII.—Annual number of divorced men and women remarrying as a percentage of those divorced in the same period, 1926 to 1956, England and Wales

Period	Percentage of divorced persons remarrying			Percentage ratio of divorced women to divorced men among those remarrying
	Persons	Men	Women	
(1)	(2)	(3)	(4)	(5)
1926–30	58·3	63·4	53·3	84·1
1931–35	64·2	69·2	59·3	85·6
1936–40	69·2	74·1	64·4	86·9
1941–45	60·4	68·3	52·5	76·9
1946–50	61·3	65·8	56·7	86·1
1951–55	74·0	76·2	71·8	94·2
1947	47·3	51·0	43·5	85·2
1948	67·2	71·4	63·0	88·2
1949	73·9	79·3	68·4	86·3
1950	77·2	81·9	72·6	88·6
1951	76·8	80·3	73·2	91·1
1952	67·9	69·9	66·0	94·4
1953	72·5	74·4	70·7	95·0
1954	74·9	76·9	72·9	94·8
1955	79·6	81·3	77·9	95·9
1956	77·3	78·9	75·7	95·9

GENERAL MORTALITY

Numbers of deaths

Deaths registered in 1956 in England and Wales numbered 521,331, 267,904 being of males and 253,427 of females. By comparison with the 266,976 male and 251,888 female deaths which were registered in 1955, there was an increase of 3 per thousand in male and 6 per thousand in female deaths.

Unless otherwise stated, the deaths recorded in the *Registrar General's Statistical Review* are those registered in the calendar year and not deaths which occurred in that year. The deaths recorded are total deaths, that is to say they include deaths of non-civilians registered in this country and of fo eign visitors. Deaths of non-civilians are not shown separately.

Definitions

Home population.—This consists of the resident civilian population, together with members of British, Commonwealth and foreign armed forces stationed in the country at the time.

Area of usual residence.—In all areal tables deaths are classified according to the area of usual residence of the deceased. The inmates of certain categories of institutions, as, for example, almshouses, homes for old people and boarding schools, are regarded as normally resident in those institutions. The definition of usual residence was modified in 1953, the chief alteration being that people dying in hospitals for the chronic sick and in mental and mental deficiency hospitals were regarded as being resident in the hospital. This practice has been slightly modified by not now including certain chronic sick hospitals, owing to the short average duration of stay of patients in them. The effect of the former change was to increase substantially the death rate in some of the smaller areas with large institutional populations. For example, Epsom and Ewell municipal borough, which accommodates several mental hospitals, had a population in 1951 of 68,010 persons, and the deaths in that year numbered 721, the institutional deaths having been " transferred out ". In 1956 the deaths of persons " usually resident ", in the sense defined above, numbered 1,226 in a population estimated at 67,580. The changes over the period 1951 to 1956 were as follows :

	1951	1952	1953	1954	1955	1956
Deaths	721	610	1,146	1,141	1,118	1,226
Estimated population ..	68,010	67,660	67,600	67,130	67,210	67,580
Crude death rate per thousand population.	10·6	9·0	17·0	17·0	16·6	18·1

Crude death rates represent the total number of deaths from all causes or from a specified cause during the year, per thousand or per million of the estimated mid-year home population. For examples of crude death rates see Tables 8 and 12 in Part I of the *Statistical Review*.

Sex-age specific death rates are calculated for all or specified causes by dividing the number of deaths of persons in the selected group by the corresponding number of persons in the mid-year population, the rate being expressed per thousand or per million. Exceptions to this are the various rates of infant mortality, which are based on appropriate live births, and rates for stillbirths, perinatal mortality and maternal mortality, which are based upon total numbers of birth occurrences, i.e. both live and still.

Referring to Part I of the *Statistical Review* :

Sex-age specific death rates and the infant mortality rate for periods from 1841–1956 will be found in Table 4.

Sex-age specific death rates for local areas may be calculated by using Tables 15 and 19 in conjunction with the populations in Table 2.

Sex-age specific death rates for individual causes for England and Wales as a whole may be calculated by using Table 17 in conjunction with the populations in Table 1.

Standardised death rates are of two types, those used to compare mortality trends in a given area or group over the course of some years and those used to compare death rates in different areas or groups in a given year. For example, a standardised death rate by social class would take into account the different age-structures of the social classes.

The comparative mortality index (C.M.I.), which replaced the standardised death rate in use until 1941, is used to compare mortality trends in different years, after allowing for changes in the sex-age structure of the population. The methods of calculation and a discussion of its advantages over the former standardised rate may be found on pages 6–11 of the Medical Text Volume for 1940–45. Briefly, it represents the ratio of the adjusted death rates of the year in question to those of a base year (at present 1938), each calculated by weighting the death rates of the various sex-age groups by the arithmetic mean of the corresponding proportions of the mid-year populations living in the two years. If the death rate of a sex-age group in the year to which the index relates is denoted by M and the corresponding rate in 1938 by M^1, and if r and r^1 are the proportions of the total population falling within that group

$$\text{C.M.I.} = \Sigma\, M\,(r + r^1)/L\, M^1\,(r + r^1)$$

where Σ denotes the summation over all the sex-age groups.

The comparative mortality index can only be used to make comparisons between years for the same category of persons, for example, either males or females. It cannot be used to compare the death rates of males with those of females in any year, because the age-structure of the standard population differs for the two sexes. This comparison can, however, be made with the **adjusted ratios of male to female mortality** shown in Table 3 of Part I. These are calculated in a similar way to the C.M.I. except that age-specific death rates for the two sexes are weighted by the mean of the corresponding proportions of the mid-year populations for the year in question.

Area comparability factors (A.C.F.) enable standardised comparison to be made of death rates from all causes in different areas. They are calculated by a method of indirect standardisation (fully described on pages 30, 32 and 57 of the 1954 Commentary Volume). In 1956 the area comparability factors have been adjusted so that they also spread the deaths and the populations in chronic sick and mental and mental deficiency hospitals over all areas in the country in proportion to the non-institutional population.

Local adjusted death rates are obtained by applying area comparability factors to the local crude death rates. They can be compared with the rate for England and Wales as a whole in the same year.

The A.C.Fs. shown in Table 12 of Part I should be used only for adjusting death rates from all causes, since if it should be desired to compare local mortality rates for particular causes, a special series of area comparability factors would have to be calculated, based on mortality from those causes.

The equivalent average death rate (E.A.D.R.) used in some tables in this volume is the arithmetic mean of the rates in quinquennial groups of ages over some

convenient age range, e.g. 0–4, 5–9, up to 60–64, this being equivalent to calculating a standardised death rate at ages under 65 based on a population uniformly distributed over the 13 age-groups.

The general trend of mortality

Table XXXIX below shows for each sex the crude death rate and the comparative mortality index for all ages, from 1841 to 1956. The crude rates in 1956 were 12·5 per 1,000 for males and 10·9 per 1,000 for females. These rates were the same as in 1955, and were respectively 0·2 and 0·4 per 1,000 higher for males and females than in 1954. Whereas in the last hundred years the crude rates have fallen by 46 per cent for males and 49 per cent for females, in the last fifty years they have decreased by 24 per cent for each sex. Only small fluctuations in the crude rates have occurred since about 1930, the level of the crude rate being largely influenced by the increasing proportion of old people in the population with their naturally high mortality rates. A more satisfactory recent trend in mortality is shown by using the C.M.I., which takes into account the varying age-structure of the population. This rate showed decreases of 16 per cent for males and 24 per cent for females since the base year, 1938, and of 48 per cent and 55 per cent, respectively, over the last 50 years.

Table XXXIX.—Crude annual death rates per 1,000 living and comparative mortality indices, 1841–1950 and 1941 to 1956, England and Wales

Period	Crude death rate per 1,000 living		Comparative mortality index* (1938 base)	
	M	F	M	F
1841–1850	23·1	21·6	2·12	2·44
1851–1860	23·1	21·4	2·09	2·37
1861–1870	23·7	21·4	2·14	2·37
1871–1880	22·7	20·1	2·09	2·27
1881–1890	20·3	18·1	1·93	2·10
1891–1900	19·3	17·1	1·87	2·01
1901–1910	16·4	14·4	1·60	1·69
1911–1920	15·1	13·0	1·45	1·49
1921–1930	12·9	11·4	1·16	1·22
1931–1940	13·0	11·5	1·07	1·10
1941–1950	14·1	11·0	0·92	0·89
1941	14·0	11·8	1·10	1·04
1942	12·5	10·5	0·97	0·92
1943	12·7	11·1	0·98	0·94
1944	12·6	10·7	0·95	0·89
1945	12·3	10·7	0·92	0·88
1946	12·2	10·9	0·89	0·88
1947	12·9	11·2	0·92	0·89
1948	11·5	10·1	0·82	0·79
1949	12·3	11·1	0·86	0·85
1950	12·3	11·0	0·85	0·83
1951	13·4	11·8	0·92	0·88
1952	12·2	10·5	0·84	0·78
1953	12·2	10·7	0·84	0·78
1954	12·2	10·5	0·83	0·76
1955	12·5	10·9	0·84	0·77
1956	12·5	10·9	0·84	0·76

* Civilians only, 1914–1918 and 1939–1949.

Expectation of life

The expectation of life is the average number of years which would be lived by a group of people of given age who are continuously subject to a given mortality experience, usually that of a selected year or years.

An abridged life table, based on the total deaths in 1954 to 1956, is shown in Table XL below. The columns headed l_x show the number of persons who would survive to a given age x, and those headed $\mathring{e}_x$ show the average length of life which would be lived by persons aged x if they continued to be subject to the death rates obtaining in 1954–56. On this basis 96 per cent of males and 97 per cent of females might expect to reach the age of 15 ; 68 per cent of males and 80 per cent of females to reach age 65 and 9 per cent of men as against 21 per cent of women to reach age 85.

Table XL.—Abridged life table, 1954–56, England and Wales

Males		Age x	Females	
l_x	$\mathring{e}_x$		l_x	$\mathring{e}_x$
10,000	67·62	0	10,000	73·11
9,721	68·56	1	9,787	73·70
9,705	67·67	2	9,773	72·80
9,695	66·74	3	9,764	71·87
9,688	65·79	4	9,758	70·91
9,681	64·83	5	9,752	69·96
9,658	59·98	10	9,736	65·07
9,638	55·10	15	9,721	60·16
9,598	50·32	20	9,701	55·28
9,544	45·59	25	9,673	50·44
9,490	40·84	30	9,636	45·62
9,426	36·10	35	9,584	40·85
9,334	31·43	40	9,510	36·15
9,190	26·88	45	9,398	31·55
8,944	22·55	50	9,226	27·10
8,509	18·58	55	8,968	22·80
7,808	15·02	60	8,587	18·70
6,790	11·90	65	7,996	14·90
5,452	9·20	70	7,089	11·49
3,879	6·92	75	5,753	8·57
2,241	5·15	80	4,002	6·23
929	3·90	85	2,124	4·53

This abridged life table is constructed from the estimated home population in 1954, 1955 and 1956, and the total deaths registered in those years.

The column headed l_x shows, for each sex, the numbers who would survive to exact age x out of 10,000 born who were subject throughout their lives to the recorded age death rates of the period.

Column $\mathring{e}_x$ is the " expectation of life ", that is, the average future lifetime which would be lived by persons aged exactly x, if likewise subject to those death rates.

Table XLI (page 69) shows that in 1841 the expectation of life at birth was 40 years for males and 42 for females. Those who survived the first year of life then had expectations of 47 and 48 years, respectively. The decrease in the

infant mortality rates has been such that the expectation of life at birth and at age 1 now differ only slightly : 68 years and 73 years at birth for males and females, respectively, as against 69 years and 74 years at age 1 year. A reduction in general mortality during the last fifty years has resulted in an increased expectation of life at birth, from 49 to 68 years for males and 52 to 73 years for females.

Table XLI.—Expectation of life at birth and at age 1 year, 1838–1932 and 1943 to 1956, England and Wales

From English Life Table	Year	Expectation of life at			
		Birth		Age 1 year	
		Males	Females	Males	Females
No. 1	1841	40	42	47	48
2	1838–44	40	42	47	47
3	1838–54	40	42	47	47
4	1871–80	41	45	48	50
5	1881–90	44	47	51	53
6	1891–1900	44	48	52	55
7	1901–10	49	52	56	58
8	1910–12	52	55	58	60
9	1920–22	56	60	60	63
10	1930–32	59	63	62	65
11	1950–52	66	72	68	72
		68	73	69	74
From annual Abridged Life Tables	1943	62	67	64	69
	1944	62	68	64	70
	1945	63	69	65	71
	1946	65	69	67	71
	1947	64	69	67	71
	1948	66	71	68	72
	1949	66	71	68	72
	1950	67	71	68	72
	1951	66	71	67	72
	1952	67	72	68	73
	1953	67	72	68	73
	1954	68	73	69	74
	1955	68	73	68	74
	1956	68	73	69	74

Seasonal variation in mortality

Table XLII (page 70) shows the annual death rates per 1,000 living for each quarter from 1931, and the ratio of each to the corresponding yearly rate taken as 100. The monthly numbers of deaths from a variety of causes will be found in Table 23 of Part I. Rates in the first two quarters of 1956 were a little below, and in the second two quarters slightly above, those for 1955. In each year, except 1943, the death rates have been highest in the March quarter. Not only is there an excess of deaths from respiratory diseases, including tuberculosis, during this quarter, but, especially among older people, there is an increased

number of deaths from such conditions as ulcers of the stomach or duodenum, or arteriosclerotic heart disease. The following are a few examples from the 1956 mortality experiences :

	Males				Females			
	Quarters				Quarters			
	March	June	Sept.	Dec.	March	June	Sept.	Dec.
Respiratory tuberculosis ..	1,267	802	626	832	467	282	258	304
Influenza	1,010	98	39	124	1,103	91	30	128
*Pneumonia, lobar and broncho-	4,722	1,967	1,368	2,335	5,050	1,922	1,340	2,274
Bronchitis, acute	1,042	213	113	313	1,297	228	90	349
Bronchitis, chronic and unspecified	8,752	3,289	2,016	4,107	4,170	1,338	764	1,578
Ulcer of stomach	639	425	317	416	347	212	196	246
Ulcer of duodenum ..	637	467	423	448	177	134	109	144
Nephritis, acute, chronic, unspecified	830	661	567	596	693	535	408	554
Arteriosclerotic heart disease	13,801	11,073	10,037	12,097	8,512	6,345	5,778	7,249

* Excluding pneumonia of the newborn.

Table XLII.—Annual death rates per 1,000 living, by quarters in each year 1931 to 1956, with ratios to each yearly rate taken as 100, England and Wales

Year	Death rate per 1,000 living				Ratio to yearly rate taken as 100			
	March	June	September	December	March	June	September	December
1931	16·5	11·5	9·6	11·7	*134*	*93*	*78*	*95*
1932	15·4	11·6	9·7	11·5	*128*	*97*	*81*	*96*
1933	17·1	10·8	9·4	12·0	*139*	*88*	*76*	*98*
1934	14·6	11·8	9·6	11·2	*124*	*100*	*81*	*95*
1935	13·2	12·0	9·8	12·0	*113*	*103*	*84*	*103*
1936	15·1	11·8	9·7	12·0	*125*	*98*	*80*	*99*
1937	16·2	11·6	9·7	12·3	*131*	*94*	*78*	*99*
1938	13·6	11·6	9·9	11·5	*117*	*100*	*85*	*99*
1939	15·1	11·7	9·9	11·8	*125*	*97*	*82*	*98*
1940	20·6	11·9	10·8	14·1	*143*	*83*	*75*	*98*
1941	18·4	14·2	10·1	11·5	*136*	*105*	*75*	*85*
1942	15·8	12·0	9·8	11·6	*128*	*98*	*80*	*94*
1943	14·5	11·7	10·1	15·7	*112*	*90*	*78*	*121*
1944	15·3	12·0	11·0	12·7	*120*	*94*	*87*	*100*
1945	16·5	11·5	10·0	12·6	*131*	*91*	*79*	*100*
1946	15·4	11·2	9·7	11·9	*128*	*93*	*81*	*99*
1947	17·6	11·3	9·2	11·4	*143*	*92*	*75*	*93*
1948	12·4	10·3	9·4	11·7	*113*	*94*	*85*	*106*
1949	15·2	11·2	9·3	11·8	*129*	*95*	*79*	*100*
1950	14·0	11·1	9·3	12·3	*120*	*95*	*80*	*106*
1951	19·1	11·1	9·1	11·0	*153*	*89*	*73*	*88*
1952	13·4	10·6	8·9	12·4	*119*	*94*	*79*	*110*
1953	15·8	10·4	8·9	10·7	*139*	*91*	*78*	*94*
1954	14·0	10·6	9·3	11·4	*124*	*94*	*82*	*101*
1955	15·4	11·2	9·1	11·1	*132*	*96*	*78*	*95*
1956	15·3	10·8	9·3	11·3	*131*	*92*	*79*	*97*

Death rates by sex and age

Table XLIII (page 72) shows the trend in the average annual death rates by sex and age since 1841. In 1956 the rates in the various age-groups were lower than the average for the preceding five years, except for males aged 65–84 and females aged 85 and over. Diagram 9 (page 73) shows the striking improvement since 1901 in the rate at ages under 5 years compared with the gradual decline in the other age-groups. The 1956 rates expressed as percentages of those for 1901–05 were as follows :

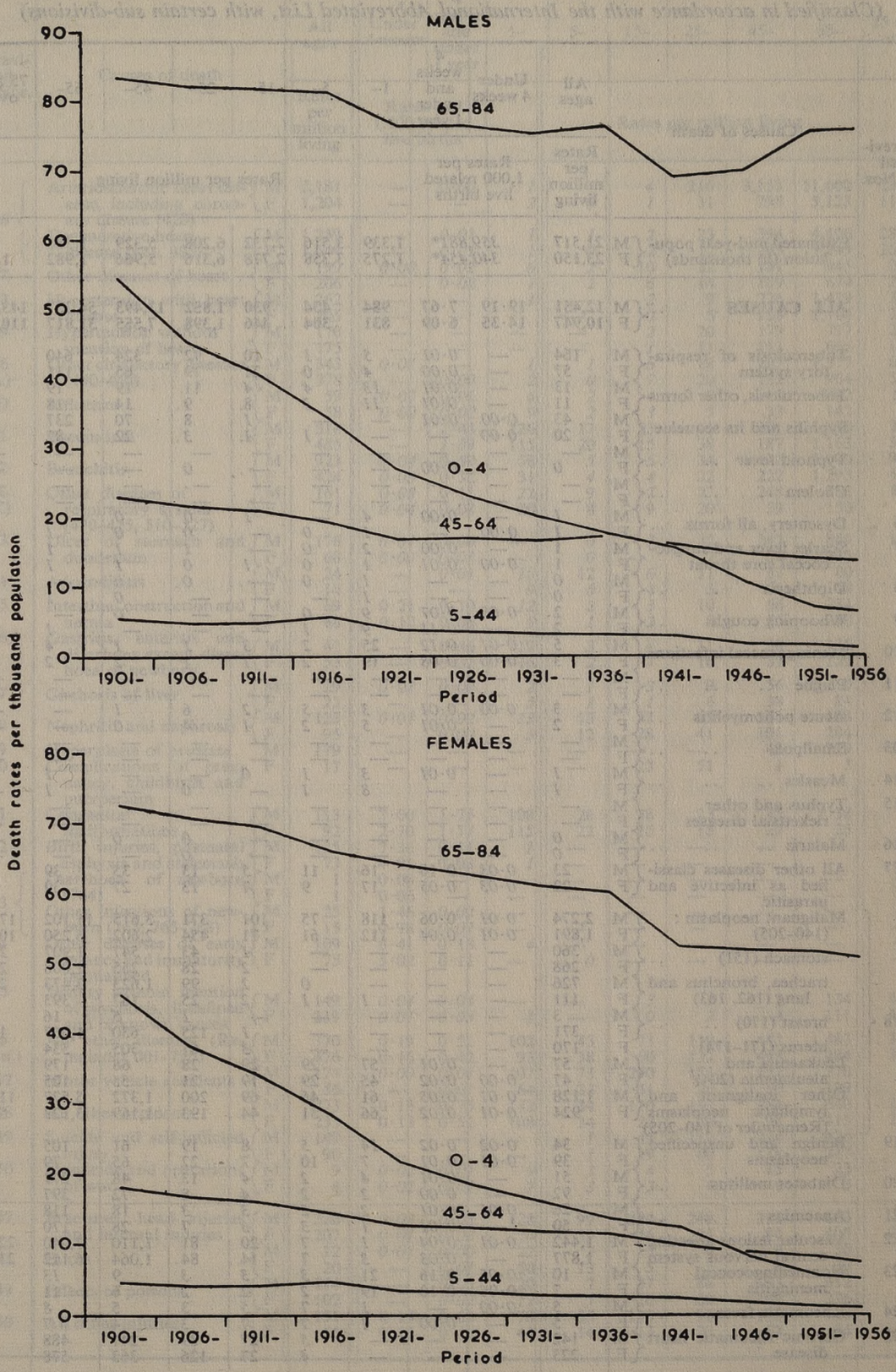
	All ages	0–	5–	15–	25–	45–	65–	85 and over
Males ..	73	12	15	25	24	59	91	93
Females	73	11	10	13	22	42	70	89

The decrease in the rates has been much greater in the younger than the older age-groups and in each age-group it has been greater among females than males.

Table XLIII.—Average annual death rates per 1,000 living, by sex and age, 1841–1956, England and Wales

	Males								Females							
	All ages	0–	5–	15–	25–	45–	65–	85 and over	All ages	0–	5–	15–	25–	45–	65–	85 and over
1841–1850 ..	23·1	71·3	7·24	8·23	11·2	23·6	89·6	312·3	21·6	61·2	7·27	8·50	11·6	21·1	82·4	293·2
1851–1860 ..	23·1	72·7	6·79	7·71	10·9	23·2	86·8	308·3	21·4	63·0	6·84	7·98	10·9	20·1	80·0	289·0
1861–1870 ..	23·7	73·5	6·43	7·26	11·5	24·8	87·7	315·0	21·4	63·7	6·25	7·30	10·7	20·6	79·8	285·0
1871–1880 ..	22·7	68·4	5·29	6·24	11·3	26·1	90·2	327·4	20·1	58·3	5·05	6·12	9·92	21·0	80·9	296·4
1881–1890 ..	20·3	61·6	4·20	4·97	9·79	25·5	89·4	306·0	18·1	51·9	4·23	4·97	8·76	20·6	78·9	271·0
1891–1900 ..	19·3	62·7	3·40	4·38	8·82	25·2	89·4	286·7	17·1	52·8	3·49	4·06	7·58	20·3	79·5	261·3
1901–1905 ..	17·1	54·7	2·93	3·77	7·59	23·0	83·4	274·6	15·0	45·8	3·03	3·34	6·34	18·1	72·5	249·4
1906–1910 ..	15·6	45·4	2·67	3·45	6·76	21·7	82·0	283·0	13·8	38·0	2·78	3·05	5·60	16·9	70·8	250·9
1911–1915 ..	15·5	40·9	2·75	3·69	6·76	21·0	81·7	281·6	13·3	34·0	2·75	3·00	5·17	16·0	69·5	245·4
1916–1920 ..	14·9	34·4	3·11	4·85	7·61	19·5	81·1	267·8	12·8	28·4	3·18	4·06	5·91	14·4	65·9	241·9
1921–1925 ..	12·9	27·0	2·10	3·06	5·24	16·9	76·2	272·7	11·4	21·8	2·05	2·83	4·26	12·8	64·0	241·2
1926–1930 ..	12·9	23·1	2·06	2·93	4·84	17·0	76·3	298·1	11·4	18·5	1·90	2·67	3·97	12·4	62·5	254·4
1931–1935 ..	12·7	20·1	1·84	2·81	4·23	16·6	75·1	278·9	11·4	16·0	1·71	2·51	3·67	11·9	61·0	245·0
1936–1940 ..	13·3	17·5	1·60	2·64	3·95	17·3	76·2	286·9	11·6	13·7	1·40	2·17	3·22	11·5	60·1	253·0
1941–1945 ..	12·8	15·5	1·44	2·99	3·72	15·7	69·0	227·0	10·9	12·3	1·13	1·98	2·84	9·86	52·6	207·0
1946–1950 ..	12·2	10·5	0·79	1·42	2·58	14·5	69·9	241·6	10·9	8·14	0·59	1·29	2·17	8·79	52·1	208·9
1951–1955 ..	12·5	6·95	0·52	1·05	2·05	13·9	75·5	265·9	10·9	5·40	0·37	0·60	1·60	8·02	51·9	222·0
1956 ..	12·5	6·49	0·43	0·93	1·85	13·5	75·8	256·2	10·9	4·98	0·30	0·45	1·40	7·55	51·0	222·7

Diagram 9



All causes : Death rates per thousand living by sex and age, 1901–1956, England and Wales

Table XLIV.—Death rates by sex from certain causes at different periods of life, 1956, England and Wales

(Classified in accordance with the International Abbreviated List, with certain sub-divisions)

Abbreviated List Nos.	Causes of death		All ages	Under 4 weeks	4 weeks and under 1 year	1–	5–	15–	25–	45–	65–	75 and over
			Rates per million living	Rates per 1,000 related live births		Rates per million living						
	Estimated mid-year population (in thousands)	M	21,517	*359,881**		1,339	3,516	2,732	6,208	5,329	1,386	659
		F	23,150	*340,454**		1,275	3,358	2,778	6,316	5,966	1,982	1,146
	ALL CAUSES	M	**12,451**	**19·19**	**7·67**	**984**	**434**	**930**	**1,852**	**13,493**	**54,237**	**143,129**
		F	**10,947**	**14·35**	**6·09**	**831**	**304**	**446**	**1,398**	**7,555**	**31,817**	**110,138**
B1	Tuberculosis of respiratory system	M	164	—	*0·01*	*5*	*1*	10	92	324	640	463
		F	57	—	*0·00*	*4*	*0*	21	79	65	111	125
B2	Tuberculosis, other forms	M	13	—	*0·01*	*13*	*4*	*4*	11	19	19	38
		F	11	—	*0·01*	*11*	*3*	8	9	14	18	25
B3	Syphilis and its sequelae	M	43	*0·00*	*0·01*	—	—	*1*	8	70	237	258
		F	20	*0·00*	—	—	*1*	*1*	*3*	22	82	118
B4	Typhoid fever	M	—	—	—	—	—	—	—	—	—	—
		F	*0*	—	*0·00*	—	—	—	*0*	—	—	—
B5	Cholera	M	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—
B6	Dysentery, all forms ..	M	*1*	—	*0·00*	*4*	—	*1*	*0*	*0*	*1*	*6*
		F	*1*	*0·00*	—	*1*	*0*	—	*0*	*0*	*1*	*8*
B7	Scarlet fever and streptococcal sore throat	M	1	—	*0·00*	*2*	*0*	—	*1*	*1*	*1*	*5*
		F	1	*0·00*	*0·01*	*1*	*0*	*1*	*0*	*1*	*1*	*3*
B8	Diphtheria	M	*0*	—	—	*1*	*0*	—	*0*	*0*	—	*2*
		F	*0*	—	—	*1*	—	—	—	*0*	*1*	—
B9	Whooping cough ..	M	2	*0·00*	*0·07*	*9*	*0*	—	—	*0*	—	*3*
		F	2	—	*0·11*	*9*	*1*	—	—	—	*1*	*1*
B10	Meningococcal infections	M	5	*0·01*	*0·12*	25	*2*	*3*	*1*	*1*	*4*	*2*
		F	3	*0·00*	*0·08*	19	*2*	*1*	*1*	*2*	*2*	*2*
B11	Plague	M	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—
B12	Acute poliomyelitis ..	M	3	*0·00*	*0·01*	*3*	*5*	*2*	6	*1*	—	—
		F	2	—	*0·01*	*5*	*2*	*1*	4	*0*	—	—
B13	Smallpox	M	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—
B14	Measles	M	*1*	—	*0·01*	*3*	*1*	*0*	—	—	*1*	*2*
		F	*1*	—	—	*8*	*1*	—	*0*	—	*1*	—
B15	Typhus and other rickettsial diseases	M	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—
B16	Malaria	M	*0*	—	—	—	—	—	*0*	*0*	—	—
		F	*0*	—	—	—	—	—	*0*	—	—	—
B17	All other diseases classified as infective and parasitic	M	23	*0·03*	0·10	16	11	*5*	13	35	39	86
		F	22	*0·03*	*0·05*	17	9	7	13	27	39	75
B18	Malignant neoplasm: (140–205)	M	2,274	*0·01*	0·06	118	75	101	371	3,615	11,102	17,093
		F	1,891	*0·01*	*0·04*	112	61	71	454	2,602	6,250	10,853
	stomach (151) ..	M	360	—	—	—	—	*1*	43	547	1,907	2,910
		F	268	—	—	—	—	*2*	28	255	1,008	2,183
	trachea, bronchus and lung (162, 163)	M	726	—	—	—	*0*	*2*	99	1,623	3,473	2,329
		F	111	—	—	*1*	*1*	*2*	25	187	393	442
	breast (170)	M	3	—	—	—	—	—	*1*	5	16	*21*
		F	371	—	—	—	—	*1*	125	630	1,067	1,668
	uterus (171–174) ..	F	170	—	—	—	—	*3*	61	305	534	586
	Leukaemia and aleukaemia (204)	M	57	—	*0·01*	57	29	29	28	68	179	281
		F	47	*0·00*	*0·02*	45	29	19	21	55	125	142
	Other malignant and lymphatic neoplasms (Remainder of 140–205)	M	1,128	*0·01*	*0·05*	61	46	69	200	1,372	5,527	11,551
		F	924	*0·01*	*0·02*	66	31	44	193	1,169	3,123	5,831
B19	Benign and unspecified neoplasms	M	34	*0·02*	*0·02*	*14*	*5*	8	19	61	105	117
		F	39	*0·01*	*0·01*	*7*	10	*7*	22	65	79	130
B20	Diabetes mellitus ..	M	51	—	*0·01*	*4*	*2*	*4*	13	48	271	561
		F	92	—	*0·00*	*2*	*2*	*4*	8	72	397	742
B21	Anaemias	M	26	*0·01*	*0·01*	*2*	*2*	*3*	*3*	18	118	404
		F	50	—	*0·01*	*1*	*3*	*3*	7	28	170	520
B22	Vascular lesions affecting central nervous system	M	1,442	*0·01*	*0·04*	*1*	7	20	81	1,110	7,040	22,392
		F	1,877	—	*0·03*	*3*	7	14	84	1,064	6,112	21,276
B23	Nonmeningococcal meningitis	M	10	*0·05*	0·16	21	*3*	*3*	*3*	9	*13*	*18*
		F	7	0·06	0·10	19	*2*	*2*	*2*	6	11	*14*
B24	Rheumatic fever ..	M	5	*0·00*	—	*1*	7	*5*	3	5	*8*	*5*
		F	5	—	*0·00*	*1*	7	7	3	4	*7*	*4*
B25	Chronic rheumatic heart disease	M	142	—	—	—	*5*	27	89	241	488	677
		F	223	—	—	—	*4*	27	126	363	578	844

* Live birth occurrences.

Table XLIV—*continued.*

Abbreviated List Nos.	Causes of death		All ages	Under 4 weeks	4 weeks and under 1 year	1–	5–	15–	25–	45–	65–	75 and over
			Rates per million living	Rates per 1,000 related live births		Rates per million living						
B26	Arteriosclerotic heart disease, including coronary disease (420)	M	2,181	—	*0·00*	*1*	—	*4*	216	3,153	11,600	19,259
		F	1,204	—	—	*2*	*0*	*1*	31	795	5,123	11,149
	Degenerative heart disease (421, 422)	M	1,259	—	*0·01*	*1*	*1*	*2*	23	394	4,426	28,376
		F	1,644	—	*0·01*	*1*	*0*	*2*	12	265	3,249	26,141
B27	Other diseases of heart ..	M	199	*0·00*	*0·02*	*6*	*2*	10	22	181	945	2,751
		F	206	—	*0·02*	*1*	*2*	*6*	14	109	674	2,318
B28	Hypertension with heart disease	M	262	—	—	*1*	—	*2*	9	226	1,429	3,627
		F	305	—	—	—	—	*0*	5	158	1,164	3,289
B29	Hypertension without mention of heart	M	170	—	—	—	—	*2*	20	179	797	2,231
		F	175	—	—	—	—	*1*	11	113	605	1,837
B46 (Pt.)	Other circulatory diseases (450–468)	M	343	*0·01*	—	*1*	*1*	*6*	18	187	1,377	6,568
		F	378	—	*0·00*	*2*	*0*	*7*	20	132	964	5,151
B30	Influenza	M	59	*0·01*	0·06	*6*	*2*	*4*	8	60	242	781
		F	58	*0·00*	*0·02*	*9*	*2*	*3*	5	33	142	709
B31	Pneumonia	M	518	—	2·44	126	17	23	45	371	1,980	7,557
		F	485	—	*1·83*	115	20	15	38	187	1,163	5,839
B32	Bronchitis	M	923	*0·04*	0·50	58	*5*	*5*	34	1,112	5,040	9,754
		F	424	*0·03*	0·32	31	*4*	*4*	22	222	1,293	4,889
B46 (Pt.)	Other diseases of respiratory system (470–475, 510–527)	M	161	*0·03*	0·11	22	9	*7*	27	248	782	1,161
		F	71	*0·04*	0·08	20	8	9	20	59	150	658
B33	Ulcer of stomach and duodenum	M	176	*0·01*	*0·00*	—	*0*	*3*	32	242	869	1,627
		F	68	*0·00*	*0·01*	—	*0*	—	7	50	235	655
B34	Appendicitis	M	24	—	*0·01*	*10*	12	*6*	11	31	80	159
		F	14	—	—	*9*	*6*	*4*	3	14	44	86
B35	Intestinal obstruction and hernia	M	69	0·21	0·10	*12*	*2*	*3*	10	66	284	812
		F	68	0·18	0·06	*9*	*1*	*2*	8	50	238	580
B36	Gastritis, enteritis and diarrhoea except diarrhoea of newborn	M	41	—	0·46	19	*3*	*4*	11	38	135	320
		F	53	—	0·32	16	*2*	7	16	37	155	387
B37	Cirrhosis of liver ..	M	29	*0·01*	*0·00*	*2*	*1*	*3*	9	56	115	126
		F	23	—	—	*5*	*1*	*1*	6	38	84	79
B38	Nephritis and nephrosis	M	123	*0·01*	*0·02*	*13*	15	37	63	164	408	968
		F	95	—	*0·02*	*5*	12	28	41	101	284	561
B39	Hyperplasia of prostate	M	179	—	—	—	—	—	—	43	729	3,967
B40	Complications of pregnancy, childbirth and puerperium	F	17	—	—	—	—	23	51	*1*	*1*	*2*
B41	Congenital malformations	M	113	3·00	1·75	108	28	28	23	35	38	59
		F	92	2·70	1·77	115	22	15	18	27	25	29
B42	Birth injuries, postnatal asphyxia and atelectasis	M	125	7·36	0·11	*1*	—	—	—	—	—	—
		F	73	4·91	0·08	*1*	—	—	—	—	—	—
B43	Diarrhoea of newborn (764)	M	1	0·08	—	—	—	—	—	—	—	—
		F	1	0·06	—	—	—	—	—	—	—	—
	Other infections of newborn (763, 765–768)	M	25	1·46	*0·02*	—	—	—	—	—	—	—
		F	15	0·98	*0·01*	—	—	—	—	—	—	—
B44	Other diseases of early infancy and immaturity unqualified	M	109	6·41	0·13	*4*	—	—	—	—	—	—
		F	75	5·02	0·11	—	*0*	—	—	—	—	—
B45	Senility without mention of psychosis, ill-defined and unknown causes	M	149	*0·04*	*0·04*	—	—	*3*	*2*	7	134	4,451
		F	239	*0·01*	*0·03*	*1*	—	*0*	*2*	4	111	4,594
B46 (Rem.)	All other diseases (Remainder 001–795)	M	370	0·19	0·52	102	43	73	119	442	1,483	3,126
		F	476	0·16	0·42	93	38	60	132	495	484	3,202
BE47	Motor vehicle accidents	M	174	*0·00*	*0·01*	107	75	290	151	157	270	587
		F	56	—	*0·01*	64	33	41	26	50	129	236
BE48	All other accidents ..	M	273	0·15	0·73	132	84	170	167	254	540	2,234
		F	233	0·13	0·51	108	34	22	30	98	415	2,859
BE49	Suicide and self-inflicted injury	M	149	—	—	—	*1*	45	112	274	426	490
		F	90	—	—	—	*1*	19	60	178	217	141
BE50	Homicide and operations of war	M	9	*0·02*	*0·01*	*9*	*3*	*4*	5	15	23	*9*
		F	4	*0·01*	*0·01*	*7*	*3*	*2*	4	4	*3*	*5*
BN47	Fractures, head injuries and internal injuries	M	326	*0·03*	*0·03*	128	99	354	249	311	603	2,223
		F	207	*0·01*	*0·03*	74	39	46	35	84	405	2,531
BN48	Burns	M	12	*0·01*	*0·00*	22	*2*	*5*	6	9	30	126
		F	20	—	*0·01*	50	13	*5*	3	8	39	167
BN49	Effects of poisons ..	M	114	—	*0·03*	20	7	37	84	193	312	484
		F	102	—	*0·02*	*12*	*5*	20	60	169	236	358
BN50	All other injuries ..	M	151	0·14	0·68	78	55	113	96	188	314	487
		F	55	0·13	0·48	44	14	13	23	67	84	187

Causes of death at different ages

Table XLIV (page 74) shows the death rates per million living from selected causes at different ages. Causes of death at ages under one year are discussed in the Infant Mortality chapter (pages 84–103).

At ages 1–4 the chief causes of death were pneumonia, congenital malformations, motor vehicle and other accidents and malignant neoplasms, including leukaemia. The rates for leukaemia during the last five years have been :

	1952	1953	1954	1955	1956
Males ..	65	61	56	44	57
Females ..	46	51	36	58	45

The reversal which was noticed in the sex-ratio in 1955 has not persisted in 1956.

At ages 5–14 the main causes of death were motor vehicle and other accidents and malignant neoplasms, including leukaemia.

At ages 15–24 malignant neoplasms and motor vehicle accidents were the chief causes of death for both sexes. Non-motor vehicle accident was also an important cause for males, but the rate for females from this cause was exceeded by those for nephritis and nephrosis and for chronic rheumatic heart disease.

At ages 25–44 malignant neoplasms, which had by far the highest rates, and suicide were among the five principal causes for both sexes. The remaining ones were arteriosclerotic heart disease and motor vehicle and other accidents for males ; chronic rheumatic heart disease, vascular lesions of the central nervous system and respiratory tuberculosis for females.

At ages 45 and over malignant neoplasms, vascular lesions of the central nervous system and arteriosclerotic heart disease were the leading causes of death for both sexes ; for men the death rates from bronchitis were also high.

Death rates by sex and age in different parts of England and Wales

Table XLV (page 78) gives the death rates per 1,000 living by sex and age in standard regions and urban and rural aggregates within regional groups for 1956.

Among the conurbations, the crude death rates were highest for both males and females in the West Yorkshire conurbation : 14·2 and 12·1 respectively. The highest crude death rates in the regional groups were 14·1 for males in Wales II and 12·7 for females in London and South Eastern (excluding Greater London). When adjustments are made for differences in the sex-age distribution among local areas, the South East Lancashire conurbation had a rate 23 per cent above the national average compared with rates of 5 per cent above the average in the West Midlands conurbation and 4 per cent below the average in Greater London. Among the regions, the Eastern and London and South Eastern (excluding Greater London) had the most favourable rates, each 9 per cent below the national level.

Percentage of deaths by cause in which a post-mortem was performed or there was record of an operation

Table XLVI (page 80) shows the number of deaths in which a post-mortem was performed or there was a record of an operation being performed, classified by sex, age and cause of death, and expressed as a percentage of all deaths from the same cause in the corresponding sex-age group. The table therefore gives some indication of the extent to which any cause of death may be said to have been confirmed. For all causes of death 22 per cent had one of these procedures mentioned on the death certificate, 26 per cent for males compared with 19 per cent for females.

The highest percentages of certificates mentioning either an operation or a post-mortem occurred in deaths from maternal causes, 73 ; meningococcal infections, 69 ; ulcer of stomach and duodenum, 61 ; accidental and violent deaths, 57.

Table XLV.—All causes : Death rates per 1,000 living, by sex and age, in standard regions and urban and rural aggregates within regional groups, 1956, England and Wales

	Males						Females					
	All ages	0–	5–	15–	45–	65 and over	All ages	0–	5–	15–	45–	65 and over
ENGLAND AND WALES	**12·5**	**6·49**	**0·43**	**1·57**	**13·5**	**82·9**	**10·9**	**4·98**	**0·30**	**1·11**	**7·55**	**60·5**
Urban and rural aggregates :												
Conurbations	12·3	6·37	0·41	1·58	14·3	85·5	10·6	4·86	0·29	1·10	7·57	60·5
Areas outside conurbations :												
Urban areas with populations of 100,000 and over	12·7	6·58	0·43	1·52	14·5	86·1	10·9	4·74	0·26	1·15	7·68	61·4
Urban areas with populations of 50,000 and under 100,000	12·7	6·89	0·41	1·62	13·3	82·6	11·4	5·55	0·29	1·10	7·39	59·9
Urban areas with populations under 50,000	13·0	6·82	0·45	1·60	13·2	82·0	11·4	5·25	0·34	1·11	7·58	60·0
Rural districts	11·8	6·12	0·48	1·53	11·6	77·9	11·1	4·82	0·32	1·09	7·46	61·0
NORTH OF ENGLAND												
Regions :												
Northern	12·6	7·08	0·38	1·77	14·5	84·9	10·5	5·77	0·33	1·24	8·25	63·7
East and West Ridings	13·1	7·48	0·48	1·71	14·3	86·3	11·0	5·41	0·29	1·23	7·93	62·8
North Western	13·6	7·41	0·46	1·74	15·7	88·8	11·8	5·82	0·34	1·24	8·58	65·3
Total	13·2	7·35	0·45	1·74	15·0	87·1	11·3	5·69	0·32	1·24	8·31	64·2
Conurbations :												
Tyneside	12·6	6·33	0·34	1·63	15·2	85·6	10·3	5·24	*0·27*	1·33	8·21	63·7
West Yorkshire	14·2	7·21	0·44	1·86	15·4	91·5	12·1	5·13	0·28	1·26	8·33	64·5
South East Lancashire	13·7	7·84	0·51	1·76	16·2	89·8	12·0	5·61	0·35	1·21	9·04	65·9
Merseyside	12·2	7·15	0·34	1·63	16·1	90·6	10·3	6·02	0·29	1·20	7·98	63·1
Total	13·4	7·30	0·43	1·74	15·8	89·9	11·4	5·54	0·31	1·23	8·52	64·7
Areas outside conurbations :												
Urban areas with populations of 100,000 and over	13·3	7·26	0·41	1·69	15·6	87·9	10·8	5·44	0·32	1·24	7·83	62·4
Urban areas with populations of 50,000 and under 100,000	13·6	8·27	0·43	1·86	14·5	88·6	11·6	6·78	0·34	1·21	8·10	65·0
Urban areas with populations under 50,000	13·6	7·35	0·50	1·75	14·7	85·9	11·5	5·87	0·36	1·27	8·38	64·5
Rural districts	11·7	7·04	0·47	1·70	12·4	79·5	10·8	5·52	0·32	1·20	8·07	63·5
MIDLANDS AND EASTERN												
Regions :												
North Midland	11·7	6·64	0·40	1·44	12·1	79·3	10·3	4·87	0·25	1·09	7·27	60·5
Midland	11·4	6·86	0·42	1·62	13·7	82·3	9·86	5·18	0·32	1·08	7·78	60·2
Eastern	11·7	5·50	0·45	1·50	11·1	76·8	10·8	4·42	0·30	0·98	6·61	57·9
Total	11·6	6·39	0·42	1·53	12·4	79·6	10·3	4·86	0·29	1·06	7·27	59·5
Conurbation :												
West Midlands	11·5	6·82	0·35	1·69	14·6	84·6	9·49	4·95	0·30	1·08	7·72	59·9
Areas outside conurbation :												
Urban areas with populations of 100,000 and over	11·9	5·99	0·49	1·42	13·6	84·7	10·4	4·58	0·22	1·07	7·52	60·5
Urban areas with populations of 50,000 and under 100,000	11·1	6·49	0·40	1·60	12·3	77·9	9·79	5·28	0·30	1·05	6·94	57·9
Urban areas with populations under 50,000	12·0	6·82	0·38	1·53	11·9	78·3	10·6	5·16	0·28	1·01	7·00	58·3
Rural districts	11·2	5·88	0·50	1·46	10·7	75·8	10·7	4·54	0·34	1·07	7·15	60·9
GREATER LONDON	11·8	5·41	0·41	1·44	13·1	82·4	10·2	4·22	0·27	1·00	6·81	57·5
SOUTH OF ENGLAND												
Regions :												
London and South Eastern (excluding Greater London)	13·7	5·97	0·42	1·50	12·2	80·0	12·7	4·39	0·41	0·97	6·97	58·2
Southern	11·5	5·81	0·38	1·26	11·9	79·0	11·0	4·34	0·23	0·95	6·81	57·3
South Western	12·9	5·54	0·52	1·56	12·9	81·9	12·1	4·22	0·28	1·09	7·47	60·5
Total	12·7	5·76	0·44	1·43	12·4	80·4	12·0	4·31	0·30	1·01	7·10	58·7
Urban areas with populations of 100,000 and over	13·1	6·30	0·40	1·45	14·3	85·0	11·9	3·75	0·25	1·08	7·47	60·5
Urban areas with populations of 50,000 and under 100,000	13·3	5·85	0·41	1·39	12·9	82·0	12·9	4·47	*0·22*	1·02	7·09	57·6
Urban areas with populations under 50,000	13·1	5·71	0·43	1·47	12·4	79·8	12·1	4·49	0·37	1·03	7·01	57·4
Rural districts	11·9	5·51	0·48	1·41	11·3	77·7	11·5	4·36	0·30	0·94	7·02	59·8
WALES (including Monmouthshire)												
Wales I (South East)	13·6	7·79	0·45	1·73	14·9	87·4	10·8	6·04	0·31	1·36	8·79	64·3
Wales II (Remainder)	14·1	7·25	0·47	1·78	14·2	83·4	12·3	5·50	0·41	1·24	8·32	59·7
Urban areas with populations of 100,000 and over	13·1	7·19	*0·35*	1·59	15·4	88·3	10·7	5·58	*0·23*	1·32	8·34	64·3
Urban area with population of 50,000 and under 100,000	13·6	*7·50*	*0·21*	*1·65*	15·2	73·0	11·1	*6·52*	*0·22*	1·67	8·41	65·0
Urban areas with populations under 50,000	14·1	8·23	0·59	1·73	14·8	87·7	11·3	5·86	0·39	1·22	8·62	62·8
Rural districts	13·6	7·29	0·37	1·89	14·0	84·2	11·5	6·07	0·35	1·49	8·91	61·3

Table XLVI.—Deaths from certain causes (*a*) by sex and age; (*b*) distinguishing deaths in which a post-mortem was performed or there was a record of operation and (*c*) the percentage to all deaths, 1956, England and Wales

		Males					Females					Persons
		All ages	0–	15–	45–	65 and over	All ages	0–	15–	45–	65 and over	All ages
All causes	(*a*)	267,904	12,471	14,036	71,903	169,494	253,427	9,005	10,071	45,071	189,280	521,331
	(*b*)	69,031	6,194	6,919	24,841	31,077	47,926	4,124	4,182	13,175	26,445	116,957
	(*c*)	26	50	49	35	18	19	46	42	29	14	22
Tuberculosis, respiratory (001–008)	(*a*)	3,534	16	599	1,727	1,192	1,319	7	559	390	363	4,853
	(*b*)	1,043	11	175	518	339	313	5	129	94	85	1,356
	(*c*)	30	69	29	30	28	24	71	23	24	23	28
Tuberculosis, other (010–019)	(*a*)	270	38	82	99	51	252	28	79	81	64	522
	(*b*)	143	16	45	52	30	119	13	39	36	31	262
	(*c*)	53	42	55	53	59	47	46	49	44	48	50
Syphilitic disease (020–029)	(*a*)	922	2	51	371	498	452	3	22	130	297	1,374
	(*b*)	444	2	31	172	239	230	1	9	57	163	674
	(*c*)	48	100	61	46	48	51	33	41	44	55	49
Diphtheria (055)	(*a*)	5	2	1	1	1	3	1	—	1	1	8
	(*b*)	2	2	—	—	—	1	1	—	—	—	3
	(*c*)	40	100	—	—	—	33	100	—	—	—	38
Whooping cough (056)	(*a*)	42	39	—	1	2	53	51	—	—	2	95
	(*b*)	6	6	—	—	—	20	20	—	—	—	26
	(*c*)	14	15	—	—	—	38	39	—	—	—	27
Meningococcal infections (057)	(*a*)	109	85	11	7	6	80	56	8	11	5	189
	(*b*)	71	59	6	4	2	60	40	6	9	5	131
	(*c*)	65	69	55	57	33	75	71	75	82	100	69
Acute poliomyelitis (080)	(*a*)	68	23	42	3	—	46	16	29	1	—	114
	(*b*)	30	14	14	2	—	15	6	9	—	—	45
	(*c*)	44	61	33	67	—	33	38	31	—	—	39
Measles (085)	(*a*)	15	12	1	—	2	15	13	1	—	1	30
	(*b*)	3	3	—	—	—	8	7	—	—	1	11
	(*c*)	20	25	—	—	—	53	54	—	—	100	37
Other infective, etc., diseases (030–054, 058–074, 081–084, 086–138)	(*a*)	543	118	106	198	121	547	88	111	170	178	1,090
	(*b*)	271	77	57	98	39	246	57	52	76	61	517
	(*c*)	50	65	54	49	52	45	65	47	45	34	47
Malignant neoplasm: Stomach (151)	(*a*)	7,747	—	271	2,915	4,561	6,206	—	186	1,520	4,500	13,953
	(*b*)	1,482	—	64	662	756	908	—	37	286	585	2,390
	(*c*)	19	—	24	23	17	15	—	20	19	13	17
Lung, bronchus (162,163)	(*a*)	15,615	1	619	8,647	6,348	2,571	3	164	1,118	1,286	18,186
	(*b*)	3,116	—	143	1,180	1,213	581	1	40	275	265	3,747
	(*c*)	20	—	23	21	19	23	33	24	25	21	21
Breast (170)	(*a*)	69	—	4	29	36	8,580	—	793	3,761	4,026	8,649
	(*b*)	14	—	1	5	8	1,783	—	224	887	672	1,797
	(*c*)	20	—	25	17	22	21	—	28	24	17	21
Uterus (171–174)	(*a*)	—	—	—	—	—	3,946	—	393	1,822	1,731	3,946
	(*b*)	—	—	—	—	—	636	—	77	301	258	636
	(*c*)	—	—	—	—	—	16	—	20	17	15	16
Other malignant and lymphatic neoplasms (140–150, 152–161, 164, 165, 175–203, 205)	(*a*)	24,275	264	1,428	7,319	15,273	21,386	199	1,340	6,975	12,872	45,661
	(*b*)	5,684	80	401	2,006	3,197	4,541	62	350	1,675	2,454	10,225
	(*c*)	23	30	28	27	21	21	31	26	24	19	22
Leukaemia, aleukaemia (204)	(*a*)	1,229	181	254	361	433	1,086	164	186	326	410	2,315
	(*b*)	325	41	79	115	90	270	38	53	79	100	595
	(*c*)	26	23	31	32	21	25	23	28	24	24	26
Diabetes (260)	(*a*)	1,108	14	93	255	746	2,134	10	61	427	1,636	3,242
	(*b*)	248	6	47	83	112	397	8	35	122	232	645
	(*c*)	22	43	51	33	15	19	80	57	29	14	20
Vascular lesions of nervous system (330–334)	(*a*)	31,034	45	559	5,917	24,513	43,453	37	571	6,350	36,495	74,487
	(*b*)	3,399	37	313	1,486	1,563	4,081	22	310	1,415	2,334	7,480
	(*c*)	11	82	56	25	6	9	59	54	22	6	10
Coronary disease, angina (420)	(*a*)	46,921	2	1,350	16,800	28,769	27,869	3	196	4,740	22,930	74,790
	(*b*)	16,622	1	912	7,312	8,397	7,243	3	109	1,524	5,607	23,865
	(*c*)	35	50	68	44	29	26	100	56	32	24	32
Hypertension with heart disease (440–443)	(*a*)	5,639	1	61	1,206	4,371	7,051	—	33	942	6,076	12,690
	(*b*)	886	1	36	315	534	733	—	15	187	531	1,619
	(*c*)	16	100	59	26	12	10	—	45	20	9	13

Table XLVI—*continued.*

		Males					Females					Persons
		All ages	0–	15–	45–	65 and over	All ages	0–	15–	45–	65 and over	All ages
Other heart disease (410–416, 421–434)	(*a*)	34,404	44	936	4,344	29,080	47,987	31	1,055	4,397	42,504	82,391
	(*b*)	3,172	29	385	1,090	1,668	3,350	15	376	964	1,995	6,522
	(*c*)	9	66	41	25	6	7	48	36	22	5	8
Other circulatory disease (444–468)	(*a*)	11,031	8	262	1,949	8,812	12,797	4	215	1,461	11,117	23,828
	(*b*)	2,782	6	152	895	1,729	3,067	3	105	650	2,309	5,849
	(*c*)	25	75	58	46	20	24	75	49	44	21	25
Influenza (480–483)	(*a*)	1,272	40	60	322	850	1,354	25	36	198	1,095	2,626
	(*b*)	124	14	36	54	20	83	9	14	38	22	207
	(*c*)	10	35	60	17	2	6	36	39	19	2	8
Pneumonia (490–493, 763)	(*a*)	11,646	1,605	341	1,976	7,724	11,531	1,138	281	1,114	8,998	23,177
	(*b*)	3,683	1,036	171	850	1,626	2,598	700	135	420	1,343	6,281
	(*c*)	32	65	50	43	21	23	62	48	38	15	27
Bronchitis (500–502)	(*a*)	19,852	289	225	5,925	13,413	9,818	173	152	1,327	8,166	29,670
	(*b*)	2,875	207	79	1,171	1,418	1,183	114	51	269	749	4,058
	(*c*)	14	72	35	20	11	12	66	34	20	9	14
Other diseases of respiratory system (470–475, 510–527)	(*a*)	3,464	108	186	1,321	1,849	1,648	94	150	353	1,051	5,112
	(*b*)	1,502	83	89	624	706	444	70	67	119	188	1,946
	(*c*)	43	77	48	47	38	27	74	45	34	18	38
Ulcer of stomach and duodenum (540, 541)	(*a*)	3,778	5	206	1,290	2,277	1,564	4	45	299	1,216	5,342
	(*b*)	2,365	5	162	924	1,274	886	4	30	218	634	3,251
	(*c*)	63	100	79	72	56	57	100	67	73	52	61
Gastritis, enteritis and diarrhoea (543, 571, 572, 764)	(*a*)	910	228	82	202	398	1,249	158	120	219	752	2,159
	(*b*)	463	113	49	128	173	557	76	49	127	305	1,020
	(*c*)	51	50	60	63	43	45	48	41	58	41	47
Nephritis and nephrosis (590–594)	(*a*)	2,651	78	495	875	1,203	2,195	51	335	604	1,205	4,846
	(*b*)	602	30	147	237	188	481	21	109	149	202	1,083
	(*c*)	23	38	30	27	16	22	41	33	25	17	22
Hyperplasia of prostate (610)	(*a*)	3,852	—	—	228	3,624	—	—	—	—	—	3,852
	(*b*)	1,667	—	—	161	1,506	—	—	—	—	—	1,667
	(*c*)	43	—	—	71	42	—	—	—	—	—	43
Pregnancy, childbirth, abortion (640–689)	(*a*)	—	—	—	—	—	399	—	389	8	4	399
	(*b*)	—	—	—	—	—	293	—	290	2	1	293
	(*c*)	—	—	—	—	—	73	—	75	25	25	73
Congenital malformations (750–759)	(*a*)	2,442	1,943	220	188	91	2,133	1,733	157	161	82	4,575
	(*b*)	1,295	996	131	105	63	933	738	76	75	44	2,228
	(*c*)	53	51	60	56	69	44	43	48	47	54	49
Other defined and ill-defined diseases (210–254, 270–326, 340–402, 530–539, 542, 544–570, 573–587, 600–609, 611–637, 690–749, 760–762, 765–795)	(*a*)	20,465	6,045	1,399	3,704	9,317	24,825	4,222	1,412	4,203	14,988	45,290
	(*b*)	6,913	2,553	693	1,623	2,044	7,098	1,685	722	1,794	2,897	14,011
	(*c*)	34	42	50	44	22	29	40	51	43	19	31
Motor vehicle accidents (E810–835)	(*a*)	3,739	407	1,732	839	761	1,297	195	280	296	526	5,036
	(*b*)	2,217	189	1,014	541	473	752	73	150	196	333	2,969
	(*c*)	59	46	59	64	62	58	37	54	66	63	59
All other accidents (E800–802, 840–962)	(*a*)	5,865	790	1,500	1,354	2,221	5,404	471	250	585	4,098	11,269
	(*b*)	3,482	544	909	911	1,118	2,582	308	193	432	1,649	6,064
	(*c*)	59	69	61	67	50	48	65	77	74	40	54
Suicide (E963, 970–979)	(*a*)	3,198	3	821	1,461	913	2,084	2	430	1,059	593	5,282
	(*b*)	1,919	3	542	842	532	1,351	1	290	681	379	3,270
	(*c*)	60	100	66	58	58	65	50	67	64	64	62
Homicide and operations of war (E964, 965, 980–999)	(*a*)	190	35	39	78	38	93	25	34	22	12	283
	(*b*)	131	30	36	45	20	83	23	31	18	11	214
	(*c*)	69	86	92	58	53	89	92	91	82	92	76

(72569)

INFANT MORTALITY

In 1956 there occurred 716,740 births in England and Wales ; 700,335 were live births and 16,405 were stillbirths. The number of infants who died under one year was 16,554, and of these 11,779 lived less than four weeks. The infant mortality rate was 23·75, the neonatal rate 16·84, per thousand related live births, and the stillbirth rate 22·89 per thousand total births.

The infant mortality rate in 1956 was one of the lowest in the world, in Europe exceeding only those in Sweden and the Netherlands, and elsewhere those in New Zealand (excluding Maoris) and the European population of Nyasaland and the Rhodesias. Since 1951 the infant mortality rate has declined by 20 per cent but the neonatal rate by only 11 per cent. This experience of a proportionately greater fall in infant than neonatal mortality is shared by most countries which publish both rates, as is shown in the following table which gives for 1951 and 1956 the infant mortality and neonatal mortality rates per thousand live births in fifteen countries and the percentage decrease in mortality over the five years in each. The final column shows, as a percentage, the proportion of infant mortality that occurred in the neonatal period. It is noticeable that where infant mortality is low the proportion due to neonatal mortality is generally high.

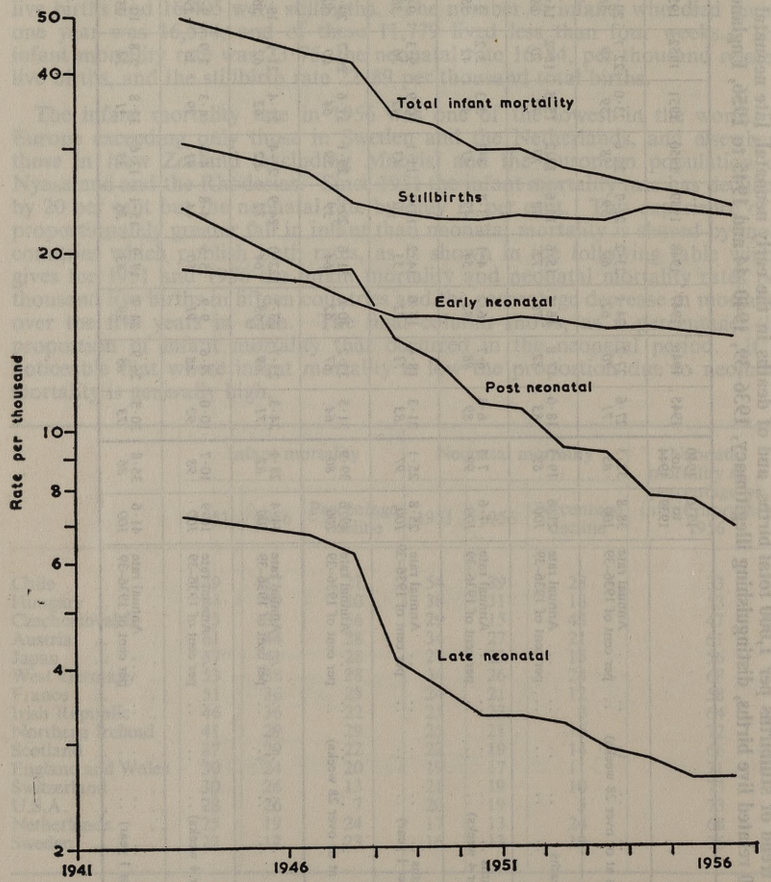
	Infant mortality			Neonatal mortality			Neonatal mortality as a percentage of infant mortality 1956
	1951	1956	Percentage decline	1951	1956	Percentage decline	
Chile	149	117	21	54	39	28	33
Hungary	84	59	30	38	31	18	53
Czechoslovakia ..	73	32	56	29	15	48	47
Austria	61	44	28	34	27	21	61
Japan	57	41	28	27	23	15	56
West Germany ..	53	38	28	34	26	24	68
France	51	36	29	24	21	12	58
Irish Republic ..	46	36	22	25	23	8	64
Northern Ireland	41	29	29	25	21	16	72
Scotland	37	29	22	22	19	14	66
England and Wales	30	24	20	19	17	11	71
Switzerland ..	30	26	13	21	19	10	73
U.S.A.	28	26	7	20	19	5	73
Netherlands ..	25	19	24	17	13	24	68
Sweden	22	17	23	16	13	19	76

The secular changes over the last 10 years in stillbirth rates and infant mortality at various periods during the first year of life are shown in Table XLVII (page 85) and Diagram 10 (page 86). Between 1946 and 1951 the stillbirth rate fell from 27·2 to 23·0 (15 per cent) since when the rate has not changed appreciably. Infant mortality fell by 31 per cent in the first five-year period but only 20 per cent in the second. Early neonatal death rates fell by 13 per cent and 8 per cent, and late neonatal by 51 per cent and 21 per cent. The improvement in the post-neonatal rates was similar in both periods, being 41 per cent in the first, and 37 per cent in the second, period.

Table XLVII.—Secular trend of stillbirths per 1,000 total births, and of deaths in the early neonatal, late neonatal and post-neonatal periods per 1,000 related live births, distinguishing illegitimacy, 1936–39, 1940–44 and 1945 to 1956, England and Wales

		1936 to 1939	1940 to 1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
All infants	Stillbirths (late foetal deaths at or over 28 weeks) — Annual rate	38·8	32·3	27·6	27·2	24·1	23·2	22·7	22·6	23·0	22·7	22·4	23·5	23·2	22·9
	Stillbirths (late foetal deaths at or over 28 weeks) — per cent of 1936–39	*100*	*83*	*71*	*70*	*62*	*60*	*59*	*58*	*59*	*59*	*58*	*61*	*60*	*59*
	Early neonatal deaths (under 1 week) — Annual rate	21·6	19·3	18·0	17·8	16·5	15·6	15·6	15·2	15·5	15·2	14·8	14·9	14·6	14·2
	Early neonatal deaths (under 1 week) — per cent of 1936–39	*100*	*89*	*83*	*82*	*76*	*72*	*72*	*70*	*72*	*70*	*69*	*69*	*68*	*66*
	Late neonatal deaths (1 week and under 4 weeks) — Annual rate	7·6	7·5	6·8	6·7	6·2	4·1	3·7	3·3	3·3	3·2	2·9	2·8	2·6	2·6
	Late neonatal deaths (1 week and under 4 weeks) — per cent of 1936–39	*100*	*99*	*89*	*88*	*82*	*54*	*49*	*43*	*43*	*42*	*38*	*37*	*34*	*34*
	Post-neonatal deaths (4 weeks and under 1 year) — Annual rate	25·8	25·1	21·3	18·4	18·6	14·2	13·0	11·1	10·9	9·3	9·2	7·7	7·6	6·9
	Post-neonatal deaths (4 weeks and under 1 year) — per cent of 1936–39	*100*	*97*	*83*	*71*	*72*	*55*	*50*	*43*	*42*	*36*	*36*	*30*	*29*	*27*
Illegitimate infants	Stillbirths (late foetal deaths at or over 28 weeks) — Annual rate	49·6	39·9	31·5	33·2	30·6	31·6	29·5	29·1	31·6	29·7	29·8	29·2	28·8	29·0
	Stillbirths (late foetal deaths at or over 28 weeks) — per cent of 1936–39	*100*	*80*	*64*	*67*	*62*	*64*	*59*	*59*	*64*	*60*	*60*	*59*	*58*	*58*
	Early neonatal (under 1 week) — Annual rate	34·4	28·1	24·3	23·7	23·5	22·0	24·9	21·4	21·4	21·3	19·3	20·2	20·8	18·9
	Early neonatal (under 1 week) — per cent of 1936–39	*100*	*82*	*71*	*69*	*68*	*64*	*72*	*62*	*62*	*62*	*56*	*59*	*60*	*55*
	Late neonatal (1 week and under 4 weeks) — Annual rate	10·9	10·7	10·0	9·6	9·9	5·5	4·8	4·5	4·3	3·9	3·2	3·5	3·1	2·7
	Late neonatal (1 week and under 4 weeks) — per cent of 1936–39	*100*	*98*	*92*	*88*	*91*	*50*	*44*	*41*	*39*	*36*	*29*	*32*	*28*	*25*
	Post-neonatal (4 weeks and under 1 year) — Annual rate	41·6	35·8	30·5	26·9	24·7	17·9	15·1	13·6	12·8	9·8	10·6	8·3	7·8	7·1
	Post-neonatal (4 weeks and under 1 year) — per cent of 1936–39	*100*	*86*	*73*	*65*	*59*	*43*	*36*	*33*	*31*	*24*	*25*	*20*	*19*	*17*

Diagram 10



Deaths at various periods during the first year of life per thousand related live births, and stillbirths per thousand total (live and still) births, 1941–45 and 1946 to 1956, England and Wales.

The following table gives the infant mortality from selected and important diseases in 1946, 1951 and 1956, with the increase or decrease in each of the two periods. The final column records the proportion of deaths from each individual cause that occurred in the neonatal period in 1956.

Cause of death	1946	1951	1956	1946–1951	1951–1956	Neonatal deaths as percentage of all infant deaths 1956
All causes :—						
Infant mortality ..	42·85	29·66	23·75	−13·19	−5·91	
Neonatal mortality	24·5	18·8	16·8	−5·7	−2·0	
Post-neonatal mortality ..	18·4	10·9	6·9	−7·5	−4·0	
Prenatal and natal group :—						
Congenital malformations	5·11	4·21	4·61	−0·90	+0·40	62
Immaturity ..	10·07	5·72	4·55	−4·35	−1·17	99
Postnatal asphyxia	2·92	3·59	3·55	+0·67	−0·04	99
Injury at birth ..	2·72	2·88	2·69	+0·16	−0·19	99
Postnatal group :—						
Gastro-enteritis ..	4·24	1·21	0·46	−3·03	−0·75	15
Pneumonia and bronchitis ..	8·31	5·74	3·76	−2·57	−1·98	32
Infective	3·02	1·81	0·82	−1·21	−0·99	25
All accidents ..	1·23	1·13	0·80	−0·10	−0·33	20

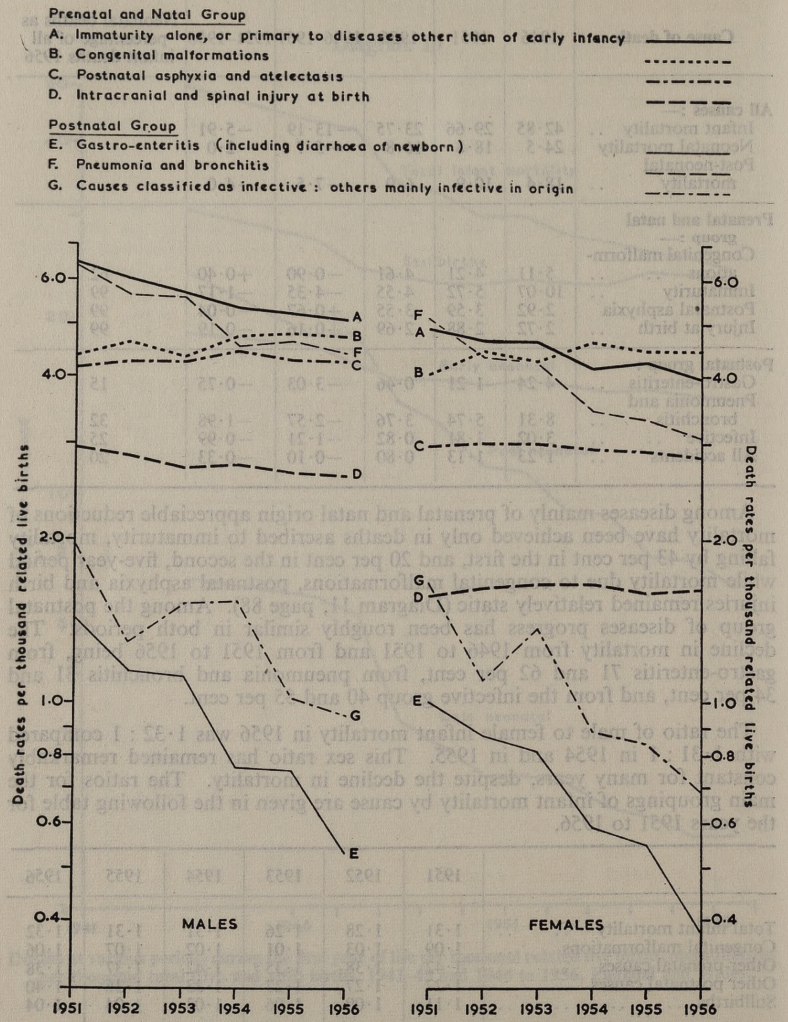
Among diseases mainly of prenatal and natal origin appreciable reductions of mortality have been achieved only in deaths ascribed to immaturity, mortality falling by 43 per cent in the first, and 20 per cent in the second, five-year period while mortality due to congenital malformations, postnatal asphyxia and birth injuries remained relatively static (Diagram 11, page 88). Among the postnatal group of diseases progress has been roughly similar in both periods. The decline in mortality from 1946 to 1951 and from 1951 to 1956 being, from gastro-enteritis 71 and 62 per cent, from pneumonia and bronchitis 31 and 34 per cent, and from the infective group 40 and 55 per cent.

The ratio of male to female infant mortality in 1956 was 1·32 : 1 compared with 1·31 : 1 in 1954 and in 1955. This sex ratio has remained remarkably constant for many years, despite the decline in mortality. The ratios for the main groupings of infant mortality by cause are given in the following table for the years 1951 to 1956.

	1951	1952	1953	1954	1955	1956
Total infant mortality	1·31	1·28	1·26	1·31	1·31	1·32
Congenital malformations ..	1·09	1·03	1·01	1·02	1·07	1·06
Other prenatal causes	1·42	1·38	1·35	1·42	1·37	1·38
Other postnatal causes	1·27	1·27	1·27	1·33	1·36	1·40
Stillbirths	1·11	1·09	1·06	1·03	1·04	1·04

The sex mortality ratios for stillbirths and congenital malformations are consistently lower than the ratios in the postnatal cause group and the remainder of the prenatal cause group. Boy babies appear more liable to die from almost any cause—whether accidental or otherwise—than girl babies. Girls seem to be more resistant to such conditions as birth injuries, accidental mechanical

Diagram 11



Infant mortality rates per thousand related live births, from certain causes, by sex, 1951 to 1956, England and Wales

suffocation or even lack of care ; conditions which show a consistently high sex mortality ratio commensurate with that for immaturity and postnatally acquired disease. The stillbirth sex ratio which fluctuated around 1·10 between 1936 and 1952 has fallen in the last four years, and whereas, prior to 1952, the male stillbirth rate exceeded the female by more than two per thousand total births, the difference is now less than one.

Seasonal variations in infant mortality and stillbirth rates are shown in Table L (page 94). Stillbirth rates and infant mortality at all periods of life are higher in autumn and winter than in spring and summer, but the difference is small in the case of stillbirths and early neonatal mortality, larger for late neonatal mortality, an even greater fluctuation being found in the post-neonatal period. Mortality from pneumonia and bronchitis shows the greatest seasonal variation, the peak being in the first quarter of the year.

Regional variations in infant mortality

Tables LI and LII (pages 95–97) show mortality and stillbirth rates in the standard regions, conurbations and urban and rural aggregates, while Table LIII (page 98) gives the principal causes of infant mortality in the four regional groups. Infant mortality ranged from 29·55 in South East Wales to 20·24 in the South Western region. In each regional group and in England and Wales as a whole a lower rate was found in the rural districts than in the towns. The two lowest rates recorded were in the rural districts of the South of England regional group (19·66) and in Greater London (19·86). In England the highest regional rate, 27·14, was found in the Northern region. The stillbirth rate varied from 19·31 in the London and South Eastern region and 19·26 in Greater London itself to 27·82 in South East Wales and 25·84 in the North Western region. In general the stillbirth rate fluctuated in similar fashion to the infant mortality rate but in the South Western region, where the infant mortality was 20·24, the stillbirth rate was 23·31 and in the East and West Ridings the rates were 26·26 and 22·71 respectively. Perinatal mortality (stillbirths plus deaths in the first week) varied from 31·41 in the London and South Eastern region to 44·43 in South East Wales. The total birth wastage here (stillbirths plus infant mortality) was 39·14 and 56·42 respectively, a difference of 17·28 per thousand total births, amounting to 44 per cent of the total birth wastage in the London and South Eastern region.

The highest mortality from the prenatal and natal group of diseases was found in Wales, the next highest in the North regional group and the lowest in the South. For the postnatal group the North of England had the highest mortality, Wales the second and the South again the lowest.

Among the individual groups of diseases contributing to the differences in regional mortality rates, congenital malformations, immaturity, postnatal asphyxia and atelectasis, intracranial and spinal injuries, and pneumonia and bronchitis were the most important. Mortality from each of these conditions was lowest in the South of England and next lowest in the Midlands and Eastern regional group.

A high mortality from congenital malformations was recorded in Wales in 1956 as also in 1954 and 1955. The mortality from postnatal asphyxia also was high in Wales during 1955 and 1956 but that from immaturity fell during the same period. Mortality from pneumonia and bronchitis has fallen steadily in each regional group since 1951, the greatest difference being recorded in Wales where mortality has fallen from 7·44 in 1951 to 4·10 in 1956 and in the North where the figures were 7·48 and 4·56 respectively. The fall was least in the South, from 4·21 to 3·04, while in the Midlands and Eastern it was from 5·33 to 3·62.

Table XLVIII.—Principal causes of death under 1 year, arranged in aetiological groups : (*a*) Age-group distribution per cent of all deaths assigned to each cause ; (*b*) Cause distribution per 1,000 total deaths in each age-group, 1956, England and Wales

Aetiological group	Cause of death (and International Classification Numbers)	Number of infant deaths (under 1 year)	Age distribution per cent of total infant deaths assigned to each cause					Cause distribution per 1,000 total infant deaths in each age-group				
			Infant mortality (under 1 year)	Neonatal mortality			Post-neonatal mortality (4 weeks and under 1 year)	Infant mortality (under 1 year)	Neonatal mortality			Post-neonatal mortality (4 weeks and under 1 year)
				Under 4 weeks	Early (under 1 week)	Late (1week and under 4 weeks)			Under 4 weeks	Early (under 1 week)	Late (1 week and under 4 weeks)	
	ALL CAUSES	16,554	100	71	60	11	29	1,000	1,000	1,000	1,000	1,000
Prenatal and natal group (including congenital malformations)	Congenital malformations (750–759)	3,215	100	62	39	23	38	194	170	128	395	255
	Total causes mainly of prenatal and natal origin other than congenital malformations ..	8,437	100	99	94	5	1	510	707	795	231	23
	Immaturity alone, or primary to diseases other than of early infancy (774, 776)	3,181	100	99	94	5	1	192	267	302	81	7
	Attributed to maternal toxaemia (769)	130	100	99	95	5	1	8	11	12	*3*	*0*
	Ill-defined diseases of early infancy (773) ..	186	100	91	77	13	9	11	14	15	14	*4*
	Postnatal asphyxia and atelectasis (762) ..	2,483	100	99	96	3	1	150	209	239	44	5
	Intracranial and spinal injury at birth (760) ..	1,490	100	98	92	6	2	90	124	139	47	5
	Other birth injury (including maternal antepartum haemorrhage) (761)	395	100	99	96	4	1	24	33	38	*8*	*0*
	Erythroblastosis (770)	349	100	98	92	6	2	21	29	32	12	*1*
	Haemorrhagic disease of newborn (771) ..	223	100	99	80	19	1	13	19	18	23	*0*
Postnatal group	Total causes mainly of postnatal origin	4,054	100	28	13	15	72	245	96	54	319	612
	Gastro-enteritis (including diarrhoea of newborn) (571, 764)	319	100	15	1	14	85	19	4	*0*	25	57
	Pneumonia and bronchitis (490–493, 763; 500–502)	2,612	100	32	16	16	68	158	71	42	223	373
	Causes classified as infective (001–138) and others* mainly infective in origin	566	100	25	7	18	75	34	12	4	54	89
	Whooping cough ; measles (056, 085)	67	100	1	—	1	99	4	*0*	—	*1*	14
	Acute upper respiratory infections and influenza (470–475 ; 480–483)	54	100	13	4	9	87	3	*1*	*0*	*3*	10
	Otitis media and mastoiditis ; empyema ; pleurisy (391–393 ; 518, 519)	70	100	11	1	10	89	4	*1*	*0*	*4*	13
	Septicaemia, skin and subcutaneous tissue infections ; sepsis of newborn (053, 690–698, 765–768)	103	100	65	22	43	35	6	6	2	24	8
	Tuberculosis other than tuberculous meningitis (001–008 ; 011–019)	8	100	—	—	—	100	*0*	—	—	—	*2*
	Tuberculous meningitis (010)	5	100	—	—	—	100	*0*	—	—	—	*1*
	Meningococcal infections and non-meningococcal meningitis (057 ; 340)	198	100	21	5	16	79	12	3	*1*	17	33
	Causes classified as infective not specified above (remainder 001–138)	61	100	30	11	18	70	4	*2*	*1*	*6*	9
	Accidental mechanical suffocation from vomit, food, foreign body, or in cot (E921–E925) ..	441	100	10	4	7	90	27	4	*2*	16	83
	Lack of care ; neglect (including foundlings) ; infanticide (E926 ; E980–E985)	62	100	89	89	—	11	4	5	6	—	*1*
	Other violent causes (remainder E800–E999) ..	54	100	19	15	4	81	3	*1*	*1*	*1*	9
	Total causes remaining	848	100	38	26	12	62	51	28	23	54	110
Unclassified	Neoplasms (140–239)	66	100	26	14	12	74	4	*1*	*1*	*4*	10
	Other remaining causes	782	100	39	27	12	61	47	26	22	50	99

* 340, 391–393, 470–483, 518, 519, 690–698, 765–768.

Table XLIX.—Principal causes of death under 1 year and in the neonatal, post-neonatal and other age periods, by sex, per 1,000 related live births, 1956, England and Wales

Aetiological group	Cause of death (and International Classification Numbers)		Total infant mortality (under 1 year)	Infant mortality per 1,000 related live births at various ages								
				Neonatal mortality (under 4 weeks)	Early neonatal mortality (under 1 week)	Late neonatal mortality (1 week and under 4 weeks)	Post-neonatal mortality (4 weeks and under 1 year)	Early neonatal period		Post-neonatal period		
								Under 1 day	1 day and under 1 week	4 weeks and under 3 months	3 months and under 6 months	6 months and under 1 year
	ALL CAUSES	M	26·88	19·19	16·30	2·89	7·67	8·32	7·98	3·13	2·59	1·97
		F	20·44	14·35	11·96	2·39	6·09	6·32	5·64	2·31	2·09	1·69
	Congenital malformations (750–759)	M	4·75	3·00	1·90	1·10	1·75	0·68	1·22	0·82	0·53	0·40
		F	4·47	2·70	1·71	0·99	1·77	0·72	0·99	0·78	0·52	0·47
	Total causes mainly of prenatal and natal origin other than congenital malformations	M	13·94	13·77	13·09	0·68	0·17	7·28	5·81	0·12	*0·02*	*0·03*
		F	10·07	9·93	9·39	0·54	0·14	5·40	3·99	0·10	*0·03*	*0·01*
Prenatal and natal group (including congenital malformations)	Immaturity alone, or primary to diseases other than of early infancy (774–776)	M	5·08	5·04	4·83	0·21	*0·04*	3·18	1·65	*0·04*	*0·00*	—
		F	3·98	3·92	3·71	0·21	0·06	2·24	1·47	*0·06*	*0·00*	—
	Attributed to maternal toxaemia (769)	M	0·20	0·20	0·19	*0·01*	—	0·09	0·10	—	—	—
		F	0·17	0·16	0·16	*0·00*	*0·01*	0·08	0·08	*0·01*	—	—
	Ill-defined diseases of early infancy (773)	M	0·32	0·29	0·24	*0·05*	*0·03*	0·10	0·14	*0·03*	*0·00*	*0·00*
		F	0·21	0·19	0·16	*0·03*	*0·02*	0·07	0·09	*0·02*	—	—
	Postnatal asphyxia and atelectasis (762)	M	4·22	4·19	4·05	0·14	*0·03*	2·11	1·94	*0·03*	*0·00*	*0·00*
		F	2·83	2·80	2·71	0·09	*0·03*	1·56	1·15	*0·01*	*0·01*	*0·01*
	Intracranial and spinal injury at birth (760)	M	2·61	2·57	2·40	0·17	*0·04*	1·05	1·35	*0·03*	*0·01*	*0·00*
		F	1·62	1·59	1·51	0·08	*0·03*	0·77	0·74	*0·01*	*0·01*	*0·01*
	Other birth injury (including maternal antepartum haemorrhage) (761)	M	0·61	0·61	0·59	*0·02*	*0·00*	0·40	0·19	—	—	*0·00*
		F	0·52	0·51	0·49	*0·02*	*0·01*	0·34	0·15	—	*0·01*	—
	Erythroblastosis (770)	M	0·50	0·49	0·46	*0·03*	*0·01*	0·29	0·17	*0·00*	—	*0·01*
		F	0·50	0·49	0·45	*0·04*	*0·01*	0·31	0·14	*0·00*	*0·00*	*0·01*
	Haemorrhagic disease of newborn (771)	M	0·39	0·39	0·32	0·07	*0·00*	*0·05*	0·27	*0·00*	—	—
		F	0·24	0·24	0·19	*0·05*	—	*0·02*	0·17	—	—	—
Postnatal group	Total causes mainly of postnatal origin	M	6·80	1·89	0·95	0·94	4·91	0·19	0·75	1·87	1·78	1·26
		F	4·84	1·33	0·59	0·74	3·51	0·10	0·49	1·30	1·29	0·92
	Gastro-enteritis (including diarrhoea of newborn) (571, 764)	M	0·53	0·08	—	0·08	0·45	—	—	0·21	0·14	0·10
		F	0·38	0·06	*0·01*	0·05	0·32	—	*0·01*	0·12	0·08	0·12
	Pneumonia and bronchitis (490–493, 763; 500–502)	M	4·40	1·44	0·76	0·68	2·96	0·09	0·67	1·13	1·11	0·72
		F	3·09	0·92	0·43	0·49	2·17	*0·03*	0 40	0·80	0·85	0·52
	Causes classified as infective (001–138) and others* mainly infective in origin	M	0·94	0·20	0·06	0·14	0·74	*0·00*	*0·05*	0·24	0·24	0·26
		F	0·69	0·20	0·06	0·14	0·49	*0·01*	0·06	0·18	0·14	0·17
	Accidental mechanical suffocation from vomit, food, foreign body, or in cot (E921–E925)	M	0·73	0·06	*0·02*	*0·04*	0·67	—	*0·02*	0·27	0·27	0·13
		F	0·53	0·07	*0·03*	*0·04*	0·46	*0·01*	*0·02*	0·19	0·19	0·08
	Lack of care; neglect (including foundlings); infanticide (E926, E980–E985)	M	0·11	0·10	0·10	—	*0·01*	0·09	*0·01*	—	*0·01*	*0·00*
		F	0·06	0·06	0·06	—	*0·00*	*0·05*	*0·01*	—	*0·00*	—
	Other violent causes (remainder E800–E999)	M	0·08	*0·02*	*0·02*	*0·00*	0·06	*0·01*	*0·01*	*0·01*	*0·02*	*0·03*
		F	0·08	*0·01*	*0·00*	*0·01*	0·07	*0·00*	—	*0·01*	*0·03*	*0·03*
Unclassified	Total causes remaining	M	1·38	0·52	0·36	0·16	0·86	0·18	0·19	0·32	0·26	0·28
		F	1·05	0·40	0·27	0·13	0·65	0·11	0·17	0·13	0·23	0·29
Immaturity, or with mention of immaturity (774, 776; 760·5–773·5)			8·72	8·64	8·08	0·56	0·08	4·53	3·55	0·07	*0·01*	*0·00*
Immaturity alone, or primary to diseases other than of early infancy (774, 776)			4·55	4·50	4·29	0·21	0·05	2·72	1·56	0·05	*0·00*	—
Immaturity associated with diseases of early infancy (760·5–773·5)			4·17	4·14	3·79	0·35	0·03	1·81	1·98	*0·03*	*0·00*	*0·00*
All other causes (760·0–773·0 and remainder)			15·03	8·20	6·12	2·08	6·83	2·82	3·29	2·66	2·34	1·83

* 340, 391–393, 470–483, 518, 519, 690–698, 765–768.

Table L.—Stillbirths per 1,000 total births, infant death rates under 1 year and in the early neonatal, late neonatal and post-neonatal periods and death rates from the principal causes of infant mortality ; comparison of annual and quarterly rates, 1956, England and Wales

Aetiological group	Cause of death (and International Classification Numbers)	Annual rates (per 1,000 related live births)	Quarterly rates (per 1,000 live birth occurrences)*				Quarterly rates per cent of annual rates			
			Jan. to March	April to June	July to Sept.	Oct. to Dec.	Jan. to March	April to June	July to Sept.	Oct. to Dec.
Stillbirths (late foetal deaths at or over 28 weeks' gestation)		22·89	23·69	22·63	22·25	22·99	*103*	*99*	*97*	*100*
Early neonatal deaths (infant deaths at ages under 1 week)		14·19	14·74	13·99	13·35	14·65	*104*	*99*	*94*	*103*
Late neonatal deaths (infant deaths at ages 1 week and under 4 weeks)		2·64	3·21	2·44	2·16	2·75	*122*	*92*	*82*	*104*
Post-neonatal deaths (infant deaths at ages 4 weeks and under 1 year)		6·91	9·66	6·08	4·69	6·79	*140*	*88*	*68*	*98*
Infant deaths (total under 1 year)		23·75	27·61	22·51	20·21	24·19	*116*	*95*	*85*	*102*
Prenatal and natal group (including congenital malformations)	Congenital malformations (750–759)	4·61	4·74	4·43	4·23	4·98	*103*	*96*	*92*	*108*
	Total causes mainly of prenatal and natal origin other than congenital malformations	12·06	12·42	11·75	11·55	12·49	*103*	*97*	*96*	*104*
	Immaturity alone, or primary to diseases other than of early infancy (774, 776)	4·55	4·37	4·58	4·68	4·55	*96*	*101*	*103*	*100*
	Attributed to maternal toxaemia (769)	0·19	0·17	0·14	0·19	0·24	*89*	*74*	*100*	*126*
	Ill-defined diseases of early infancy (773)	0·26	0·29	0·25	0·21	0·32	*112*	*96*	*81*	*123*
	Postnatal asphyxia and atelectasis (762)	3·55	3·72	3·39	3·25	3·84	*105*	*95*	*92*	*108*
	Intracranial and spinal injury at birth (760)	2·13	2·25	2·14	2·00	2·11	*106*	*100*	*94*	*99*
	Other birth injury (including maternal antepartum haemorrhage) (761)	0·56	0·62	0·50	0·60	0·54	*111*	*89*	*107*	*96*
	Erythroblastosis (770)	0·50	0·59	0·44	0·42	0·54	*118*	*88*	*84*	*108*
	Haemorrhagic disease of newborn (771)	0·32	0·41	0·30	0·21	0·35	*128*	*94*	*66*	*109*
Postnatal group	Total causes mainly of postnatal origin	5·85	9·14	4·71	3·57	5·69	*156*	*81*	*61*	*97*
	Gastro-enteritis (including diarrhoea of newborn) (571, 764)	0·46	0·65	0·45	0·28	0·43	*141*	*98*	*61*	*93*
	Pneumonia and bronchitis (490–493, 763 ; 500–502)	3·76	6·22	2·95	2·03	3·68	*165*	*78*	*54*	*98*
	Causes classified as infective (001–138) and others mainly infective in origin (340 ; 391–393 ; 470–483 ; 518, 519 ; 690–698 ; 765–768)	0·82	1·07	0·68	0·65	0·82	*130*	*83*	*79*	*100*
	Accidental mechanical suffocation from vomit, food, foreign body, or in cot (E921–E925)	0·63	0·91	0·52	0·44	0·65	*144*	*83*	*70*	*103*
	Lack of care ; neglect (including foundlings) ; infanticide (E926 ; E980–E985)	0·09	0·13	0·07	0·08	0·07	*144*	*78*	*89*	*78*
	Other violent causes (remainder E800–E999)	0·08	0·15	0·03	0·08	0·04	*188*	*38*	*100*	*50*
Unclassified	Total causes remaining	1·22	1·31	1·62	0·86	1·03	*107*	*133*	*70*	*84*
Immaturity, or with mention of immaturity (774, 776 ; 760·5–773·5)		8·72	8·95	8·30	8·39	9·23	*103*	*95*	*96*	*106*
Immaturity alone, or primary to diseases other than of early infancy (774, 776)		4·55	4·37	4·58	4·68	4·55	*96*	*101*	*103*	*100*
Immaturity associated with diseases of early infancy (760·5–773·5)		4·17	4·58	3·73	3·71	4·69	*110*	*89*	*89*	*112*
All other causes (760·0–773·0 and remainder)		15·03	18·66	14·21	11·81	14·96	*124*	*95*	*79*	*100*

* Stillbirth rates are per 1,000 total births.

Table LI.—Infant mortality per 1,000 related live births, and combined stillbirth and infant death rates per 1,000 total births, according to age, in standard regions, conurbations and urban and rural aggregates within regional groups, 1956, England and Wales

Standard regions and conurbations within the standard regions	Total infant mortality (under 1 year)	Infant mortality per 1,000 related live births at various ages									Stillbirths and infant deaths. Rates per 1,000 total births				
		Neonatal mortality (under 4 weeks)	Early neonatal mortality (under 1 week)	Late neonatal mortality (1 week and under 4 weeks)	Post-neonatal mortality (4 weeks and under 1 year)	Early neonatal period		Post-neonatal period			Stillbirths plus infant deaths under 1 year	Stillbirths (late foetal deaths at or over 28 weeks, gestation)	Stillbirths plus infant deaths under 1 week	Infant deaths at 1 week and over	Stillbirths plus infant deaths under 4 weeks
						Under 1 day	1 day and under 1 week	4 weeks and under 3 months	3 months and under 6 months	6 months and under 1 year					
ENGLAND AND WALES	**23·75**	**16·84**	**14·19**	**2·65**	**6·91**	**7·35**	**6·84**	**2·73**	**2·35**	**1·83**	**45·98**	**22·89**	**36·74**	**9·24**	**39·32**
Standard regions :															
NORTH OF ENGLAND															
Northern	27·14	18·93	15·75	3·18	8·21	7·57	8·18	3·58	2·70	1·93	51·14	24·79	40·14	11·00	43·23
East and West Ridings	26·26	18·51	15·55	2·96	7·75	8·03	7·52	2·61	2·88	2·26	48·25	22·71	37·90	10·35	40·79
North Western	27·02	18·59	15·81	2·78	8·43	8·58	7·24	3·51	2·79	2·13	52·04	25·84	41·23	10·81	43·93
MIDLANDS AND EASTERN															
North Midland	24·28	16·88	14·04	2·84	7·40	7·05	6·99	3·04	2·62	1·74	48·37	24·80	38·47	9·89	41·24
Midland	24·79	17·60	14·81	2·79	7·19	7·90	6·91	2·77	2·48	1·94	48·17	24·09	38·53	9·64	41·25
Eastern	20·57	14·81	12·14	2·67	5·76	6·38	5·76	2·32	1·79	1·65	40·44	20·38	32·27	8·18	34·88
SOUTH OF ENGLAND															
London and South Eastern	20·32	14·63	12·35	2·28	5·69	6·51	5·84	2·16	1·88	1·65	39·14	19·31	31·41	7·73	33·64
Southern	20·62	15·02	12·99	2·03	5·60	7·15	5·84	2·23	2·00	1·37	41·04	20·95	33·66	7·39	35·63
South Western	20·24	14·99	13·12	1·87	5·25	6·70	6·42	1·95	1·78	1·52	42·99	23·31	36·11	6·88	37·93
WALES (including Monmouthshire)	28·82	20·57	17·10	3·47	8·25	7·71	9·39	3·46	2·80	1·99	54·75	26·83	43·46	11·30	46·83
Wales I (South East)	29·55	20·76	17·10	3·66	8·79	8·02	9·09	3·67	3·12	2·00	56·42	27·82	44·43	11·99	47·98
Wales II (Remainder)	26·85	20·07	17·09	2·98	6·78	6·87	10·22	2·90	1·92	1·96	50·25	24·15	40·81	9·43	43·72
Conurbations within standard regions :															
Tyneside conurbation	24·23	17·52	14·67	2·85	6·71	7·10	7·57	3·00	2·48	1·23	50·83	27·35	41·60	9·22	*44·38*
Rest of Northern	28·21	19·45	16·16	3·29	8·76	7·75	8·41	3·80	2·78	2·18	51·25	23·84	39·60	11·66	42·81
West Yorkshire conurbation	25·29	17·62	14·79	2·83	7·67	8·22	6·58	2·95	2·63	2·09	46·22	21·60	36·06	10·16	38·82
Rest of East and West Ridings	26·89	19·10	16·04	3·06	7·79	7·91	8·13	2·38	3·04	2·37	49·57	23·44	39·10	10·48	42·08
S.E. Lancashire conurbation	27·58	18·93	16·36	2·57	8·65	9·06	7·30	3·32	3·12	2·21	51·92	25·17	41·10	10·82	43·60
Merseyside conurbation	26·44	18·10	15·48	2·62	8·34	9·25	6·23	3·95	2·95	1·44	51·38	25·73	40·80	10·58	43·34
Rest of North Western	26·87	18·59	15·50	3·09	8·28	7·63	7·86	3·38	2·36	2·54	52·61	26·59	41·66	10·95	44·67
West Midlands conurbation	24·41	17·02	14·33	2·69	7·39	7·95	6·38	3·05	2·55	1·79	47·83	24·11	38·09	9·74	40·71
Rest of Midland	25·16	18·17	15·28	2·89	6·99	7·84	7·44	2·49	2·41	2·09	48·51	24·07	38·97	9·54	41·79
Greater London conurbation	19·86	14·52	12·25	2·27	5·34	6·40	5·85	2·04	1·69	1·61	38·64	19·26	31·26	7·38	33·48
Rest of South Eastern	21·77	14·95	12·66	2·29	6·82	6·86	5·80	2·54	2·48	1·80	40·72	19·48	31·88	8·84	34·13

Table LII.—Infant mortality per 1,000 related live births, and combined stillbirth and infant death rates per 1,000 total births, according to age, in urban and rural aggregates within regional groups, 1956, England and Wales

Regional groups and urban and rural aggregates	Total infant mortality (under 1 year)	Infant mortality per 1,000 related live births at various ages									Stillbirths and infant deaths. Rates per 1,000 total births				
		Neonatal mortality (under 4 weeks)	Early neonatal mortality (under 1 week)	Late neonatal mortality (1 week and under 4 weeks)	Post-neonatal mortality (4 weeks and under 1 year)	Early neonatal period		Post-neonatal period			Stillbirths plus infant deaths under 1 year	Stillbirths (late foetal deaths at or over 28 weeks' gestation)	Stillbirths plus infant deaths under 1 week	Infant deaths at 1 week and over	Stillbirths plus infant deaths under 4 weeks
						Under 1 day	1 day and under 1 week	4 weeks and under 3 months	3 months and under 6 months	6 months and under 1 year					
ENGLAND AND WALES	23·75	16·84	14·19	2·65	6·91	7·35	6·84	2·73	2·35	1·83	45·98	22·89	36·74	9·24	39·32
Conurbations	23·10	16·37	13·87	2·50	6·73	7·52	6·35	2·71	2·29	1·73	44·66	22·18	35·73	8·93	38·17
Other urban areas with populations of 100,000 and over	24·24	17·18	14·54	2·64	7·06	7·47	7·07	2·75	2·57	1·74	47·62	24·07	38·25	9·37	40·82
with populations of 50,000 to 100,000	26·43	18·46	14·94	3·52	7·97	7·43	7·51	3·04	2·85	2·08	49·70	24·03	38·60	11·10	42·03
with populations of under 50,000	24·89	17·57	14·96	2·61	7·32	7·42	7·53	2·96	2·53	1·83	47·88	23·68	38·27	9·60	40·82
Rural districts	22·33	16·04	13·41	2·63	6·29	6·83	6·58	2·39	1·90	2·00	43·84	22·11	35·21	8·63	37·78
NORTH OF ENGLAND (Northern, East and West Ridings, North Western)	26·83	18·65	15·72	2·98	8·18	8·17	7·55	3·27	2·79	2·12	50·72	24·68	39·99	10·72	42·85
Conurbations (Tyneside, West Yorkshire, South East Lancashire, Merseyside)	26·26	18·20	15·52	2·68	8·06	8·63	6·89	3·35	2·86	1·85	50·24	24·75	39·87	10·37	42·48
Other urban areas with populations of 100,000 and over	26·13	17·57	14·70	2·87	8·56	7·10	7·60	3·28	3·05	2·23	49·82	24·46	38·78	11·04	41·58
with populations of 50,000 to 100,000	31·01	21·30	17·01	4·29	9·71	8·39	8·62	3·61	3·69	2·41	54·74	24·65	41·22	13·52	45·40
with populations of under 50,000	27·56	19·74	16·86	2·88	7·82	7·90	8·97	3·09	2·57	2·16	52·58	25·86	42·27	10·31	45·07
Rural districts	25·95	18·08	14·93	3·15	7·87	7·82	7·11	3·02	2·09	2·76	48·07	22·84	37·42	10·64	40·50
MIDLANDS AND EASTERN (North Midland, Midland, Eastern)	23·39	16·56	13·79	2·77	6·83	7·19	6·59	2·72	2·32	1·79	45·95	23·21	36·67	9·29	39·37
Conurbation (West Midlands) ..	24·41	17·02	14·33	2·69	7·39	7·95	6·38	3·05	2·55	1·79	47·83	24·11	38·09	9·74	40·71
Other urban areas with populations of 100,000 and over	22·99	16·91	14·30	2·61	6·08	7·47	6·83	2·26	2·31	1·51	44·91	22·53	36·50	8·41	39·05
with populations of 50,000 to 100,000	24·73	17·46	13·44	4·02	7·27	6·91	6·53	2·90	2·33	2·04	49·44	25·45	38·54	10·90	42·45
with populations of under 50,000	24·35	17·01	14·39	2·62	7·34	7·28	7·11	3·14	2·54	1·66	46·29	22·59	36·65	9·64	39·20
Rural districts	21·47	15·22	12·62	2·60	6·25	6·48	6·14	2·32	1·93	2·00	43·59	22·72	35·03	8·56	37·58
SOUTH OF ENGLAND (London and South Eastern, Southern, South Western) ..	20·36	14·76	12·61	2·15	5·60	6·66	5·95	2·13	1·89	1·58	40·20	20·35	32·69	7·51	34·80
Conurbation (Greater London) ..	19·86	14·52	12·25	2·27	5·34	6·40	5·85	2·04	1·69	1·61	38·64	19·26	31·26	7·38	33·48
Other urban areas with populations of 100,000 and over	21·79	15·69	13·60	2·09	6·10	7·49	6·11	2·37	2·21	1·52	45·54	24·38	37·63	7·91	39·67
with populations of 50,000 to 100,000	22·76	16·04	14·08	1·96	6·72	7·01	7·07	2·47	2·43	1·82	42·82	20·64	34·42	8·40	36·33
with populations of under 50,000	20·84	14·75	12·66	2·09	6·09	6·94	5·72	2·41	2·32	1·36	41·53	21·23	33·61	7·93	35·65
Rural districts	19·66	14·51	12·50	2·01	5·15	6·55	5·94	1·87	1·63	1·65	39·43	20·26	32·49	6·94	34·47
WALES (including Monmouthshire)	28·82	20·57	17·10	3·47	8·25	7·71	9·39	3·46	2·80	1·99	54·75	26·83	43·46	11·30	46·83
Urban areas with populations of 100,000 and over	28·21	20·14	16·93	3·21	8·07	8·46	8·46	3·61	2·86	*1·60*	54·38	27·05	43·50	10·88	46·62
Urban area with population of 50,000 to 100,000	37·79	27·09	*21·20*	*5·89*	*10·70*	*7·07*	*14·13*	*4·72*	*4·77*	*1·21*	78·83	42·79	63·06	15·77	68·69
Urban areas with populations of under 50,000	29·67	20·62	17·36	3·26	9·05	7·83	9·54	3·54	2·90	2·61	55·83	27·11	43·99	11·84	47·15
Rural districts	27·39	20·42	16·54	3·88	6·97	6·89	9·65	3·11	2·44	*1·42*	51·61	25·01	41·12	10·49	44·89

Table LIII.—Principal causes of death under 1 year : Death rates per 1,000 related live births showing regional group rates as percentages of corresponding national rates, 1956, England and Wales

Aetiological group	Cause of death (and International Classification Numbers)	Infant mortality rates per 1,000 related live births					Regional rates per cent of England and Wales rate				
		England and Wales	North of England	Midlands and Eastern	South of England	Wales	England and Wales	North of England	Midlands and Eastern	South of England	Wales
	ALL CAUSES	**23·75**	**26·83**	**23·40**	**20·35**	**28·81**	*100*	*113*	*99*	*86*	*121*
Prenatal and natal group (including congenital malformations)	Congenital malformations (750–759)	4·61	5·05	4·72	3·87	6·23	*100*	*110*	*102*	*84*	*135*
	Total causes mainly of prenatal and natal origin other than congenital malformations.. ..	12·06	13·43	11·64	10·79	14·75	*100*	*111*	*97*	*89*	*122*
	Immaturity alone, or primary to diseases other than of early infancy (774, 776)	4·55	5·67	4·20	3·84	4·42	*100*	*125*	*92*	*84*	*97*
	Attributed to maternal toxaemia (769) ..	0·19	0·17	0·22	0·15	*0·37*	*100*	*89*	*116*	*79*	*195*
	Ill-defined diseases of early infancy (773)	0·26	0·28	0·27	0·25	*0·29*	*100*	*108*	*104*	*96*	*112*
	Postnatal asphyxia and atelectasis (762) ..	3·55	3·59	3·48	3·31	5·25	*100*	*101*	*98*	*93*	*148*
	Intracranial and spinal injury at birth (760) ..	2·13	2·21	2·11	2·03	2·48	*100*	*104*	*99*	*95*	*116*
	Other birth injury (including maternal antepartum haemorrhage) (761)	0·56	0·46	0·61	0·52	1·23	*100*	*82*	*109*	*93*	*220*
	Erythroblastosis (770)	0·50	0·60	0·44	0·45	0·54	*100*	*120*	*88*	*90*	*108*
	Haemorrhagic disease of newborn (771) ..	0·32	0·44	0·31	0·24	*0·17*	*100*	*138*	*97*	*75*	*53*
	Total causes mainly of postnatal origin ..	5·85	7·04	5·80	4·61	6·43	*100*	*120*	*99*	*79*	*110*
Postnatal group	Gastro-enteritis (including diarrhoea of newborn) (571, 764)	0·46	0·60	0·50	0·30	*0·44*	*100*	*130*	*109*	*65*	*96*
	Pneumonia and bronchitis (490–493, 763; 500–502)	3·76	4·56	3·62	3·04	4·10	*100*	*121*	*96*	*81*	*109*
	Causes classified as infective (001–138) and others mainly infective in origin*	0·82	0·93	0·80	0·66	1·15	*100*	*113*	*98*	*80*	*140*
	Whooping cough ; measles (056, 085) ..	0·09	0·10	0·14	*0·05*	*0·15*	*100*	*111*	*156*	*56*	*167*
	Acute upper respiratory infections and influenza (470–475, 480–483)	0·08	0·11	*0·09*	*0·02*	*0·17*	*100*	*138*	*112*	*25*	*212*
Postnatal group—*contd.*	Otitis media and mastoiditis, empyema, pleurisy (391–393, 518, 519)	0·10	0·11	*0·06*	0·11	*0·17*	*100*	*110*	*60*	*110*	*170*
	Septicaemia, skin and subcutaneous tissue infections, sepsis of newborn (053, 690–698, 765–768)	0·15	0·15	0·16	0·13	*0·15*	*100*	*100*	*107*	*87*	*100*
	Tuberculosis, other than tuberculous meningitis (001–008, 011–019)	*0·01*	*0·01*	*0·01*	*0·02*	—	*100*	*100*	*100*	*200*	—
	Tuberculous meningitis (010)	*0·01*	*0·02*	*0·01*	—	—	*100*	*200*	*100*	—	—
	Meningococcal infections and non-meningococcal meningitis (057, 340)	0·29	0·35	0·28	0·22	*0·29*	*100*	*121*	*97*	*76*	*100*
	Causes classified as infective not specified above (remainder 001–138)	0·09	*0·08*	*0·05*	0·09	*0·22*	*100*	*89*	*56*	*100*	*244*
	Accidental mechanical suffocation from vomit, food, foreign body, or in cot (E921–E925)	0·63	0·80	0·72	0·42	0·61	*100*	*127*	*114*	*67*	*97*
	Lack of care, neglect (including foundlings); infanticide (E926, E980–E985)	0·09	0·10	*0·08*	0·10	*0·02*	*100*	*111*	*89*	*111*	*22*
	Other violent causes (remainder E800–E999)	0·08	*0·05*	*0·09*	0·09	*0·10*	*100*	*62*	*112*	*112*	*125*
	Total causes remaining	1·22	1·32	1·24	1·08	1·40	*100*	*108*	*102*	*89*	*115*
Unclassified	Neoplasms (140–239)	0·09	0·09	*0·10*	0·09	*0·10*	*100*	*100*	*111*	*100*	*111*
	Other remaining causes	1·13	1·23	1·14	0·98	1·30	*100*	*109*	*101*	*87*	*115*
Immaturity, or with mention of immaturity (774, 776; 760·5–773·5)		8·72	9·92	8·28	7·75	10·40	*100*	*114*	*95*	*89*	*119*
Immaturity alone, or primary to diseases other than of early infancy (774, 776)		4·55	5·67	4·20	3·84	4·42	*100*	*125*	*92*	*84*	*97*
Immaturity associated with diseases of early infancy (760·5–773·5)		4·17	4·25	4·07	3·91	5·99	*100*	*102*	*98*	*94*	*144*
All other causes (760·0–773·0 and remainder)		15·03	16·91	15·12	12·59	18·40	*100*	*113*	*101*	*84*	*122*

* 340, 391–393, 470–483, 518, 519, 690–698, 765–768.

The secular trend of stillbirth rates, neonatal and post-neonatal mortality in each regional group and each standard region from 1952 to 1956 is shown in Table LIV (page 101). The second half of the table shows the rate for each subsequent year as a percentage of that in 1952. Stillbirth rates have fluctuated from year to year in all regions and no evidence of any general or regional trend over this period can be deduced. The overall fall in neonatal mortality in England and Wales was 8 per cent, but in the South of England it was 10 per cent and in Wales only 1 per cent. The decrease in post-neonatal mortality was, as has been mentioned before, much greater, averaging 26 per cent over the whole country, with Wales showing the greatest improvement with a reduction of 34 per cent. Over the last ten years, however, both neonatal and post-neonatal mortality has improved to very much the same degree in all standard regions, the total fall in neonatal mortality amounting to nearly one-third, and that in post-neonatal mortality to about three-fifths of what it was ten years ago.

Stillbirth rates per thousand total births by age and parity for the years 1954 to 1956 are shown below.

Age group	Parity* of mother						
	0	1	2	3	4	5 and over	All
All ages	26	17	21	25	29	38	23
Under 20	22	11	*16*	*19*	—	—	21
20–	21	13	16	18	18	*13*	19
25–	25	15	18	19	22	25	20
30–	34	19	21	25	27	28	25
35–	44	27	30	30	34	41	34
40–	52	41	37	41	48	54	46
45 and over	61	44	71	74	74	88	74
Not stated	221	25	*27*	*36*	*58*	*54*	130

* Parity in this instance means previous liveborn children.

For mothers in each age-group the risk of stillbirth is high for the first birth, much lower for the second, rising again for the third and fourth, and exceeding the initial risk for the fifth and subsequent births. Mothers under 20 years of age show a slightly higher risk of stillbirth in their first pregnancy than women aged 20–24, but apart from this one exception, for each birth rank the stillbirth rate increases with each increase in maternal age.

Other aspects of stillbirths are discussed in the Births chapter (page 47) and in the Miscellaneous chapter (pages 244–249).

Table LIV.—Secular trend of stillbirths per 1,000 total births, and of deaths in the neonatal and post-neonatal periods per 1,000 related live births, in standard regions, 1952 to 1956, England and Wales

	Standard regions	Rates in each year 1952 to 1956					Rates in 1952 to 1956 per cent of rate in 1952				
		1952	1953	1954	1955	1956	1952	1953	1954	1955	1956
Stillbirths (at or over 28 weeks' gestation) per 1,000 live and stillbirths	**ENGLAND AND WALES**	**22·7**	**22·4**	**23·5**	**23·2**	**22·9**	*100*	*99*	*104*	*102*	*101*
	NORTH OF ENGLAND	24·8	24·2	25·8	25·3	24·7	*100*	*98*	*104*	*102*	*100*
	Northern	24·9	23·3	24·8	24·7	24·8	*100*	*94*	*100*	*99*	*100*
	East and West Ridings..	23·9	23·6	25·0	24·8	22·7	*100*	*99*	*105*	*104*	*95*
	North Western	25·2	25·0	26·8	26·0	25·8	*100*	*99*	*106*	*103*	*102*
	MIDLANDS AND EASTERN	22·2	22·2	23·6	23·3	23·2	*100*	*100*	*106*	*105*	*105*
	North Midland	22·5	22·9	24·1	24·3	24·8	*100*	*102*	*107*	*108*	*110*
	Midland	22·7	23·3	24·4	24·5	24·1	*100*	*103*	*107*	*108*	*106*
	Eastern	21·1	20·0	21·8	20·7	20·4	*100*	*95*	*103*	*98*	*97*
	SOUTH OF ENGLAND	20·2	20·4	20·7	20·2	20·4	*100*	*101*	*102*	*100*	*101*
	London and South Eastern	20·0	20·2	20·1	19·5	19·3	*100*	*101*	*100*	*98*	*96*
	Southern	20·0	21·0	20·5	20·5	20·9	*100*	*105*	*102*	*102*	*104*
	South Western	21·0	20·4	23·0	22·2	23·3	*100*	*97*	*110*	*106*	*111*
	WALES (including Monmouthshire) ..	28·0	25·3	27·3	28·3	26·8	*100*	*90*	*98*	*101*	*96*
Neonatal mortality per 1,000 related live births	**ENGLAND AND WALES**	**18·3**	**17·7**	**17·7**	**17·3**	**16·8**	*100*	*97*	*97*	*95*	*92*
	NORTH OF ENGLAND	20·3	19·7	19·6	19·2	18·7	*100*	*97*	*97*	*95*	*92*
	Northern	20·2	19·3	20·4	21·3	18·9	*100*	*96*	*101*	*105*	*94*
	East and West Ridings..	18·9	19·8	18·1	17·3	18·5	*100*	*105*	*96*	*92*	*98*
	North Western ..	21·1	19·9	20·2	19·2	18·6	*100*	*94*	*96*	*91*	*88*
	MIDLANDS AND EASTERN	18·0	17·7	17·9	16·7	16·6	*100*	*98*	*99*	*93*	*92*
	North Midland	18·9	18·0	18·0	17·0	16·9	*100*	*95*	*95*	*90*	*89*
	Midland	18·6	18·9	19·4	18·0	17·6	*100*	*102*	*104*	*97*	*95*
	Eastern	16·2	15·7	15·5	14·6	14·8	*100*	*97*	*96*	*90*	*91*
	SOUTH OF ENGLAND	16·4	15·4	15·3	15·4	14·8	*100*	*94*	*93*	*94*	*90*
	London and South Eastern	15·7	15·0	14·8	15·2	14·6	*100*	*96*	*94*	*97*	*93*
	Southern	16·3	15·4	16·2	15·8	15·0	*100*	*94*	*99*	*97*	*92*
	South Western	18·8	16·5	16·3	15·5	15·0	*100*	*88*	*87*	*82*	*80*
	WALES (including Monmouthshire) ..	20·8	19·7	21·5	20·8	20·6	*100*	*95*	*103*	*100*	*99*
Post-neonatal mortality per 1,000 related live births	**ENGLAND AND WALES**	**9·3**	**9·1**	**7·7**	**7·6**	**6·9**	*100*	*98*	*83*	*82*	*74*
	NORTH OF ENGLAND	11·3	10·6	9·2	9·0	8·2	*100*	*94*	*81*	*80*	*73*
	Northern	11·9	11·6	9·2	9·9	8·2	*100*	*97*	*77*	*83*	*69*
	East and West Ridings..	11·0	10·7	9·7	8·9	7·7	*100*	*97*	*88*	*81*	*70*
	North Western	11·3	10·0	9·0	8·7	8·4	*100*	*88*	*80*	*77*	*74*
	MIDLANDS AND EASTERN	9·2	8·8	7·4	7·7	6·8	*100*	*96*	*80*	*84*	*74*
	North Midland	9·6	9·8	8·0	8·7	7·4	*100*	*102*	*83*	*91*	*77*
	Midland	10·2	8·9	7·9	8·1	7·2	*100*	*87*	*77*	*79*	*71*
	Eastern	7·1	7·6	6·2	6·0	5·8	*100*	*107*	*87*	*85*	*82*
	SOUTH OF ENGLAND	6·9	7·7	6·1	5·9	5·6	*100*	*112*	*88*	*86*	*81*
	London and South Eastern	6·9	7·6	5·5	6·0	5·7	*100*	*110*	*80*	*87*	*83*
	Southern	7·1	8·0	7·0	5·8	5·6	*100*	*113*	*99*	*82*	*79*
	South Western	6·8	8·1	7·2	5·7	5·2	*100*	*119*	*106*	*84*	*76*
	WALES (including Monmouthshire) ..	12·5	11·6	10·0	10·6	8·2	*100*	*93*	*80*	*85*	*66*

Table LV.—Secular trend of stillbirths per 1,000 total births, 1928 to 1956, and of deaths in the neonatal, post-neonatal and other age periods under 1 year per 1,000 live births, 1906–1956, England and Wales

Period	Total infant mortality (under 1 year)	Infant mortality per 1,000 live births* at various ages									Stillbirths and infant deaths—rates per 1,000 total births†				
		Neonatal mortality (under 4 weeks)	Early neonatal mortality (under 1 week)	Late neonatal mortality (1 week and under 4 weeks)	Post-neonatal mortality (4 weeks and under 1 year)	Early neonatal period		Post-neonatal period			Stillbirths plus infant deaths under 1 year "*birth wastage*"	Stillbirths (late foetal deaths, at or over 28 weeks' gestation)	Stillbirths plus infant deaths under 1 week "*perinatal mortality*"	Infant deaths at 1 week and over	Stillbirths plus infant deaths under 4 weeks
						Under 1 day	1 day and under 1 week	4 weeks and under 3 months	3 months and under 6 months	6 months and under 1 year					
1906–1910	117·1	40·2	24·5	15·7	76·9	11·5	13·0	22·8	22·0	32·1	—	—	—	—	—
1911–1915	108·7	39·0	24·1	14·9	69·8	11·4	12·7	20·2	19·6	30·0	—	—	—	—	—
1916–1920	90·9	37·0	23·4	13·7	53·9	11·0	12·4	16·5	14·6	22·8	—	—	—	—	—
1921–1925	74·9	33·4	21·7	11·7	41·6	10·4	11·3	12·8	11·3	17·5	—	—	—	—	—
1926–1930	67·6	31·8	21·8	9·9	35·7	10·3	11·5	10·8	9·5	15·4	—	—	—	—	—
1931–1935	61·9	31·4	22·4	9·0	30·5	10·7	11·7	9·9	8·5	12·1	—	—	—	—	—
1936–1940	55·3	29·2	21·5	7·7	26·0	10·4	11·2	8·8	7·8	9·4	—	—	—	—	—
1941–1945	49·8	26·0	18·7	7·2	23·8	9·3	9·5	8·9	7·7	7·2	—	—	—	—	—
1946–1950	36·3	21·1	16·2	4·9	15·2	7·9	8·4	5·8	5·0	4·4	—	—	—	—	—
1928	65·3	31·1	21·6	9·5	34·2	10·4	11·2	10·7	9·3	14·2	102·6	40·1	60·8	41·7	69·9
1929	73·9	32·8	22·2	10·5	41·1	10·4	11·9	11·5	10·6	19·0	111·4	40·0	61·4	50·0	71·6
1930	60·2	30·9	22·0	8·9	29·3	10·4	11·6	9·7	7·9	11·7	98·3	40·8	61·9	36·4	70·4
1931	65·7	31·5	22·1	9·5	34·2	10·4	11·7	10·8	9·2	14·2	104·5	40·9	62·1	42·4	71·2
1932	64·5	31·5	22·4	9·2	33·0	10·6	11·8	10·8	9·0	13·2	103·7	41·3	62·8	40·8	71·6
1933	62·7	32·1	22·9	9·3	30·6	11·0	11·8	9·8	8·6	12·2	102·5	41·4	63·4	39·1	72·3
1934	59·3	31·4	22·7	8·7	27·9	10·9	11·8	8·9	7·7	11·3	96·7	40·5	62·2	34·5	70·5
1935	57·0	30·4	22·0	8·4	26·6	10·7	11·3	9·1	7·7	9·8	95·4	40·7	61·9	33·5	69·9
1936	58·7	30·2	21·9	8·2	28·5	10·7	11·3	9·3	8·3	10·9	95·9	39·7	60·8	35·2	68·7
1937	57·7	29·7	22·0	7·8	28·0	10·8	11·2	9·4	8·3	10·3	94·4	39·0	60·2	34·2	67·6
1938	52·8	28·3	21·1	7·1	24·5	10·3	10·8	8·2	7·3	9·0	88·9	38·3	58·6	30·4	65·5
1939	50·6	28·3	21·2	7·1	22·2	10·3	10·9	7·9	7·0	7·3	86·9	38·1	58·5	28·4	65·3
1940	56·8	29·6	21·3	8·3	27·2	9·8	11·5	9·3	8·2	9·7	92·5	37·2	57·7	34·7	65·7
1941	60·0	29·0	20·7	8·3	31·1	10·1	10·6	11·3	9·7	10·1	92·4	34·8	54·7	37·7	62·7
1942	50·6	27·2	19·6	7·7	23·4	9·6	10·0	8·7	7·5	7·2	81·1	33·2	52·1	29·0	59·4
1943	49·1	25·2	18·3	6·9	23·9	9·1	9·2	8·8	7·8	7·3	77·5	30·1	47·9	29·6	54·6
1944	45·4	24·4	17·5	6·9	21·1	8·8	8·8	8·0	7·0	6·1	70·9	27·6	44·5	26·3	51·1
1945	46·0	24·8	18·0	6·8	21·3	9·0	9·0	8·2	7·0	6·1	73·4	27·6	45·2	28·1	51·8
1946	42·9	24·5	17·8	6·7	18·4	8·7	9·1	7·1	6·1	5·2	66·9	27·2	44·3	22·6	50·7
1947	41·4	22·7	16·5	6·2	18·6	7·8	8·7	6·9	6·0	5·7	65·0	24·1	40·3	24·6	46·4
1948	33·9	19·7	15·6	4·1	14·2	7·8	7·9	5·5	4·8	3·9	56·8	23·2	38·5	18·4	42·5
1949	32·4	19·3	15·6	3·7	13·0	7·6	8·0	4·8	4·4	3·8	54·6	22·7	38·0	16·7	41·5
1950	29·6	18·5	15·2	3·3	11·1	7·2	8·0	4·3	3·7	3·1	51·7	22·6	37·4	14·3	40·7
1951	29·7	18·8	15·5	3·3	10·9	7·5	8·0	4·1	3·6	3·2	52·2	23·0	38·2	14·0	41·5
1952	27·6	18·3	15·2	3·2	9·3	7·6	7·6	3·7	3·0	2·6	49·6	22·7	37·5	12·1	40·6
1953	26·8	17·7	14·8	2·9	9·1	7·4	7·4	3·4	3·0	2·7	48·6	22·4	36·9	11·7	39·7
1954	25·4	17·7	14·9	2·8	7·7	7·6	7·4	3·0	2·6	2·1	48·4	23·5	38·1	10·3	40·8
1955	24·9	17·3	14·6	2·6	7·6	7·6	7·0	2·9	2·6	2·1	47·5	23·2	37·4	10·0	40·0
1956	23·7	16·8	14·2	2·6	6·9	7·4	6·8	2·7	2·3	1·8	46·0	22·9	36·7	9·2	39·3

* Rates based on related live births from 1926 onwards.

† The births upon which these rates are based for successive calendar years are numbers registered up to 1938 inclusive, and numbers of occurrences from 1939.

TUBERCULOSIS

In 1956 mortality from tuberculosis continued the rapid decline to which we have become accustomed in recent years. There were 3,804 male and 1,571 female deaths from this disease compared with 4,533 male and 1,959 female deaths in 1955. These figures represent a decline between 1955 and 1956 of 16 and 20 per cent for males and females respectively.

The table below gives details of the death rates from all forms of tuberculosis in four main age-groups in 1955 and 1956, together with the percentage decline since 1955.

Age at death	Males			Females		
	Death rate per million living		Percentage fall in death rate	Death rate per million living		Percentage fall in death rate
	1955	1956		1955	1956	
0–	12	10	17	17	7	59
15–	104	76	27	92	70	24
45–	425	343	19	103	79	23
65 and over	642	608	5	137	137	0
All ages ..	212	177	17	85	68	20

The fall at age 65 and over was relatively small for males, and for females there was no change. Between 15 and 64 there was a fall in the death rate of about 20 to 25 per cent. The large decrease in the death rate for female children is not thought to be of any special significance, since the numbers of deaths in this group were very small and random fluctuations could have produced the large differences between the decreases in the male and female death rates. The percentage fall in the number of deaths from respiratory tuberculosis (16·9 per cent) was slightly less than that for the non-respiratory form of the disease (20·3 per cent).

Respiratory tuberculosis

In 1956 there were 3,534 male and 1,319 female deaths from this disease, representing crude death rates of 177 and 68 per million population respectively. Table LVI (page 105) shows the death rates for each sex-age group from 1931 onwards. The rate fell for each group in 1956 compared with the previous year with the exception of the male 0–4 year age-group, where the number of deaths increased from 5 in 1955 to 11 in 1956, the male 10–14 year age-group, where they increased from 1 to 4, and in both sexes over 75 years of age. These increases are probably not of any significance, and do not indicate any change from the general downward trend in mortality from this disease.

The enormous change in mortality from tuberculosis in the past ten years is well shown in Diagram 12 (page 106). While the peak age for mortality in both sexes was much lower in 1956 than ten years previously, in males it had advanced five years and in females the maximum mortality had shifted from younger adult life to old age, although there still was a small peak in the 25–30 year age-group. As with the males, this last peak was five years in advance of where it was ten years ago.

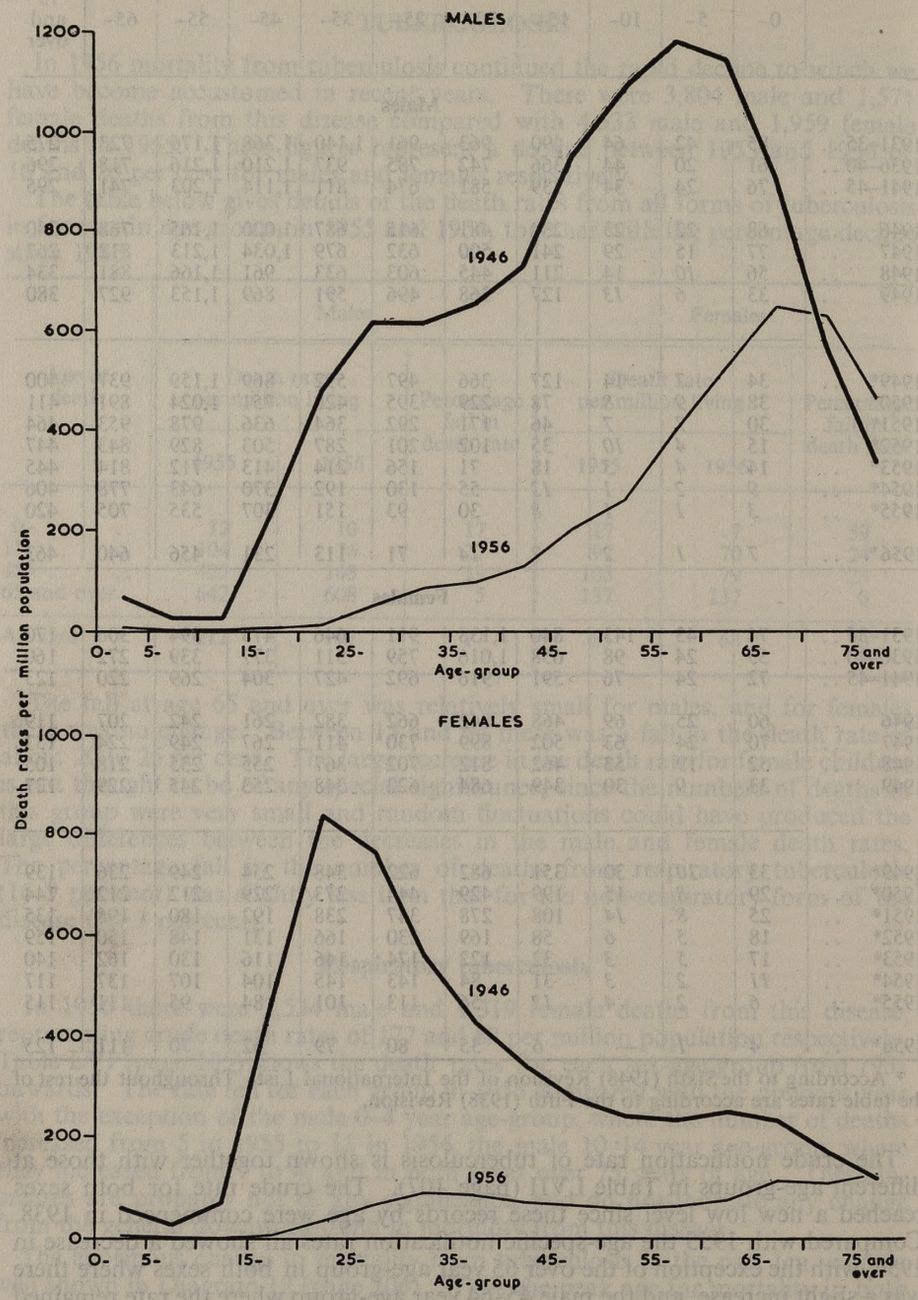
Table LVI.—Tuberculosis of the respiratory system : Death rates per million living by sex and age, 1931 to 1956, England and Wales

	0–	5–	10–	15–	20–	25–	35–	45–	55–	65–	75 and over
Males											
1931–35 ..	85	42	64	490	963	961	1,140	1,368	1,176	723	275
1936–40 ..	61	20	44	366	742	785	937	1,210	1,216	718	296
1941–45 ..	76	24	34	339	581	674	811	1,114	1,203	741	295
1946 ..	68	22	23	239	481	615	687	1,020	1,165	768	340
1947 ..	77	15	29	241	500	632	679	1,034	1,213	812	267
1948 ..	56	*10*	14	211	445	603	633	961	1,166	881	334
1949 ..	33	*6*	*13*	127	368	496	591	869	1,153	927	380
1949* ..	34	*7*	14	127	366	497	592	869	1,159	937	400
1950* ..	38	*9*	*8*	78	229	395	428	751	1,024	891	411
1951* ..	30	*7*	*7*	46	171	292	364	636	978	953	464
1952* ..	15	*4*	*10*	35	102	201	287	503	829	843	447
1953* ..	14	*4*	*3*	18	71	156	214	413	712	814	445
1954* ..	*9*	*2*	*1*	*13*	55	130	192	370	643	778	406
1955* ..	*3*	*1*	*1*	*8*	30	93	151	307	535	705	420
1956* ..	*7*	*1*	*2*	*7*	*14*	71	113	231	456	640	463
Females											
1931–35 ..	74	43	143	840	1,138	911	646	475	394	306	170
1936–40 ..	55	24	98	658	1,016	759	511	377	339	272	160
1941–45 ..	72	24	76	591	916	692	427	304	269	220	123
1946 ..	60	25	69	468	842	662	382	261	242	207	119
1947 ..	70	24	63	502	899	730	411	267	249	224	133
1948 ..	52	19	53	462	812	702	367	255	235	218	105
1949 ..	33	*9*	30	349	684	622	348	253	245	229	127
1949* ..	33	*10*	30	351	682	622	348	254	249	236	139
1950* ..	29	*8*	15	199	429	444	273	229	212	212	144
1951* ..	25	*8*	*14*	108	278	347	238	192	180	198	135
1952* ..	18	*5*	*6*	58	169	230	166	131	148	150	159
1953* ..	17	*5*	*3*	32	122	174	146	116	130	162	140
1954* ..	*11*	*2*	*3*	31	84	143	145	104	107	137	117
1955* ..	*6*	*2*	*4*	*12*	56	113	101	84	95	111	115
1956* ..	*4*	*1*	—	*6*	35	80	79	62	70	111	125

* According to the Sixth (1948) Revision of the International List. Throughout the rest of the table rates are according to the Fifth (1938) Revision.

The crude notification rate of tuberculosis is shown together with those at different age-groups in Table LVII (page 107). The crude rate for both sexes reached a new low level since these records by age were commenced in 1938. Compared with 1955 the age-specific notification rates all showed a decrease in 1956, with the exception of the over 65 year age-group in both sexes where there was a slight increase, and the male 45–64 year age-group where the rate remained the same. The fact that the crude notification rate was 60 per cent higher in males than in females was due entirely to the higher notification rate above 35 years of age. Under 25 years of age the female rate was slightly higher than the male. When compared with the position in 1946, the notification rate was

Diagram I2



Respiratory tuberculosis : Death rates per million living by sex and age, 1946 and 1956, England and Wales.

Table LVII.—Tuberculosis of the respiratory system : Notification rates per 100,000 living by sex and age, 1938 to 1956, England and Wales

	All ages	0–	5–	15–	25–	35–	45–	65 and over
Males								
1938	108	20	42	141	137	136	136	52
1939	98	17	32	132	124	124	125	46
1940	104	17	29	145	146	128	123	43
1941	115	20	33	154	155	148	141	50
1942	117	22	38	165	148	153	142	49
1943	119	27	40	166	144	154	152	50
1944	122	30	41	180	158	142	149	56
1945	118	32	40	178	160	135	142	53
1946	119	32	46	179	174	125	138	54
1947	118	40	53	193	163	116	137	56
1948	117	44	51	215	161	117	139	64
1949	119	46	49	180	159	122	146	68
1950	111	53	49	159	154	107	135	67
1951	115	53	48	170	156	117	141	72
1952	112	52	51	165	147	116	135	77
1953	110	49	49	155	133	114	139	85
1954	100	41	40	143	125	106	126	82
1955	92	36	34	125	110	96	121	81
1956* ..	88	29	28	115	101	92	121	87
Females								
1938	77	18	42	175	129	72	42	19
1939	71	15	33	166	116	68	37	18
1940	70	17	30	168	120	66	35	16
1941	76	19	33	185	126	69	41	19
1942	78	20	34	204	130	70	37	18
1943	83	26	40	209	142	73	40	18
1944	86	26	40	227	150	75	38	16
1945	81	26	41	223	140	69	34	16
1946	80	28	49	213	141	65	35	16
1947	83	33	51	235	146	66	35	17
1948	86	46	58	244	151	68	35	17
1949	85	44	53	238	155	71	35	17
1950	82	43	52	238	152	69	31	16
1951	81	50	52	229	149	68	33	16
1952	80	49	53	216	148	71	35	16
1953	77	45	52	201	141	73	34	18
1954	68	37	44	187	124	63	30	17
1955	60	35	38	156	112	59	30	17
1956* ..	55	30	31	139	101	57	29	18

* Notifications of respiratory tuberculosis used in this and subsequent tables for 1956 are those returned to the General Register Office and not, as in previous years, those returned to the Ministry of Health. The numbers returned to the General Register Office were 18,927 males and 12,665 females, and to the Ministry of Health 18,801 males and 12,541 females. Cases of unstated age are omitted for this year ; these numbered 67 males and 43 females.

lower for each sex-age group with the exception of females under 5 and both sexes of 65 years of age and over. It is almost certain now that a real decline in the incidence of tuberculous infection has set in, except perhaps in the oldest age-group. Improved diagnosis and case-reporting caused an increase in the notification rates in the post-war years. Now the notification rates are nearly all taking a downward turn, and all the evidence points to a real decrease in incidence. Nevertheless, much remains to be done before tuberculosis is conquered in this country. This has been made abundantly clear in a recent publication of the General Register Office*.

Non-respiratory tuberculosis

In 1956 the number of deaths from non-respiratory forms of tuberculosis was over 20 per cent below that for 1955 ; in all, 522 deaths were assigned to this cause, 270 male and 252 female. These represented crude death rates of 13 per million living for males and 11 per million for females. Table LVIII (below) shows comparative mortality indices (C.M.Is.) for various sites of tuberculosis. The mortality from tuberculosis of the meninges and central nervous system was about 5 per cent of that for 1938 for males and 6 per cent for females.

Table LVIII.—Tuberculosis : Comparative mortality indices for various sites, 1931 to 1956, England and Wales

	All forms		Respiratory		Meninges and C.N.S.		Intestines, peritoneum, etc.		Bones and joints		Other forms	
	M	F	M	F	M	F	M	F	M	F	M	F
1931 ..	**1·39**	**1·47**	1·38	1·47	1·44	1·39	1·75	1·91	1·53	1·72	1·24	1·23
1932 ..	**1·30**	**1·38**	1·27	1·36	1·38	1·28	1·78	1·65	1·45	1·88	1·28	1·34
1933 ..	**1·29**	**1·34**	1·29	1·35	1·21	1·18	1·50	1·72	1·46	1·52	1·19	1·10
1934 ..	**1·20**	**1·24**	1·19	1·24	1·22	1·22	1·34	1·45	1·41	1·56	1·07	1·12
1935 ..	**1·13**	**1·16**	1·13	1·18	1·10	1·01	1·23	1·31	1·29	1·39	0·97	0·98
1936 ..	**1·09**	**1·10**	1·09	1·11	1·06	1·00	1·08	1·23	1·21	1·33	1·02	0·95
1937 ..	**1·08**	**1·12**	1·08	1·12	1·04	1·02	1·19	1·09	1·12	1·24	1·04	1·12
1938 ..	**1·00**	**1·00**	1·00	1·00	1·00	1·00	1·00	1·00	1·00	1·00	1·00	1·00
1939 ..	**1·01**	**0·99**	1·02	1·00	0·92	0·93	0·96	0·92	1·05	1·14	0·98	0·93
1940 ..	**1·18**	**1·08**	1·22	1·09	1·06	1·07	1·09	1·05	1·10	0·99	0·92	1·05
1941 ..	**1·28**	**1·11**	1·36	1·09	1·42	1·37	1·27	1·00	1·03	1·11	1·32	1·12
1942 ..	**1·19**	**0·99**	1·27	0·97	1·20	1·13	1·27	1·08	1·30	1·06	1·13	0·99
1943 ..	**1·26**	**0·98**	1·33	0·96	1·13	1·14	1·02	0·96	1·22	0·99	1·14	0·98
1944 ..	**1·21**	**0·92**	1·27	0·91	1·05	1·02	0·97	0·81	1·05	0·94	1·11	1·00
1945 ..	**1·17**	**0·92**	1·23	0·91	1·01	1·04	0·93	0·71	1·01	0·81	1·08	0·92
1946 ..	**0·94**	**0·86**	0·97	0·86	0·88	0·89	0·69	0·53	0·69	0·80	0·81	0·86
1947 ..	**0·90**	**0·89**	0·93	0·92	0·81	0·81	0·56	0·62	0·58	0·66	0·83	0·86
1948 ..	**0·83**	**0·82**	0·87	0·85	0·64	0·70	0·45	0·51	0·54	0·65	0·70	0·68
1949 ..	**0·76**	**0·72**	0·80	0·77	0·55	0·56	0·39	0·37	0·39	0·48	0·64	0·49
1950 ..	**0·62**	**0·55**	0·66	0·58	0·42	0·48	0·23	0·25	0·38	0·39	0·47	0·44
1951 ..	**0·55**	**0·45**	0·58	0·46	0·43	0·46	0·21	0·24	0·29	0·35	0·43	0·39
1952 ..	**0·44**	**0·31**	0·47	0·32	0·26	0·26	0·17	0·16	0·28	0·26	0·37	0·32
1953 ..	**0·37**	**0·26**	0·39	0·27	0·18	0·18	0·15	0·14	0·17	0·26	0·31	0·31
1954 ..	**0·33**	**0·22**	0·36	0·23	0·10	0·10	0·10	0·14	0·19	0·24	0·35	0·29
1955 ..	**0·27**	**0·17**	0·30	0·18	0·07	0·07	0·11	0·10	0·16	0·16	0·27	0·25
1956 ..	**0·23**	**0·14**	0·25	0·14	0·04	0·06	0·08	0·08	0·12	0·13	0·21	0·23

* Logan, W. P. D. and Benjamin, B. (1957)—*Studies on Medical and Population Subjects No. 10*, Tuberculosis Statistics for England and Wales 1938–1955. H.M.S.O., price 4*s.* net.

Reductions almost as great have taken place in the mortality from abdominal tuberculosis. The mortality from tuberculosis of bones and joints was about 12 per cent of that for 1938. With other non-respiratory forms the reduction has been less ; in 1956 the mortality was just over 20 per cent of that in 1938. By comparison with the respiratory form of the disease, the percentage reduction has been greater in all non-respiratory types except the female mortality from " other forms " of non-respiratory tuberculosis.

Table LIX (below) shows the mortality rates by sex and age from tuberculosis of the meninges and central nervous system. The rates for the meningeal form are for the first time all based on less than 20 deaths. There were in fact

Table LIX.—Tuberculosis of the meninges and central nervous system, and other non-respiratory tuberculosis : Death rates per million living by sex and age, 1931 to 1956, England and Wales

	Tuberculosis of meninges and central nervous system						Other non-respiratory tuberculosis					
	0–	5–	10–	15–	25–54 E.A.D.R.	55 and over	0–	5–	10–	15–	25–54 E.A.D.R.	55 and over
	Males						Males					
1931–35	414	123	66	49	13	3	219	71	61	105	71	75
1936 ..	313	129	60	42	11	3	152	52	42	92	66	61
1937 ..	319	91	66	42	13	2	168	55	43	79	71	60
1938 ..	297	96	57	42	13	3	156	45	39	87	61	52
1939 ..	284	90	52	38	12	4	125	53	34	89	63	60
1940 ..	300	96	55	48	13	*3*	146	41	35	89	65	62
1941 ..	402	136	67	55	14	*4*	188	46	43	91	60	59
1942 ..	321	107	67	53	14	*2*	134	50	46	84	65	59
1943 ..	288	110	55	50	12	5	134	42	36	73	56	54
1944 ..	273	102	62	51	12	*2*	109	34	34	67	51	59
1945 ..	266	100	65	47	11	*2*	107	38	35	67	53	49
1946 ..	222	86	72	42	11	*3*	87	21	27	51	50	43
1947 ..	215	83	53	39	11	*4*	92	33	25	46	45	44
1948 ..	179	62	33	30	9	*4*	57	25	16	41	41	44
1949 ..	153	54	25	26	7	*4*	34	15	14	38	37	38
1950 ..	103	40	24	20	8	*4*	24	*8*	*12*	25	28	38
1951 ..	109	37	22	19	7	5	17	*5*	*6*	19	26	34
1952 ..	67	16	14	13	*5*	*4*	19	*1*	*6*	14	20	38
1953 ..	46	*10*	*8*	10	*3*	*2*	12	*3*	*6*	7	17	30
1954 ..	22	*4*	*5*	*4*	*3*	*1*	13	*3*	*2*	11	17	31
1955 ..	14	*5*	*3*	*3*	*1*	*2*	*8*	*2*	*1*	9	16	25
1956 ..	*10*	*3*	*3*	*2*	*1*	*1*	*4*	*1*	*2*	*3*	12	24
	Females						Females					
1931–35	356	125	73	48	10	2	160	59	50	84	58	62
1936 ..	283	98	58	47	9	2	129	37	38	66	51	45
1937 ..	291	89	61	50	9	1	132	46	43	72	48	52
1938 ..	300	100	60	40	8	2	112	40	36	73	45	42
1939 ..	252	77	66	47	9	2	102	38	32	69	41	40
1940 ..	278	96	71	61	9	*2*	118	34	26	80	50	40
1941 ..	370	138	80	70	11	*2*	141	50	34	83	42	48
1942 ..	290	101	69	64	12	*1*	92	30	44	79	49	42
1943 ..	277	106	63	72	11	*3*	101	32	34	74	42	46
1944 ..	234	95	78	58	10	*4*	86	33	26	67	42	44
1945 ..	246	107	71	60	10	*2*	84	29	41	55	35	42
1946 ..	199	97	67	52	9	*2*	64	28	22	53	34	37
1947 ..	184	78	55	52	9	*2*	65	26	29	57	34	34
1948 ..	166	53	54	44	8	*3*	56	20	15	39	30	34
1949 ..	126	45	35	33	8	*2*	33	*10*	*7*	26	24	27
1950 ..	116	39	22	31	*5*	*3*	20	*9*	*5*	22	19	27
1951 ..	102	33	35	30	*6*	*1*	15	*4*	*6*	14	18	29
1952 ..	57	20	17	16	*4*	*1*	*10*	*4*	*4*	9	12	25
1953 ..	48	13	*6*	9	*3*	*1*	16	*2*	*1*	9	13	22
1954 ..	18	*6*	*3*	8	*2*	*1*	*4*	*3*	*5*	7	12	23
1955 ..	17	*6*	*2*	*2*	*2*	*1*	*11*	*3*	*3*	*3*	9	19
1956 ..	*9*	*2*	*4*	*5*	*1*	*1*	*2*	—	*1*	*3*	10	16

Rates have been adjusted to the 1948 method of classification throughout

only 91 deaths at all ages from this disease in 1956, which, when compared with 1,587 in 1946, gives a good indication of the tremendous progress made in the eradication of the disease.

Table LIX also gives details of mortality from other non-repiratory tuberculosis by sex and age. Except for an insignificant rise in the death rate of males aged 10–14 and in the equivalent average death rate of females aged 25–54, the rates continue the downward trend of recent years. As the number of deaths diminishes chance fluctuations will play an increasingly larger part and small increases of the type described above must be expected. While they must be watched lest they conceal a real trend, no alarm need be occasioned by them.

Notification rates for non-respiratory tuberculosis are shown by sex and age in Table LX (below). The downward trend was continued in 1956 in all sex-age groups except the highest.

Geographical and urban and rural variations in tuberculosis rates

Table LXI (page 111) shows standardised mortality ratios and standardised notification ratios (calculated in a similar manner) for standard regions, conurbations and urban and rural aggregates in England and Wales. While regional S.M.Rs. are probably a fairly accurate indication of mortality from the disease, notification rates do not necessarily indicate the relative morbidity, as improvements in local case-finding schemes may result in increased notification without there being any corresponding real increase in morbidity.

For respiratory tuberculosis there was a fall in both mortality and notification from the highly urbanised to the rural communities, although the conurbations did not necessarily have higher rates than the urban areas of populations of 100,000 and over. Among the individual regions, Wales, Midland, Northern and North Western returned consistently high ratios for both mortality and notifications, while the South Western, Southern, North Midland and Eastern regions returned consistently low ratios. In the London and South Eastern region there was low mortality but high notification ratios, suggesting an efficient case-finding service which not only detected more cases but did so at an earlier stage in the disease when the chances of permanent cure were greatest.

Table LX.—Non-respiratory tuberculosis : Notification rates per million living by sex and age, 1938 to 1956, England and Wales

	Males					Females				
	All ages	0–	15–	25–	45 and over	All ages	0–	15–	25–	45 and over
1938–40	290	744	341	151	72	264	641	403	172	61
1941–45	269	698	326	148	64	261	632	413	178	63
1946	217	569	250	123	53	210	518	334	149	47
1947	202	518	227	114	54	196	455	317	144	51
1948	197	505	243	99	53	199	473	333	138	46
1949	171	423	211	93	50	174	399	304	127	40
1950	151	350	186	93	48	164	343	288	139	39
1951	149	327	196	98	48	159	314	300	131	46
1952	135	275	196	91	50	146	272	242	135	54
1953	122	233	163	85	59	133	224	240	129	51
1954	109	192	149	93	48	133	199	245	140	56
1955	96	145	154	85	48	109	144	203	126	48
1956	87	121	131	83	49	98	113	188	118	49

Table LXI.—Respiratory tuberculosis* : Standardised mortality ratios and standardised notification ratios, by sex, in standard regions, conurbations and urban and rural aggregates, 1956, England and Wales

	Respiratory tuberculosis			
	Males		Females	
	S.M.R.	S.N.R.	S.M.R.	S.N.R.
ENGLAND AND WALES	**100**	**100**	**100**	**100**
Regions and conurbations :				
Northern	**112**	**120**	**110**	**131**
Tyneside conurbation	124	181	133	177
Remainder of Northern	108	99	102	114
East and West Ridings	**111**	**91**	**109**	**92**
West Yorkshire conurbation	89	99	110	91
Remainder of East and West Ridings	126	85	108	92
North Western	**119**	**100**	**124**	**104**
South East Lancashire conurbation	120	92	113	82
Merseyside conurbation	167	154	168	171
Remainder of North Western	97	79	111	85
North Midland	**78**	**79**	**94**	**80**
Midland	**122**	**112**	**105**	**108**
West Midlands conurbation	134	126	94	118
Remainder of Midland	111	98	117	98
Eastern	**63**	**67**	**63**	**67**
London and South Eastern	**95**	**114**	**88**	**102**
Greater London	105	126	90	110
Remainder of South Eastern	67	76	83	76
Southern	**76**	**92**	**86**	**95**
South Western	**84**	**85**	**80**	**90**
Wales (including Monmouthshire)	**130**	**113**	**156**	**128**
Wales I (South East)	123	117	163	127
Wales II (Remainder)	149	102	140	129
Urban/rural aggregates :				
Conurbations	115	123	104	114
Areas outside conurbations :				
Urban areas with populations of 100,000 and over	121	118	114	113
Urban areas with populations of 50,000 and under 100,000	97	99	106	99
Urban areas with populations under 50,000	89	84	91	89
Rural districts	73	64	91	75

* See footnote to Table LVII.

Table LXII.—Tuberculosis of the respiratory system : Death rates per million living by sex and age and notifications* per 100 deaths in standard regions and urban and rural aggregates within regional groups, 1956, England and Wales

	Males							Females							Persons	
	All ages	0–	5–	15–	25–	45–	65 and over	All ages	0–	5–	15–	25–	45–	65 and over	All ages	Notifications per 100 deaths
ENGLAND AND WALES	164	*7*	*1*	10	92	324	583	57	*4*	*0*	21	79	65	116	109	651
Urban and rural aggregates :																
Conurbations	187	*11*	*2*	*17*	99	343	761	59	*5*	—	23	78	68	127	120	705
Areas outside conurbations :																
Urban areas with populations of 100,000 and over	197	*4*	*2*	*6*	116	406	668	64	—	*2*	*22*	90	91	104	128	641
Urban areas with populations of 50,000 and under 100,000	162	—	—	*10*	86	352	496	61	—	—	*23*	86	67	123	109	637
Urban areas with populations under 50,000	150	—	*3*	*9*	89	301	467	52	*3*	—	*20*	83	48	107	99	611
Rural districts	118	9	—	6	66	246	414	51	*6*	—	*15*	67	62	101	85	574
NORTH OF ENGLAND																
Regions :																
Northern	177	—	—	*28*	129	385	493	60	*8*	—	*19*	98	73	105	117	759
East and West Ridings	184	—	—	*13*	109	349	654	61	—	—	*19*	86	71	131	120	537
North Western	196	*16*	*2*	*5*	108	392	676	70	*4*	—	*32*	110	77	121	130	547
Conurbations :																
Tyneside	198	—	—	*60*	*161*	444	389	73	—	—	*34*	*131*	*73*	*120*	133	961
West Yorkshire	153	—	—	*12*	91	282	520	64	—	—	*10*	84	88	*113*	106	637
South East Lancashire	199	*11*	—	*8*	134	367	686	65	—	—	*28*	88	72	138	128	483
Merseyside	248	*48*	*8*	*11*	114	503	1,176	90	*17*	—	*40*	152	*98*	*163*	164	688
Areas outside conurbations :																
Urban areas with populations of 100,000 and over	234	—	—	*10*	135	495	755	67	—	—	*9*	98	86	*133*	146	
Urban areas with populations of 50,000 and under 100,000	185	—	—	*33*	*88*	417	508	65	—	—	*43*	*79*	*80*	*135*	123	
Urban areas with populations under 50,000	166	—	—	*6*	102	315	571	57	—	—	*28*	101	*42*	119	110	
Rural districts	148	—	—	*7*	97	328	470	55	*15*	—	*18*	90	*84*	*54*	102	
MIDLANDS AND EASTERN																
Regions :																
North Midland	127	—	*4*	*5*	66	262	451	52	*8*	*4*	*9*	78	63	102	89	631
Midland	189	*6*	*3*	*25*	101	417	672	58	—	—	*51*	81	78	81	122	642
Eastern	104	—	—	*4*	56	213	357	36	—	—	*20*	*37*	48	80	69	684
Conurbations :																
West Midlands	206	—	*5*	*55*	103	477	667	51	—	—	*60*	74	*63*	*61*	126	691
Areas outside conurbations :																
Urban areas with populations of 100,000 and over	189	*13*	*6*	—	97	374	743	63	—	*7*	*24*	69	110	*91*	123	
Urban areas with populations of 50,000 and under 100,000	152	—	—	—	*55*	347	592	50	—	—	*14*	*73*	*77*	*69*	99	
Urban areas with populations under 50,000	120	—	—	*6*	73	253	362	46	—	—	*28*	65	*48*	*94*	82	
Rural districts	96	—	—	*4*	59	183	371	44	*9*	—	*16*	61	*45*	102	70	
GREATER LONDON	174	*10*	—	*5*	82	281	837	52	*7*	—	*10*	59	59	137	110	771
SOUTH OF ENGLAND																
Regions :																
Remainder of South Eastern	119	—	—	*13*	87	233	305	50	—	—	*6*	58	*42*	133	82	634
Southern	119	*9*	—	*8*	69	241	449	50	—	—	*12*	69	56	107	84	792
South Western	141	*9*	—	—	97	279	433	47	*9*	—	*6*	64	*34*	129	92	665
Urban areas with populations of 100,000 and over	150	—	—	*10*	115	286	477	57	—	—	*11*	*88*	*64*	*108*	102	
Urban areas with populations of 50,000 and under 100,000	152	—	—	—	126	300	397	64	—	—	*15*	*91*	*43*	*156*	105	
Urban areas with populations under 50,000	134	—	—	*11*	95	260	385	40	*10*	—	*6*	49	*36*	103	84	
Rural districts	100	*18*	—	*4*	*44*	210	364	46	—	—	*6*	55	*39*	141	73	
WALES (including Monmouthshire)	219	*10*	*10*	*12*	98	471	688	87	—	—	*36*	142	117	*112*	152	559
Wales I (South East)	205	—	*13*	*9*	107	427	648	90	—	—	*42*	165	123	*64*	146	593
Wales II (Remainder)	255	*36*	—	*20*	*73*	584	775	81	—	—	*22*	*82*	*100*	*203*	165	485
Urban areas with populations of 100,000 and over	236	—	—	—	*126*	534	*704*	81	—	—	*72*	*135*	*109*	*52*	155	
Urban area with population of 50,000 and under 100,000	*104*	—	—	—	—	*133*	*606*	131	—	—	—	*361*	*122*	—	118	
Urban areas with populations under 50,000	224	—	*22*	*15*	*84*	483	712	89	—	—	*14*	173	*93*	*132*	155	
Rural districts	207	*35*	—	*18*	*101*	426	655	87	—	—	*43*	*86*	*157*	*135*	147	

* See footnote to Table LVII.

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Table LXIII.—Tuberculosis of the respiratory system : Notification rates* per 100,000 living, by sex and age for standard regions, 1956, England and Wales

Area	Males							Females							Persons
	All ages	0–	5–	15–	25–	45–	65 and over	All ages	0–	5–	15–	25–	45–	65 and over	All ages
ENGLAND AND WALES	88	29	28	115	97	121	87	55	30	31	139	79	29	18	71
Standard Regions :															
Northern	105	37	41	129	119	148	92	74	34	47	200	101	33	16	89
East and West Ridings ..	80	29	20	103	81	118	85	50	30	26	119	76	28	16	65
North Western	87	30	32	124	88	122	87	56	29	34	159	80	26	15	71
North Midland	69	21	27	98	74	93	66	44	18	28	117	65	20	*8*	56
Midland	97	51	40	138	100	132	86	61	58	39	152	76	29	18	79
Eastern	59	*13*	19	78	77	70	51	37	18	20	93	58	17	10	47
London and South Eastern	100	25	24	133	112	135	116	55	28	25	132	81	33	23	76
Southern	82	25	20	83	103	122	72	51	*19*	24	113	80	34	23	67
South Western	75	18	29	94	89	99	68	48	23	27	115	73	29	17	61
Wales (including Monmouthshire).. ..	100	38	38	134	99	143	88	70	32	49	185	92	38	22	85
Wales I (South East)..	103	42	34	152	102	147	89	71	33	48	183	93	40	19	87
Wales II (Remainder)	92	*25*	49	94	92	135	85	69	*27*	52	191	90	36	*29*	80

* See footnote to Table LVII.

Table LXII (page 112) shows death rates per million living from respiratory tuberculosis by sex and age in the regional groups in England and Wales. Deaths at the younger ages are now uncommon from this form of the disease, and it is only above the age of 25 that the urban-rural differences in mortality become apparent. Above that age they were generally present for all ages and both sexes although there were one or two exceptions. In Wales the urban-rural differences were not at all clear. This was probably due to the existence of the many industrial and mining communities in all types of administrative area contributing to high tuberculosis death rates.

Among the individual conurbations the high death rates in Merseyside, particularly among the older population, are immediately obvious.

Notification rates for respiratory tuberculosis by sex, age and region are shown in Table LXIII (page 114). It has already been explained above why notification rates cannot necessarily be taken as an accurate indication of regional morbidity. Among males, notification rates were generally high in the Northern, Midland, Wales (South East) and London and South Eastern regions, but among females the regions with high rates were the Northern and Wales (both parts). The highest age-specific notification rates were also to be found in the Northern and Welsh regions for females aged 15–24, where the rates approached 200 per 100,000 population.

Table LXIV.—Tuberculosis of the respiratory system : Ratio of deaths to 100 notifications* by sex and age in standard regions, 1956, England and Wales

Region	Ratio of deaths per 100 notifications							
	Males				Females			
	15–	25–	45–	65 and over	15–	25–	45–	65 and over
ENGLAND AND WALES ..	1	10	27	67	2	10	23	66
Standard Regions :								
Northern	*2*	11	26	53	*1*	10	22	67
East and West Ridings ..	*1*	13	29	77	*2*	11	26	80
North Western	*0*	12	32	78	*2*	14	30	82
North Midland	*0*	9	28	68	*1*	12	32	121
Midland	*2*	10	32	78	*3*	11	27	45
Eastern	*1*	7	30	69	*2*	*6*	29	83
London and South Eastern	*1*	7	20	58	*1*	7	17	60
Southern	*1*	7	20	63	*1*	9	17	46
South Western	—	11	28	64	*0*	9	*11*	78
Wales (including Monmouthshire)	*1*	10	33	79	*2*	15	30	50
Wales I (South East) ..	*1*	10	29	73	*2*	18	31	*33*
Wales II (Remainder)..	*2*	*8*	43	91	*1*	*9*	*28*	*71*

* See footnote to Table LVII.

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Table LXV.—Tuberculosis of the meninges and central nervous system, and other non-respiratory tuberculosis : Death rates per million living in standard regions, 1956, England and Wales

	Tuberculous meningitis						Other non-respiratory tuberculosis					
	Males			Females			Males			Females		
	0–	5–	15 and over	0–	5–	15 and over	0–	5–	15 and over	0–	5–	15 and over
ENGLAND AND WALES	*9*	*3*	*1*	*9*	*3*	2	*4*	*1*	13	*2*	*1*	11
Urban and rural aggregates :												
Conurbations	*5*	*2*	*1*	*10*	*2*	*2*	*3*	*1*	16	*3*	—	9
Areas outside conurbations :												
Urban areas with populations of 100,000 and over	*9*	*4*	*0*	*9*	*2*	*0*	*4*	*4*	15	*5*	—	11
Urban areas with populations of 50,000 and under 100,000	*23*	*4*	*1*	—	*4*	*2*	*8*	—	*12*	—	—	15
Urban areas with populations under 50,000	*16*	*3*	*1*	*6*	—	*1*	—	*3*	11	—	—	11
Rural Districts	*6*	*3*	—	*13*	*7*	*3*	*9*	—	12	—	*3*	12
Regions :												
Northern	*15*	*4*	*1*	*16*	—	*1*	—	—	*15*	*8*	—	*13*
East and West Ridings	*19*	—	*1*	*27*	*6*	*2*	*19*	—	18	*13*	—	12
North Western	*12*	*8*	*1*	*4*	*4*	*3*	*8*	*2*	14	—	—	10
North Midland	*7*	*4*	—	—	—	*2*	—	*7*	*6*	—	*4*	18
Midland	*11*	—	*1*	*6*	*3*	*1*	—	*3*	17	—	—	*7*
Eastern	—	—	—	—	*4*	*1*	—	—	*10*	—	—	*8*
London and South Eastern	*8*	—	*1*	*3*	*3*	*1*	—	—	13	—	—	10
Southern	*9*	*4*	—	—	—	*2*	*19*	*4*	*8*	—	—	*6*
South Western	*9*	*8*	—	*28*	*4*	*2*	—	—	*14*	—	*4*	*14*
Wales (including Monmouthshire)	—	*5*	—	*21*	—	*2*	—	—	*15*	—	—	*13*
Wales I (South East)	—	*7*	—	*14*	—	*3*	—	—	*7*	—	—	*12*
Wales II (Remainder)	—	—	—	*38*	—	—	—	—	*36*	—	—	*13*

Regional mortality rates for tuberculosis of the meninges and for other non-respiratory tuberculosis are shown in Table LXV (page 116). These rates are for the most part based on small numbers so that it is doubtful if many of the differences between individual regions are significant.

Mass miniature radiography statistics

The examination of large numbers of individuals for the presence of respiratory tuberculosis and other diseases of the chest was introduced in this country in 1943, and brief statistical accounts have been published annually in the Annual Report of the Chief Medical Officer of the Ministry of Health.

Since July, 1954, all Mass Miniature Radiography units have co-operated with the Ministry of Health and the General Register Office by sending to the last-named a return for all persons found on examination to have some significant abnormality, together with a 1 in 10 sample of the record cards of all persons examined during the month whether found to be normal or abnormal.

From the mass of detailed information available it is hoped to produce a report covering three years experience (1955–57) in which such aspects as type of abnormality (and extent if tuberculous), occupation, record of previous mass radiography, history of tuberculosis, area of residence, etc., will all be fully analysed. In view of the proposed publication, data in this commentary are limited to a brief summary of the position regarding respiratory tuberculosis in 1955 and 1956.

Tables LXVI, LXVII, LXVIII and LXIX (pages 118 to 125) show, for 1955 and 1956 respectively, the number of examinations made and the number of cases of tuberculosis found by mass miniature radiography by sex and age.

There were 3,617,550 examinations in 1956, which was 141,840 more than in 1955. The number of cases of tuberculosis found was, however, slightly less. In 1956 there were 7,240* cases found, a rate of 2·0 per 1,000 examinations, compared with 7,564 found in 1955, a rate of 2·2 per 1,000.

This fall in the diagnosis rate has taken place in all age-groups and in both sexes. Among females it has also occurred in all numerically important categories of persons examined. Among males, however, there have been some small increases in the individual categories of examinees, although the numbers involved in each case were very small.

The highest incidence of cases has been found, not unexpectedly, among persons referred by general practitioners.

In 1956, although referrals of this type constituted only 5·6 per cent of the examinations, they yielded 28·0 per cent of all previously unknown cases of tuberculosis diagnosed by M.M.R. The rate for cases found in this group was lower in 1956 than in 1955, and is generally spread over all ages and both sexes.

After general practitioner's referred cases, the next highest diagnosis rate was found among persons in prisons, borstals, etc., 86 male cases being found in 1956, a rate of 6·8 per 1,000. It is encouraging to note that with an increase in the number of prisoners, etc., X-rayed in 1956 the rate of new cases diagnosed was almost half that of 1955.

General public volunteers and persons in factories, offices, etc., together produced 55·8 per cent of all cases diagnosed by M.M.R. in 1956. Despite this the rates per 1,000 examinations were among the lowest of all types of examinee.

The general picture presented by these statistics of mass miniature radiography in 1956 helps to confirm that given by mortality and notification statistics—one of decreasing mortality and falling incidence, which nevertheless leaves a long way to go before the disease is eradicated.

* Tables LXVIII and LXIX do not include 368 cases (259 male, 109 female) known to be tuberculous prior to the examination. They have been included in the total of 7,240 for purposes of comparability with 1955 data.

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Table LXVI.—Numbers of examinations made among males and cases of respiratory tuberculosis requiring treatment or close clinic supervision observed by mass radiography units, distinguishing age and category of person examined. Rates per 1,000 examinations, 1955, England and Wales

(The total numbers of examinations have been derived from a 10 per cent sample of record cards)

Category of persons examined		Males											
		Age-groups											
		All ages	Under 14	14	15–	20–	25–	35–	45–	55–	60–	65 and over	Not stated
Out-patients and in-patients of hospitals	Total number of examinations	7,390	100	10	390	450	1,260	1,390	1,810	750	490	740	—
	Number with respiratory tuberculosis requiring treatment or close supervision	21	—	—	—	1	5	3	2	3	3	4	—
	Rate	2·8	—	—	—	2·2	4·0	2·2	1·1	4·0	6·1	5·4	—
H.M. Forces recruits	Total number of examinations	162,990	—	—	122,260	39,280	1,360	50	20	—	—	—	20
	Number with respiratory tuberculosis requiring treatment or close supervision	251	—	—	177	71	3	—	—	—	—	—	—
	Rate	1·5	—	—	1·4	1·8	2·2	—	—	—	—	—	—
Persons referred by general practitioners	Total number of examinations	87,430	5,430	940	6,340	8,560	18,080	15,140	15,880	6,550	5,150	5,350	10
	Number with respiratory tuberculosis requiring treatment or close supervision	1,185	22	7	69	101	241	212	254	113	89	77	—
	Rate	13·6	4·1	7·4	10·9	11·8	13·3	14·0	16·0	17·3	17·3	14·4	—
School children (School groups)	Total number of examinations	182,240	61,980	63,040	57,210	—	—	—	—	—	—	—	10
	Number with respiratory tuberculosis requiring treatment or close supervision	94	31	29	34	—	—	—	—	—	—	—	—
	Rate	0·5	0·5	0·5	0·6	—	—	—	—	—	—	—	—
Contacts	Total number of examinations	37,420	9,420	2,040	5,260	2,650	6,690	5,030	3,980	1,150	610	580	10
	Number with respiratory tuberculosis requiring treatment or close supervision	103	11	3	18	5	23	13	22		2	2	—
	Rate	2·8	1·2	1·5	3·4	1·9	3·4	2·6	5·5	3·5	3·3	3·4	—
Persons covered by special surveys	Total number of examinations	27,760	5,030	800	1,950	1,820	5,330	4,690	4,300	1,680	1,170	980	10
	Number with respiratory tuberculosis requiring treatment or close supervision	55	2	3	7	2	8	8	11	5	3	6	—
	Rate	2·0	0·4	3·8	3·6	1·1	1·5	1·7	2·6	3·0	2·6	6·1	—
Persons in factories/ Offices (General surveys)	Total number of examinations	997,890	—	—	82,490	106,120	273,750	234,310	189,420	61,720	36,110	13,790	180
	Number with respiratory tuberculosis requiring treatment or close supervision	1,556	—	—	98	142	434	322	323	131	75	30	1
	Rate	1·6	—	—	1·2	1·3	1·6	1·4	1·7	2·1	2·1	2·2	5·6
Persons in prisons, Borstals, etc.	Total number of examinations	6,	140	210	1,480	900	1,210	640	480	170	150	750	—
	Number with respiratory tuberculosis requiring treatment or close supervision	76	1	—	3	3	8	9	19	9	7	17	—
	Rate	12·4	7·1	—	2·0	3·3	6·6	14·1	39·6	52·9	46·6	22·7	—
General public volunteers	Total number of examinations	390,660	8,160	2,670	25,980	35,380	103,040	83,330	69,640	23,870	15,990	22,560	40
	Number with respiratory tuberculosis requiring treatment or close supervision	945	2	4	50	90	200	197	179	78	67	78	—
	Rate	2·4	0·2	1·5	1·9	2·5	1·9	2·4	2·6	3·3	4·2	3·5	—
Ante-natal cases	Total number of examinations	—	—	—	—	—	—	—	—	—	—	—	—
	Number with respiratory tuberculosis requiring treatment or close supervision	—	—	—	—	—	—	—	—	—	—	—	—
	Rate	—	—	—	—	—	—	—	—	—	—	—	—
Persons residing in or employed at mental hospitals and mental institutions	Total number of examinations	29,800	800	80	970	1,690	4,760	6,140	6,500	2,620	1,880	3,920	440
	Number with respiratory tuberculosis requiring treatment or close supervision	151	4	—	—	6	22	31	26	16	13	30	3
	Rate	5·1	5·0	—	—	3·6	4·6	5·0	4·0	6·1	6·9	7·7	6·8
All groups	Total number of examinations	1,929,710	91,060	69,790	304,330	196,850	415,480	350,720	292,030	98,510	61,550	48,670	720
	Number with respiratory tuberculosis requiring treatment or close supervision	4,437	73	46	456	421	944	795	836	359	259	244	4
	Rate	2·3	0·8	0·7	1·5	2·1	2·3	2·3	2·9	3·6	4·2	5·0	5·6

Table LXVII.—Numbers of examinations made among females and cases of respiratory tuberculosis requiring treatment or close clinic supervision observed by mass radiography units, distinguishing age and category of person examined. Rates per 1,000 examinations, 1955, England and Wales

(The total numbers of examinations have been derived from a 10 per cent sample of record cards)

Category of persons examined		Females											
		Age-groups											
		All ages	Under 14	14	15–	20–	25–	35–	45–	55–	60–	65 and over	Not stated
Out-patients and in-patients of hospitals	Total number of examinations	9,370	130	20	640	770	1,610	1,930	1,670	870	480	1,250	—
	Number with respiratory tuberculosis requiring treatment or close supervision	19	—	—	—	3	5	5	4	1	1	—	—
	Rate	2·0	—	—	—	3·9	3·1	2·6	2·4	1·1	2·1	—	—
H.M. Forces recruits	Total number of examinations	60	—	—	20	—	40	—	—	—	—	—	—
	Number with respiratory tuberculosis requiring treatment or close supervision	—	—	—	—	—	—	—	—	—	—	—	—
	Rate	—	—	—	—	—	—	—	—	—	—	—	—
Persons referred by general practitioners	Total number of examinations	85,920	5,220	860	10,120	11,670	21,190	15,380	10,990	4,050	2,940	3,490	10
	Number with respiratory tuberculosis requiring treatment or close supervision	785	19	5	97	175	230	142	61	19	15	22	—
	Rate	9·1	3·6	5·8	9·6	15·0	10·9	9·2	5·6	4·7	5·1	6·3	—
School children (School groups)	Total number of examinations	170,930	59,690	61,370	49,860	—	—	—	—	—	—	—	10
	Number with respiratory tuberculosis requiring treatment or close supervision	165	55	69	41	—	—	—	—	—	—	—	—
	Rate	1·0	0·9	1·1	0·8	—	—	—	—	—	—	—	—
Contacts	Total number of examinations	27,660	6,880	1,500	4,290	2,900	4,410	3,300	2,910	720	330	410	10
	Number with respiratory tuberculosis requiring treatment or close supervision	116	16	3	23	18	29	13	10	1	2	1	—
	Rate	4·2	2·3	2·0	5·4	6·2	6·6	3·9	3·4	1·4	6·1	2·4	—
Persons covered by special surveys	Total number of examinations	26,640	5,010	780	2,670	2,210	4,530	4,170	3,980	1,490	830	960	10
	Number with respiratory tuberculosis requiring treatment or close supervision	52	5	1	9	9	15	9	3	1	—	—	—
	Rate	2·0	1·0	1·3	3·4	4·1	3·3	2·2	0·8	0·7	—	—	—
Persons in factories/ Offices (General surveys)	Total number of examinations	598,080	—	—	147,080	125,370	122,770	97,930	77,680	18,950	6,430	1,840	30
	Number with respiratory tuberculosis requiring treatment or close supervision	903	—	—	255	258	207	108	60	9	3	3	—
	Rate	1·5	—	—	1·7	2·1	1·7	1·1	0·8	0·5	0·5	1·6	—
Persons in prisons, Borstals, etc.	Total number of examinations	960	110	40	190	30	90	80	140	50	20	210	—
	Number with respiratory tuberculosis requiring treatment or close supervision	1	—	—	—	—	—	1	—	—	—	—	—
	Rate	1·0	—	—	—	—	—	12·5	—	—	—	—	—
General public volunteers	Total number of examinations	540,640	8,380	3,000	53,350	61,160	133,370	113,420	93,220	32,140	20,860	21,700	40
	Number with respiratory tuberculosis requiring treatment or close supervision	917	5	7	126	152	289	164	103	25	22	24	—
	Rate	1·7	0·6	2·3	2·4	2·5	2·2	1·4	1·1	0·8	1·1	1·1	—
Ante-natal cases	Total number of examinations	53,600	—	—	3,960	17,470	26,080	5,950	100	—	—	—	40
	Number with respiratory tuberculosis requiring treatment or close supervision	98	—	—	7	37	48	6	—	—	—	—	—
	Rate	1·8	—	—	1·8	2·1	1·8	1·0	—	—	—	—	—
Persons residing in or employed at mental hospitals and mental institutions	Total number of examinations	32,140	420	80	1,130	1,390	3,920	5,290	6,710	3,130	2,760	7,280	30
	Number with respiratory tuberculosis requiring treatment or close supervision	71	1	—	3	3	21	16	13	3	3	8	—
	Rate	2·2	2·4	—	2·7	2·2	5·4	3·0	1·9	1·0	1·1	1·1	—
All groups	Total number of examinations	1,546,000	85,840	67,650	273,310	222,970	318,010	247,450	197,400	61,400	34,650	37,140	180
	Number with respiratory tuberculosis requiring treatment or close supervision	3,127	101	85	561	655	844	464	254	59	46	58	—
	Rate	2·0	1·2	1·3	2·1	2·9	2·7	1·9	1·3	1·0	1·3	1·6	—

Table LXVIII.—Numbers of examinations made among males* and cases of respiratory tuberculosis requiring treatment or close clinic supervision observed by mass radiography units, distinguishing age and category of person examined. Rates per 1,000 examinations, 1956, England and Wales

(The total numbers of examinations have been derived from a 10 per cent sample of record cards)

Category of persons examined		Males											
		Age-groups											
		All ages	Under 14	14	15–	20–	25–	35–	45–	55–	60–	65 and over	Not stated
Out-patients and in-patients of hospitals	Total number of examinations	8,300	110	50	450	660	1,600	1,670	1,700	670	510	880	—
	Number with respiratory tuberculosis requiring treatment or close supervision	24	—	—	—	2	4	6	5	3	1	3	—
	Rate	2·9	—	—	—	3·0	2·5	3·6	2·9	4·5	2·0	3·4	—
H.M. Forces recruits	Total number of examinations	135,590	—	—	96,650	37,400	1,320	160	20	—	—	—	40
	Number with respiratory tuberculosis requiring treatment or close supervision	160	—	—	101	59	—	—	—	—	—	—	—
	Rate	1·2	—	—	1·0	1·6	—	—	—	—	—	—	—
Persons referred by general practitioners	Total number of examinations	101,570	5,040	730	7,070	9,770	19,740	18,350	19,170	8,040	6,830	6,760	70
	Number with respiratory tuberculosis requiring treatment or close supervision	1,209	15	2	77	106	208	217	265	113	102	103	1
	Rate	11·9	3·0	2·7	10·9	10·8	10·5	11·8	13·8	14·1	14·9	15·2	14·3
School children (School groups)	Total number of examinations	190,260	72,530	66,450	51,260	—	—	—	—	—	—	—	20
	Number with respiratory tuberculosis requiring treatment or close supervision	95	33	29	33	—	—	—	—	—	—	—	—
	Rate	0·5	0·5	0·4	0·6	—	—	—	—	—	—	—	—
Contacts	Total number of examinations	37,350	9,740	2,550	5,270	2,560	6,410	4,430	4,170	1,000	710	510	—
	Number with respiratory tuberculosis requiring treatment or close supervision	104	15	—	14	11	15	22	17	5	3	2	—
	Rate	2·8	1·5	—	2·7	4·3	2·3	5·0	4·1	5·0	4·2	3·9	—
Persons covered by special surveys	Total number of examinations	27,460	4,360	1,060	2,410	2,040	5,150	4,810	4,110	1,370	880	1,250	20
	Number with respiratory tuberculosis requiring treatment or close supervision	65	4	—	7	4	15	13	15	6	1	—	—
	Rate	2·4	0·9	—	2·9	2·0	2·9	2·7	3·6	4·4	1·1	—	—
Persons in factories/ Offices (General surveys)	Total number of examinations	1,042,050	—	—	86,120	114,500	275,960	249,620	195,920	66,830	38,570	14,220	310
	Number with respiratory tuberculosis requiring treatment or close supervision	1,499	—	—	86	142	390	355	313	104	77	30	2
	Rate	1·4	—	—	1·0	1·2	1·4	1·4	1·6	1·6	2·0	2·1	6·5
Persons in prisons, Borstals, etc.	Total number of examinations	12,630	80	130	2,090	1,910	3,360	2,110	1,350	460	290	850	—
	Number with respiratory tuberculosis requiring treatment or close supervision	86	—	—	2	2	12	17	20	10	15	8	—
	Rate	6·8	—	—	1·0	1·0	3·6	8·1	14·8	21·7	51·7	9·4	—
General public volunteers	Total number of examinations	412,390	11,480	2,770	29,560	35,620	101,910	89,710	74,930	25,180	17,090	24,000	140
	Number with respiratory tuberculosis requiring treatment or close supervision	842	5	—	41	77	186	169	179	79	49	57	—
	Rate	2·0	0·4	—	1·4	2·2	1·8	1·9	2·4	3·1	2·9	2·4	—
Ante-natal cases	Total number of examinations	—	—	—	—	—	—	—	—	—	—	—	—
	Number with respiratory tuberculosis requiring treatment or close supervision	—	—	—	—	—	—	—	—	—	—	—	—
	Rate	—	—	—	—	—	—	—	—	—	—	—	—
Persons residing in or employed at mental hospitals and mental institutions	Total number of examinations	33,560	780	210	1,280	2,010	5,420	7,130	7,100	3,230	2,340	4,050	10
	Number with respiratory tuberculosis requiring treatment or close supervision	99	2	—	4	6	23	24	17	10	5	8	—
	Rate	3·0	2·6	—	3·1	3·0	4·2	3·4	2·4	3·1	2·1	2·0	—
All groups	Total number of examinations	2,001,160	104,120	73,950	282,160	206,470	420,870	377,990	308,470	106,780	67,220	52,520	610
	Number with respiratory tuberculosis requiring treatment or close supervision	4,183	74	31	365	409	853	823	831	330	253	211	3
	Rate	2·1	0·7	0·4	1·3	2·0	2·0	2·2	2·7	3·1	3·8	4·0	4·9

* Cases known to be tuberculous before this examination are excluded from this tabulation.

Table LXIX.—Numbers of examinations made among females* and cases of respiratory tuberculosis requiring treatment or close clinic supervision observed by mass radiography units, distinguishing age and category of person examined. Rates per 1,000 examinations, 1956, England and Wales

(The total numbers of examinations have been derived from a 10 per cent sample of record cards)

Category of persons examined		Females											
		Age-groups											
		All ages	Under 14	14	15–	20–	25–	35–	45–	55–	60–	65 and over	Not stated
Out-patients and in-patients of hospitals	Total number of examinations	10,340	70	30	540	920	1,920	2,180	2,090	870	690	1,030	—
	Number with respiratory tuberculosis requiring treatment or close supervision	11	—	—	1	2	2	4	2	—	—	—	—
	Rate	1·1	—	—	1·9	2·2	1·0	1·8	1·0	—	—	—	—
H.M. Forces recruits	Total number of examinations	30	—	—	10	10	10	—	—	—	—	—	—
	Number with respiratory tuberculosis requiring treatment or close supervision	2	—	—	1	—	—	1	—	—	—	—	—
	Rate	66·7	—	—	100·0	—	—	—	—	—	—	—	—
Persons referred by general practitioners	Total number of examinations	99,280	5,400	830	10,940	13,890	24,470	18,070	13,020	5,180	3,380	4,000	40
	Number with respiratory tuberculosis requiring treatment or close supervision	718	18	3	126	129	216	97	79	15	16	19	—
	Rate	7·2	3·3	3·6	11·5	9·3	8·8	5·4	6·1	2·9	4·7	4·7	—
School children (School groups)	Total number of examinations	178,560	68,870	63,510	46,170	—	—	—	—	—	—	—	10
	Number with respiratory tuberculosis requiring treatment or close supervision	133	54	43	36	—	—	—	—	—	—	—	—
	Rate	0·8	0·8	0·7	0·8	—	—	—	—	—	—	—	—
Contacts	Total number of examinations	38,730	10,400	2,520	6,620	3,840	4,670	4,660	3,830	1,100	530	550	10
	Number with respiratory tuberculosis requiring treatment or close supervision	84	19	3	15	15	15	7	6	2	—	2	—
	Rate	2·2	1·8	1·2	2·3	3·9	3·2	1·5	1·6	1·8	—	3·6	—
Persons covered by special surveys	Total number of examinations	28,960	4,160	1,070	3,280	2,980	4,850	4,400	3,930	1,800	1,050	1,440	—
	Number with respiratory tuberculosis requiring treatment or close supervision	80	2	—	9	13	29	15	8	1	—	3	—
	Rate	2·8	0·5	—	2·7	4·4	6·0	3·4	2·0	0·6	—	2·1	—
Persons in factories/ Offices (General surveys)	Total number of examinations	605,590	—	—	148,110	125,870	122,030	99,590	79,440	21,020	6,600	2,770	160
	Number with respiratory tuberculosis requiring treatment or close supervision	734	—	—	193	220	175	88	46	8	4	—	—
	Rate	1·2	—	—	1·3	1·7	1·4	0·9	0·6	0·4	0·6	—	—
Persons in prisons, Borstals, etc.	Total number of examinations	1,720	40	110	130	70	140	240	220	40	70	600	60
	Number with respiratory tuberculosis requiring treatment or close supervision	4	—	—	—	—	1	1	—	—	—	2	—
	Rate	2·3	—	—	—	—	7·1	4·2	—	—	—	3·3	—
General public volunteers	Total number of examinations	559,840	12,460	2,960	55,260	61,780	133,360	122,300	94,050	32,590	22,730	22,260	90
	Number with respiratory tuberculosis requiring treatment or close supervision	763	4	3	121	129	220	147	86	22	15	16	—
	Rate	1·4	0·3	1·0	2·2	2·1	1·7	1·2	0·9	0·7	0·7	0·7	—
Ante-natal cases	Total number of examinations	59,310	—	20	5,050	19,750	28,260	6,200	30	—	—	—	—
	Number with respiratory tuberculosis requiring treatment or close supervision	106	—	—	10	27	58	11	—	—	—	—	—
	Rate	1·8	—	—	2·0	1·4	2·1	1·8	—	—	—	—	—
Persons residing in or employed at mental hospitals and mental institutions	Total number of examinations	34,030	760	80	1,500	1,880	4,090	5,830	6,970	3,640	2,820	6,420	40
	Number with respiratory tuberculosis requiring treatment or close supervision	54	—	—	4	5	7	9	11	5	6	7	—
	Rate	1·6	—	—	2·7	2·7	1·7	1·5	1·6	1·4	2·1	1·1	—
All groups	Total number of examinations	1,616,390	102,160	71,130	277,610	230,990	323,800	263,470	203,580	66,240	37,870	39,130	410
	Number with respiratory tuberculosis requiring treatment or close supervision	2,689	97	52	516	540	723	380	238	53	41	49	—
	Rate	1·7	0·9	0·7	1·9	2·3	2·2	1·4	1·2	0·8	1·1	1·3	—

* Cases known to be tuberculous before this examination are excluded from this tabulation.

CANCER

In 1956 cancer (malignant neoplasms and neoplasms of lymphatic and haematopoietic tissues I.S.C. Nos. 140–205) was recorded as the cause of death of 48,935 men and 43,775 women, an increase compared with 1955 of 775 deaths of men and 595 deaths of women. Cancer of the lung (I.S.C. Nos. 162–163) was the cause of 15,615 deaths in men and 2,571 in women, an increase in both sexes of about 5 per cent over 1955, when the number of male deaths was 14,821 ; thus male deaths increased by 794, more than the total increase for all forms of cancer. Cancer of the lung now accounts for nearly 32 per cent of all male deaths from cancer but for only about 6 per cent of female deaths. The comparative mortality index (C.M.I.) for cancer of the respiratory system (1938 = 1·00) has risen between 1955 and 1956 from 2·96 to 3·07 for men and from 1·77 to 1·80 for women.

In contrast to this in both sexes mortality from cancer of the digestive tract (I.S.C. Nos. 150–159) continues to fall. The C.M.I. in 1956 was 0·79 for men and 0·76 for women compared with 0·82 and 0·78 in 1955. Alone in this group in recent years, mortality from cancer of the pancreas is rising in both sexes. Cancer of the digestive tract now accounts for 39 per cent of deaths from cancer in men and 41 per cent in women.

The remainder of this chapter has been devoted this year to a commentary upon mortality from neoplasms of the lymphatic and haematopoietic tissues (I.S.C. Nos. 200–205) and mortality from malignant diseases at younger ages.

Leukaemia

The increase in mortality from leukaemia and the evidence that it may be induced by man-made radiation make its epidemiology of considerable interest at the present time. The annual average crude death rate from leukaemia and aleukaemia (I.S.C. No. 204) per million population between 1921 and 1924 was males 15 and females 11, while in 1956 it was males 57 and females 47. Between 1933 and 1956 the comparative mortality index rose from 0·735 to 1·92 for men and from 0·804 to 1·93 for women.

Table LXX and Diagram 13 (pages 128 and 130) give the average annual mortality from 1950–56 for males and females in each single year up to the age of five and then by five-year age-groups. The age mortality curve is conspicuously bimodal, the first peak occurring during the fourth year of life and the second rise commencing about the thirtieth year to reach a peak in the age-group 75–79.

In Diagram 14 (page 131) the age mortality curves for the four quinquennia 1921–25, 1931–35, 1941–45 and 1951–55 are shown separately for the two sexes. The characteristic bimodal form of the curve has altered very little but the greatest increase in mortality has occurred after the age of sixty.

Mortality from leukaemia and from Hodgkin's disease (I.S.C. No. 201) was recently the subject of a special study by the World Health Organization.[1] In this it was shown that mortality from leukaemia had, since the early years of the present century, steadily increased in all countries where records were available. The male death rate was invariably higher than the female and in both sexes the mortality rate was highest in early childhood and in old age. The first peak in the curve was usually among children aged 1–4 years after which the rate fell, to rise in middle age to a peak in late old age, usually about the seventieth year. With one exception mortality in old age exceeded that in

[1] *Epidem. Vit. Stat. Rep.* 1955, Vol. 8, p.81.

childhood by a considerable amount. In Japan, although the curve showed the usual bimodal form, mortality among children was in both sexes higher than at any subsequent age, the second peak appearing in the fifth decade which is considerably earlier than elsewhere.

Crude death rates (all ages) and equivalent average death rates (E.A.D.R. 0–79) are given below for each of the listed countries for the years 1950–52. The highest rates were in Denmark, U.S.A. and Sweden and the lowest in Japan and the Irish Republic.

	Crude death rate		E.A.D.R. (0–79)	
	Males	Females	Males	Females
England and Wales	49	40	61	46
Scotland	45	38	60	43
Australia	51	41	71	51
New Zealand	63	42	90	56
Canada	51	41	73	57
Denmark	73	51	107	66
Finland	35	34	45	41
France	46	34	55	36
Holland	53	42	76	55
Irish Republic	35	25	41	29
Italy	40	29	52	34
Norway	61	51	89	62
Sweden	68	50	87	60
Switzerland	59	45	79	53
U.S.A.	71	51	106	70
Japan	20	15	20	14

Type of leukaemia

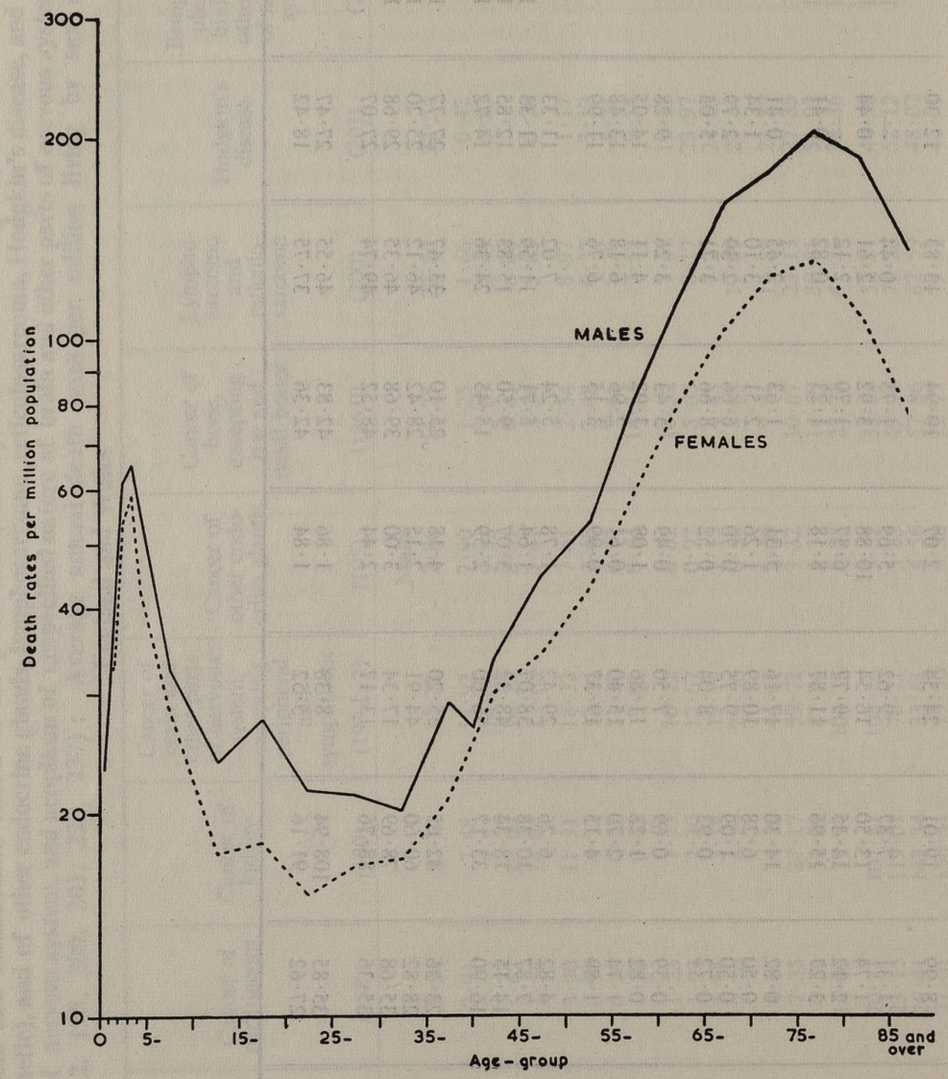
Until the sixth revision, which was adopted in 1950, the International List of Causes of Death placed all forms of leukaemia under one head. The sixth revision divided them into five groups, the first three of which were designed to include all those recognisably of lymphatic, myeloid or monocytic form, whether acute or chronic, the fourth group, all acute cases where the cell picture was indefinite or information as to type lacking, and the fifth, all chronic cases which did not fall into any of the first three groups. This classification is far from satisfactory since the distinction between acute and chronic may prove to be of equal epidemiological importance to that between myeloid and lymphatic. The seventh revision of the International List (to come into operation in 1958) includes under one head acute myeloid, lymphatic and unspecified leukaemia, distinguishing myeloid from lymphatic only in the chronic form of the disease. This is probably the most satisfactory solution at the present moment since in a large proportion of acute cases it is not possible to classify them with certainty to the lymphoid or myeloid type and there are considerable differences in the criteria used by different pathologists. This difficulty in classification appears to be found mainly in the older age-groups where different observers report the most diverse ratios between these two forms.[2] However, there appears to be general agreement that acute lymphatic leukaemia, at least in Great Britain, is much more common in children than acute myeloid leukaemia.[3] Monocytic leukaemia, which is comparatively rare, is almost invariably an acute condition. The present analysis, which is from tabulations based on the sixth revision of the International List, can give no indication of the age distribution of acute leukaemia since only those acute cases where the cell picture is indeterminate are recorded separately.

[2] Scott, R. B. 1957. *The Lancet*, Vol. I, p.1053.
[3] Gauld, W. R. and Innes, J. 1953. *Brit. Med. J.*, Vol. I, p.585.

Table LXX.—Leukaemia and aleukaemia, cancer of the peritoneum, kidney, brain and other parts of the nervous system (excepting peripheral and sympathetic), and of other endocrine glands, lymphosarcoma, reticulosarcoma, Hodgkin's disease, and benign neoplasm of brain and other parts of nervous system, and neoplasm of unspecified nature of brain and other parts of nervous system (I.S.C. Nos. 204, 158, 180, 193.1, 193.2, 195, 200, 201, 223, 237) : Average annual death rates per million living by sex and age, 1950–56, England and Wales

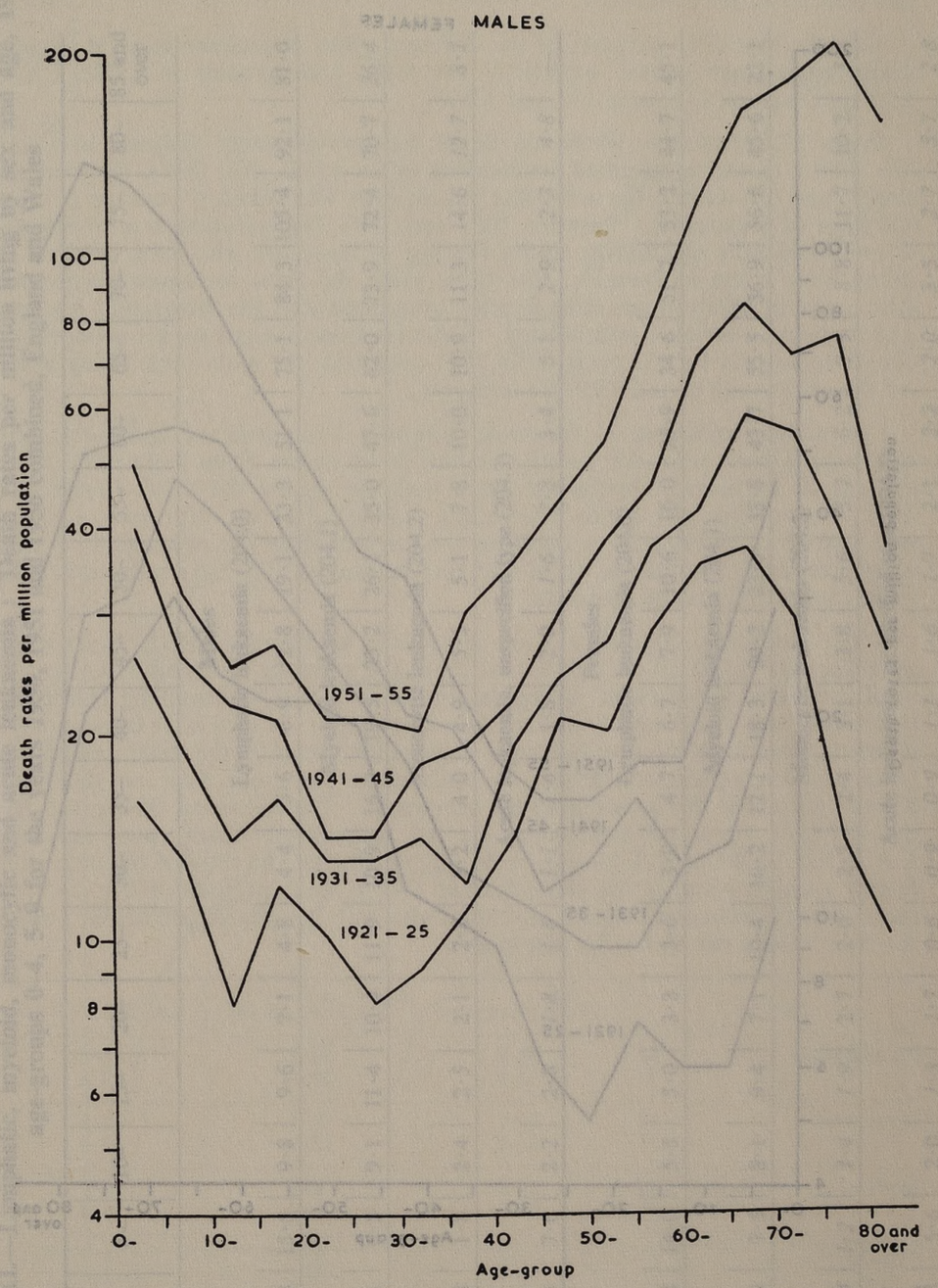
Age	Leukaemia and aleukaemia (204)	Cancer of peritoneum (158)	Cancer of kidney (180)	Cancer of brain and other parts of nervous system, excepting peripheral and sympathetic (193.1, 2)	Cancer of other endocrine glands (195)	Cancer of bone, excepting jaw and nasal bones (196.0)	Lympho-sarcoma and reticulo-sarcoma (200)	Hodgkin's disease (201)	Benign neoplasm of brain and other parts of nervous system (223)	Neoplasm of unspecified nature of brain and other parts of nervous system (237)
					Males					
All ages	52·38	6·54	30·72	37·22	2·86	14·25	20·80	22·54	6·11	17·99
0–	23·28	2·91	7·48	14·97	7·90	1·25	1·66	0·42	8·32	6·24
1–	36·05	3·32	9·53	14·09	9·53	2·07	2·49	0·83	2·49	4·97
2–	61·16	1·62	19·04	16·20	8·51	0·41	6·08	—	2·43	6·48
3–	65·50	1·56	14·04	13·65	7·41	2·34	5·85	0·78	2·34	6·63
4–	54·58	3·90	11·31	18·32	7·41	2·34	8·97	1·17	0·78	5·85
5–	32·31	0·96	4·72	13·44	2·40	2·48	6·32	3·12	1·44	6·16
10–	23·91	0·38	0·57	11·10	0·77	7·46	5·26	5·74	1·72	4·21
15–	27·45	1·38	0·42	9·01	0·64	14·94	7·52	9·54	2·76	4·13
20–	21·77	1·23	1·53	10·12	0·82	10·32	7·67	19·11	2·66	4·29
25–	21·30	1·93	2·30	12·67	0·92	5·05	8·17	23·97	3·21	6·43
30–	20·12	1·68	3·19	19·76	1·15	4·43	7·27	24·55	4·08	7·62
35–	29·00	2·70	6·79	29·56	0·56	4·65	10·69	27·14	5·48	12·08
40–	33·93	4·60	14·15	44·61	2·00	7·81	13·89	23·87	5·99	17·88
45–	44·48	7·35	27·17	59·72	3·32	10·67	23·13	27·35	9·68	25·56
50–	53·66	9·59	51·93	87·74	3·37	14·59	30·81	31·93	10·71	39·99
55–	81·13	14·09	77·74	104·78	5·28	23·27	41·26	38·36	13·96	53·21
60–	116·32	20·31	107·81	108·26	5·52	35·84	52·11	44·50	15·98	55·70
65–	159·29	23·15	119·01	70·71	5·83	49·94	71·26	52·12	11·85	47·75
70–	177·67	26·41	143·34	33·61	4·56	57·86	82·59	48·02	8·64	27·13
75–	202·55	27·01	156·41	19·50	6·38	72·77	79·52	42·01	9·38	17·63
80–	185·07	27·80	137·41	11·91	1·59	62·75	73·07	27·01	9·53	9·53
85 and over	135·63	18·22	87·04	6·07	4·05	54·66	58·70	20·24	4·05	—
					Females					
All ages	42·60	8·99	19·01	24·34	2·07	10·94	13·83	12·30	7·33	12·91
0–	28·43	1·31	7·87	9·62	5·69	1·75	0·44	—	6·56	6·56
1–	33·09	1·74	13·50	16·54	10·88	3·92	2·61	0·44	3·92	3·48
2–	53·55	2·12	14·45	9·77	6·37	1·70	2·12	—	0·42	3·40
3–	59·33	3·27	15·96	11·87	8·18	1·23	0·82	0·41	1·23	3·68
4–	42·50	0·82	14·30	17·16	5·31	1·63	2·45	0·41	0·82	9·81
5–	28·98	0·50	6·28	10·89	1·26	2·51	3·10	1·34	0·92	6·03
10–	17·41	0·50	1·09	9·75	0·70	6·66	2·39	2·79	2·19	5·37
15–	18·15	0·72	0·93	8·04	0·52	8·66	3·71	5·05	2·06	3·82
20–	15·21	0·59	0·69	7·50	0·49	5·43	3·26	9·28	2·96	3·55
25–	16·97	0·82	1·28	11·86	1·09	3·92	4·11	14·05	3·56	5·66
30–	17·14	1·74	2·70	15·40	0·61	2·96	6·18	13·48	4·52	5·74
35–	20·91	1·89	4·15	19·37	0·99	3·15	6·76	11·99	6·04	7·84
40–	30·01	4·82	6·26	29·42	1·78	5·24	7·02	11·33	8·03	11·58
45–	34·26	7·87	10·38	38·07	1·64	5·71	11·59	11·33	10·21	17·30
50–	42·83	14·15	18·34	48·32	3·07	9·50	15·83	12·85	16·57	24·30
55–	59·71	16·90	33·17	56·60	2·59	15·45	24·36	14·72	15·45	31·41
60–	80·42	23·36	42·65	55·20	4·18	25·10	33·47	27·77	15·57	31·96
65–	103·50	28·82	60·60	44·91	2·15	28·42	46·12	25·20	13·81	29·90
70–	124·71	35·68	78·69	17·34	3·00	39·68	46·35	29·68	10·50	19·01
75–	130·70	35·36	88·76	13·17	2·44	48·52	49·74	27·07	9·27	12·92
80–	107·54	35·85	108·94	8·38	1·86	42·83	46·55	27·47	8·38	8·38
85 and over	77·35	27·62	91·16	5·52	1·84	42·36	37·75	18·42	7·37	8·29

Diagram 13



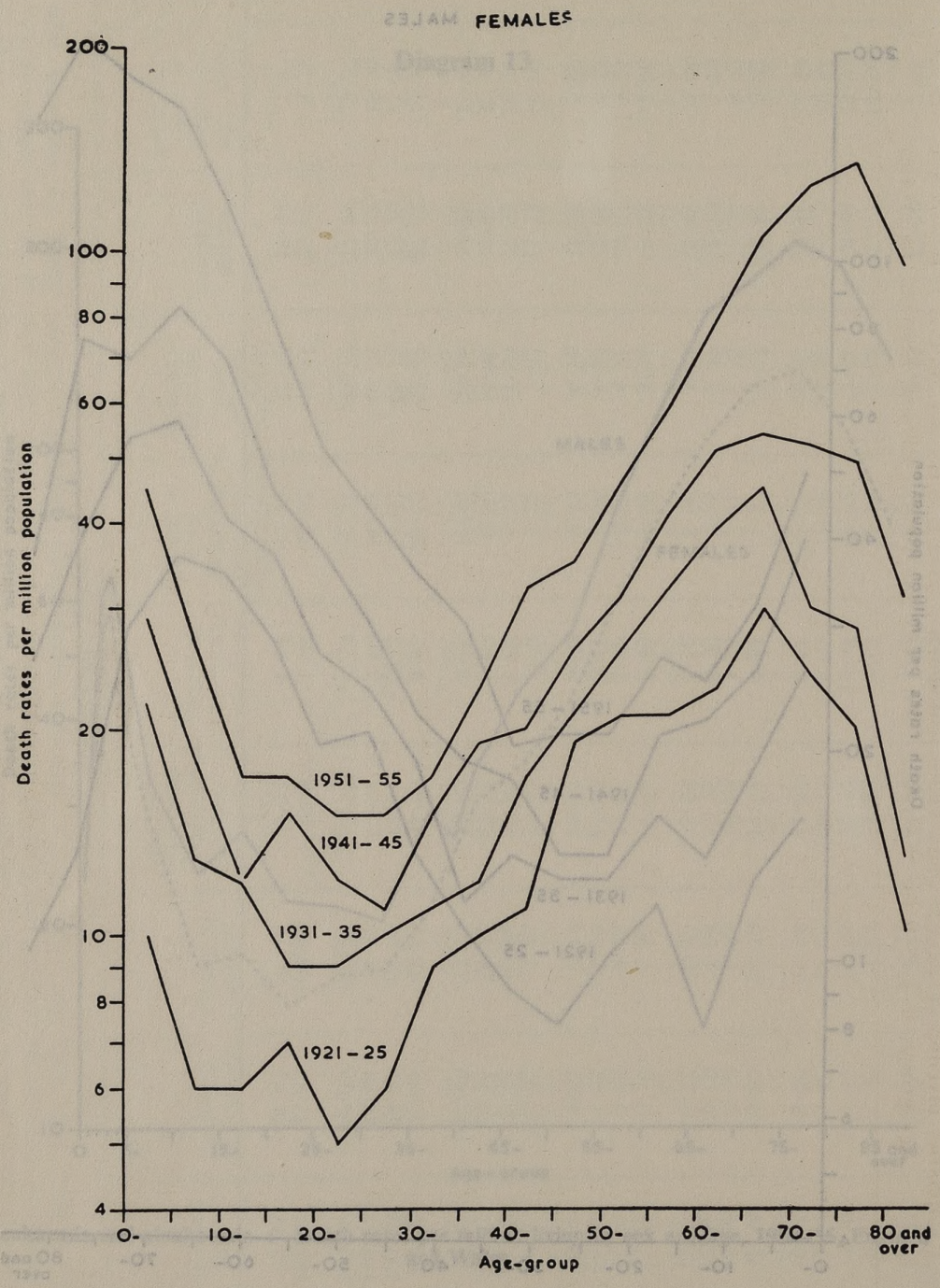
Leukaemia and aleukaemia : Death rates per million living by sex and age, 1950–56, England and Wales

Diagram 14



Leukaemia and aleukaemia, males : Death rates per million living, by age, 1921–25, 1931–35, 1941–45 and 1951–55, England and Wales

Diagram 14—*continued.*



Leukaemia and aleukaemia, females: Death rates per million living, by age 1921–25, 1931–35, 1941–45 and 1951–55, England and Wales

Table LXXI.—Lymphatic, myeloid, monocytic and acute leukaemia : Death rates per million living by sex and age, 1950–56 and age-groups 0–4, 5–9 for the years 1950, 1951 and 1956 combined, England and Wales

All ages	0–	5–	10–	15–	20–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85 and over	1950, 1951 and 1956	
																			0–4	5–9
Males																				
Lymphatic leukaemia (204.0)																				
21·1	24·3	15·5	9·8	9·6	7·1	4·8	4·4	5·6	6·9	12·8	19·1	33·3	51·1	75·1	84·3	105·4	92·1	81·0	25·8	17·3
Myeloid leukaemia (204.1)																				
21·8	11·1	6·5	9·1	11·4	10·4	11·9	10·9	16·9	19·5	23·2	26·1	35·0	47·6	62·0	73·9	72·4	70·7	*36·4*	13·4	7·7
Monocytic leukaemia (204.2)																				
4·5	*0·8*	1·8	2·4	2·5	2·1	2·8	3·2	4·0	4·9	5·5	5·1	7·8	10·0	10·9	11·3	14·6	*12·7*	*8·1*	*1·1*	*2·2*
Acute leukaemia, unspecified type (204.3)																				
3·4	11·3	7·6	2·2	2·8	*1·8*	*1·6*	*1·1*	*1·6*	1·8	2·0	*1·6*	*2·3*	3·4	5·1	*2·9*	*2·3*	*4·8*	—	4·0	*3·7*
Females																				
Lymphatic leukaemia (204.0)																				
14·2	22·3	14·0	5·5	5·0	3·3	3·6	3·0	4·7	6·7	7·9	10·6	16·0	25·9	34·6	51·2	53·2	44·7	45·1	23·9	19·1
Myeloid leukaemia (204.1)																				
20·7	8·4	7·5	8·1	9·4	7·1	10·4	10·2	12·1	18·3	20·2	23·9	33·8	43·7	55·5	56·9	56·6	45·6	22·1	10·5	8·4
Monocytic leukaemia (204.2)																				
3·7	*1·4*	*1·2*	*1·4*	*1·9*	2·7	2·0	2·5	2·4	3·1	3·8	5·6	5·7	6·2	7·5	8·8	11·7	10·2	*3·7*	*1·9*	*1·6*
Acute leukaemia, unspecified type (204.3)																				
2·6	10·3	5·6	2·0	*1·3*	*1·7*	*0·6*	*0·9*	*0·9*	*1·1*	*1·6*	*1·7*	2·1	*2·2*	*2·0*	3·5	*2·7*	*3·7*	*2·8*	5·3	*2·7*

Recent analyses of hospital material show a steady reduction of the proportion of acute leukaemia in each successive age-group. Under the age of ten years 90 per cent or more are graded as acute but the proportion falls to about 50 per cent in early middle life, while over the age of 70 years estimates vary from 20 per cent to 40 per cent.[4][5]

The age mortality patterns of the different types of leukaemia as at present distinguished, are shown separately for males and females in Table LXXI and in Diagram 15 (pages 133 and 135).

From 1950 onwards, when any death was provisionally assigned to I.S.C. No. 204.3 (acute unspecified leukaemia) or to I.S.C. No. 204.4 (unspecified leukaemia, not acute), the certifying practitioner was asked if possible to state the type of leukaemia. Between 1952 and 1955 this question was not asked about the deaths of children under the age of ten years who were certified as dying from acute leukaemia. For these years the rates for acute unspecified leukaemia in children are considerably overstated and the lymphatic, myeloid and monocytic varieties understated. Rates for these age-groups are accordingly shown separately for the years 1950, 1951 and 1956, the main table being based on the seven-year period 1950–56 inclusive.

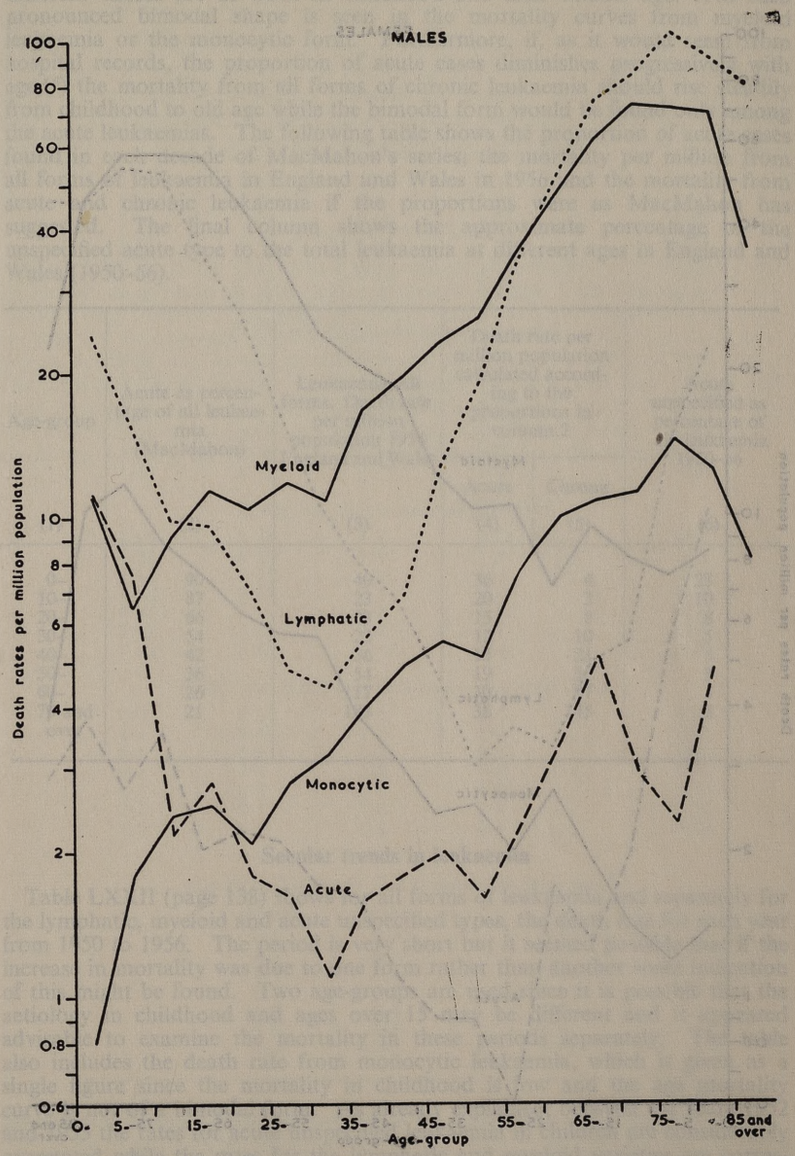
Lymphatic leukaemia is the most common leukaemia of childhood and accounts in both sexes for nearly one-half of all deaths from leukaemia under the age of 15 years. Deaths are more frequent during the third, fourth and fifth years of life, the death rate falling rapidly after the fifth year. About one-quarter of the deaths in children are attributed to the myeloid form and occur mainly in the second, third and fourth years of life, the death rate rising from the second decade onwards.

After childhood, mortality from lymphatic leukaemia falls in both sexes until the age-group 30–34, while that from the myeloid type continues to rise until the oldest age-groups. Over the age of 35 mortality from the lymphatic form rises, but more rapidly in men than in women ; in men after the age of 60 it exceeds that from the myeloid type. Under the age of 10 the death rates from lymphatic leukaemia are similar in both sexes but from then on the male mortality exceeds the female at every age-group. The following table gives, for the different types of leukaemia, the all ages crude death rates and the E.A.D.Rs. for the ages 0–14 and 15–84. It shows that the ratio of the male and female rates is roughly the same (about 5:4) at both periods of life and for each form of leukaemia except among adults with lymphatic leukaemia ; here the male rate is nearly double the female.

1950–56		Crude death rate	E.A.D.R. (0–14)	E.A.D.R. (15–84)
All leukaemia	**M**	**52·4**	**34·8**	**83·8**
	F	**42·6**	**29·9**	**57·3**
Lymphatic	M	21·1	16·5	36·5
	F	14·2	13·9	19·3
Myeloid	M	21·8	8·9	35·1
	F	20·7	8·0	28·8
Monocytic	M	4·5	1·7	6·9
	F	3·7	1·3	5·3
Acute unspecified	M	3·4	7·0	2·5
	F	2·6	6·0	1·9

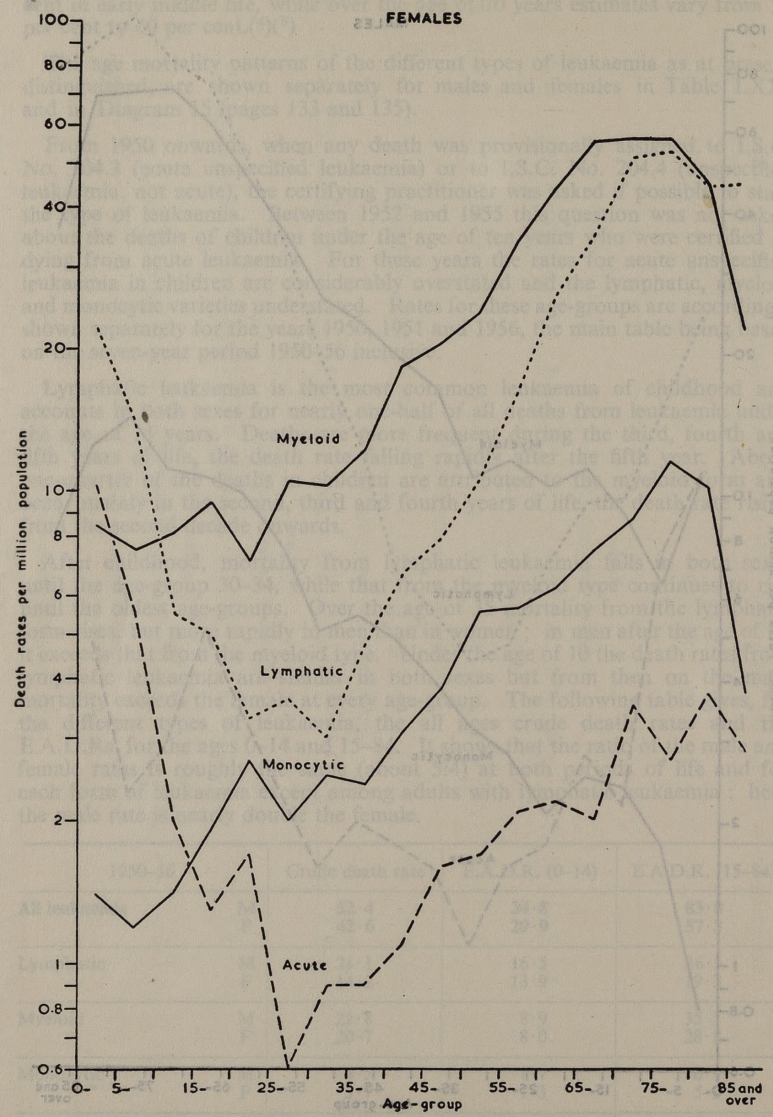
(4) Gunz, F. W. and Hough, R. F. 1956. *Blood*, Vol. XI, p.882.
(5) MacMahon, B. and Clark, D. *ibid.* p.871.

Diagram 15



Leukaemia and aleukaemia, males : Death rates per million living by age, from certain types of leukaemia and aleukaemia, 1950–56, England and Wales

Diagram 15—*continued.*



Leukaemia and aleukaemia, females : Death rates per million living, by age, from certain types of leukaemia and aleukaemia, 1950–56, England and Wales

To summarise, the lymphatic form of leukaemia is a disease of the extremes of life and the bimodal form of the mortality curve carries the suggestion that different causes are at work in childhood and after middle age. No such pronounced bimodal shape is seen in the mortality curves from myeloid leukaemia or the monocytic form. Furthermore, if, as it would seem from hospital records, the proportion of acute cases diminishes progressively with age,(6) the mortality from all forms of chronic leukaemia should rise steadily from childhood to old age while the bimodal form would be found only among the acute leukaemias. The following table shows the proportion of acute cases found in each decade of MacMahon's series, the mortality per million from all forms of leukaemia in England and Wales in 1956 and the mortality from acute and chronic leukaemia if the proportions were as MacMahon has suggested. The final column shows the approximate percentage of the unspecified acute type to the total leukaemia at different ages in England and Wales (1950–56).

Age-group	Acute as percentage of all leukaemia (MacMahon)	Leukaemia, all forms. Death rate per million population 1956 England and Wales	Death rate per million population calculated according to the proportions in column 2		Acute unspecified as percentage of all leukaemia 1950–56
			Acute	Chronic	
(1)	(2)	(3)	(4)	(5)	(6)
0–	90	40	36	4	23
10–	87	23	20	3	10
20–	66	23	15	8	8
30–	54	22	12	10	5
40–	42	36	15	21	5
50–	36	54	19	35	3
60–	26	117	30	87	3
70 and over	21	183	38	145	2

Secular trends in leukaemia

Table LXXII (page 138) shows for all forms of leukaemia and separately for the lymphatic, myeloid and acute unspecified types, the death rate for each year from 1950 to 1956. The period is very short but it seemed possible that if the increase in mortality was due to one form rather than another some indication of this might be found. Two age-groups are used since it is possible that the aetiology in childhood and ages over 15 may be different and it appeared advisable to examine the mortality in these periods separately. The table also includes the death rate from monocytic leukaemia, which is given as a single figure since the mortality in childhood is low and the age mortality curve is not of a bimodal form. As already explained, between the years 1952 and 1955 the rates for acute unspecified leukaemia in children are considerably overstated while the rates for the lymphatic and myeloid varieties are correspondingly low. Older ages have not been affected.

(6) MacMahon, B. and Clark, D. *Blood*, Vol. XI, p. 871.

Table LXXII.—Leukaemia and aleukaemia : Death rates per million living, by sex, at ages 0–14 and 15 and over in each year 1950 to 1956, England and Wales

	Ages 0–14		Ages 15 and over	
	Males	Females	Males	Females
Leukaemia and aleukaemia (I.S.C. No. 204)				
1950	31·5	30·1	51·6	38·8
1951	36·6	31·3	49·9	44·1
1952	42·1	30·0	55·3	44·2
1953	38·2	31·7	57·1	47·1
1954	35·7	26·1	59·3	49·2
1955	29·6	32·3	65·9	46·4
1956	34·8	33·1	64·2	50·7
Lymphatic leukaemia (I.S.C. No. 204.0)				
1950	15·3	17·4	20·9	12·8
1951	21·5	16·8	20·0	13·6
1952	18·8	12·3	21·7	12·6
1953	18·2	12·0	21·2	14·2
1954	17·1	9·9	23·2	16·7
1955	10·9	16·3	26·3	14·0
1956	16·7	15·9	23·4	15·5
Myeloid leukaemia (I.S.C. No. 204.1)				
1950	10·6	6·8	21·7	20·4
1951	9·7	9·7	21·8	23·8
1952	9·2	6·9	25·0	23·8
1953	8·5	8·3	26·6	24·8
1954	5·5	5·6	27·3	24·9
1955	7·2	7·6	29·3	25·2
1956	11·5	11·1	29·2	25·7
Acute leukaemia, unspecified type (I.S.C. No. 204.3)				
1950	2·8	4·0	1·8	0·9
1951	3·2	3·1	1·8	1·8
1952	11·6	8·5	2·0	1·8
1953	9·7	8·9	1·8	1·9
1954	10·4	9·3	1·8	1·6
1955	9·2	6·5	3·0	1·2
1956	4·0	2·8	2·8	2·1

Monocytic leukaemia (I.S.C. No. 204.2) **at all ages**

	Male	Female
1950 ..	4·5	3·0
1951 ..	3·9	2·7
1952 ..	4·1	3·8
1953 ..	4·7	4·2
1954 ..	4·7	3·6
1955 ..	4·3	4·0
1956 ..	5·5	4·8

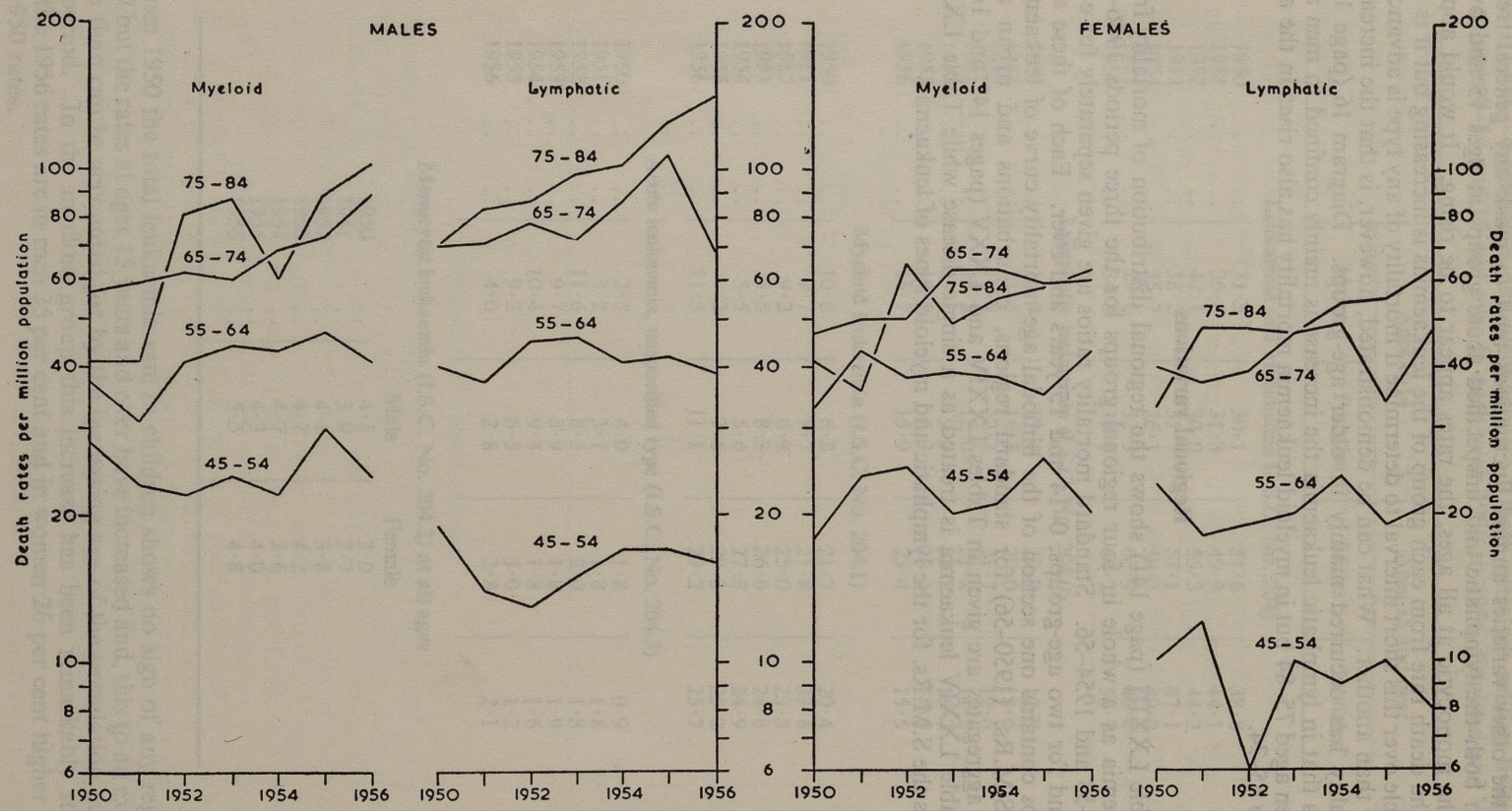
Since 1950 the total leukaemia rate in children shows no sign of any regular trend but the rates at ages 15 years and over have increased and, this to an extent, more than can be accounted for by the increasing age of the population during the period. In the myeloid group this increase has been remarkably steady and the 1956 rates are in men 35 per cent and in women 26 per cent higher than the 1950 rates.

In the other varieties annual fluctuations tend to mask any general trend, but in both the lymphatic and unspecified acute groups at ages 15 and over, and the monocytic at all ages, the rates appear to be rising. It would appear that the death rate from each group of the leukaemias is increasing but it is not possible over this short interval to determine if mortality of any type is advancing faster than another. What can be demonstrated, however, is that the increased mortality has occurred mainly in older age-groups. Diagram 16 (page 140) shows that in lymphatic leukaemia the increase is mainly confined to men and women aged 75–84 but in myeloid leukaemia mortality has also risen in the age-group 65–74.

Regional variations

Table LXXIII (page 141) shows the regional distribution of mortality from leukaemia as a whole in four regional groups for the three periods 1946–49, 1950–53 and 1954–56. Standard mortality ratios are given separately for each sex and for two age-groups, 0–14 and 15 years and over. Each of these age-groups contains one section of the bimodal age-mortality curve of leukaemia. The S.M.Rs. (1950–56) for standard regions, conurbations and urban and rural aggregates are given in Tables LXXIV and LXXV (pages 142 and 143). In Table LXXIV leukaemia is treated as a single disease while Table LXXV shows the S.M.Rs. for the lymphatic and myeloid types of leukaemia.

Diagram 16



Leukaemia and aleukaemia : Death rates per million living in certain sex-age groups from the myeloid and lymphatic forms, in each year 1950 to 1956, England and Wales

Table LXXIII.—Leukaemia and aleukaemia and Hodgkin's disease : Regional group trends by sex and age. Standardised mortality ratios 1946–49, 1950–53, 1954–56, England and Wales

	Leukaemia and aleukaemia												Hodgkin's diseases					
	1946–49 (I.S.C. No. 74)				1950–53 (I.S.C. No. 204)				1954–56 (I.S.C. No. 204)				1947–49 (I.S.C. No. 446)		1950–53 (I.S.C. No. 201)		1954–56 (I.S.C. No. 201)	
	0–14		15 and over		0–14		15 and over		0–14		15 and over		All ages		All ages		All ages	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
England and Wales ..	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Northern	95	96	92	88	83	96	90	91	94	96	95	96	101	89	106	100	107	114
Midlands and Eastern	94	88	96	102	105	96	97	94	100	116	91	97	97	94	82	91	85	81
Southern	106	116	110	112	111	111	111	113	107	96	113	106	99	118	101	104	102	103
Wales	113	78	96	75	103	76	95	82	91	75	83	86	117	59	135	110	114	86

Death rates from leukaemia were in most instances highest in the southern part of England and Wales between 1946 and 1956. Table LXXIV shows that among adults, mortality of both men and women from all forms of leukaemia together was much the highest in the Southern and London and South Eastern regions. Among children, however, in addition to these regions excessive mortality is found in the Midland region in males and in the Eastern, East and West Ridings and Midland regions in females. Although mortality ratios are comparatively low in the rural districts there is no definite sign of an urban-rural gradient.

Table LXXIV.—Leukaemia and aleukaemia and Hodgkin's disease: Standardised mortality ratios in standard regions, conurbations and urban and rural aggregates, 1950–56, England and Wales

	Leukaemia and aleukaemia (I.S.C. No. 204)				Hodgkin's disease (I.S.C. No. 201)	
	0–14		15 and over		All ages	
	M	F	M	F	M	F
England and Wales	**100**	**100**	**100**	**100**	**100**	**100**
Standard regions :						
Northern	78	98	87	98	91	109
East and West Ridings	85	109	96	90	107	107
North Western	94	86	92	94	113	105
North Midland	99	94	90	94	94	94
Midland	111	107	97	94	77	73
Eastern	96	113	95	100	81	97
London and South Eastern	113	104	114	113	109	109
Southern	108	112	122	113	80	90
South Western	96	96	95	96	94	96
Wales	98	75	90	84	125	99
Conurbations :						
Tyneside	72	86	97	100	107	94
West Yorkshire	81	118	105	89	120	124
South East Lancashire	102	89	91	96	109	121
Merseyside	101	78	114	105	125	108
West Midlands	101	90	93	92	80	60
Greater London	119	98	114	114	108	105
Urban and rural aggregates :						
Conurbations	106	95	106	105	107	103
Areas outside conurbations :						
Urban areas with populations of 100,000 and over	93	96	102	96	100	95
Urban areas with populations of 50,000 and under 100,000	99	123	97	107	103	94
Urban areas with populations under 50,000	102	107	96	95	99	99
Rural districts	92	95	94	97	86	101

Table LXXV.—Leukaemia and aleukaemia: Standardised mortality ratios by sex at ages 0–14 and 15 and over in standard regions, conurbations and urban and rural aggregates, 1950–56, England and Wales

	Lymphatic leukaemia (I.S.C. No. 204.0)				Myeloid leukaemia (I.S.C. No. 204.1)			
	Males		Females		Males		Females	
	0–14	15 and over	0–14	15 and over	0–14	15 and over	0–14	15 and over
ENGLAND AND WALES	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Conurbations	99	104	89	99	118	108	109	108
Areas outside conurbations :								
Urban areas with populations of 100,000 and over	92	94	105	94	90	103	85	97
Urban areas with populations of 50,000 and under 100,000	115	97	134	120	80	94	93	101
Urban areas with populations under 50,000	118	100	109	100	82	94	100	93
Rural districts	82	97	94	98	100	91	95	93
NORTH OF ENGLAND								
Regions :								
Northern	85	82	113	99	79	90	88	102
East and West Ridings	73	89	96	76	105	108	145	99
North Western	86	94	75	84	104	88	103	93
Total	**82**	**90**	**90**	**85**	**99**	**94**	**112**	**97**
Conurbations :								
Tyneside	83	90	101	89	80	101	74	106
West Yorkshire	92	102	123	74	114	119	142	103
South East Lancashire	121	90	102	85	83	85	41	90
Merseyside	66	104	23	97	161	121	186	110
Total	**95**	**96**	**88**	**85**	**109**	**104**	**106**	**100**
Areas outside conurbations :								
Urban areas with populations of 100,000 and over	75	84	71	83	119	113	128	106
Urban areas with populations of 50,000 and under 100,000	72	75	123	99	88	73	134	86
Urban areas with populations under 50,000	65	88	82	83	74	78	120	92
Rural districts	72	88	110	84	84	85	89	93
MIDLANDS AND EASTERN								
Regions :								
North Midland	115	98	100	97	87	90	69	95
Midland	95	88	104	89	157	109	134	102
Eastern	98	94	121	102	65	99	76	94
Total	**102**	**93**	**107**	**95**	**110**	**100**	**98**	**98**
Conurbations :								
West Midlands	71	76	64	72	170	113	156	110
Areas outside conurbations :								
Urban areas with populations of 100,000 and over	89	99	139	120	89	101	57	103
Urban areas with populations of 50,000 and under 100,000	153	111	106	102	85	99	59	105
Urban areas with populations under 50,000	137	98	133	102	100	105	82	94
Rural districts	82	93	98	88	94	90	109	86

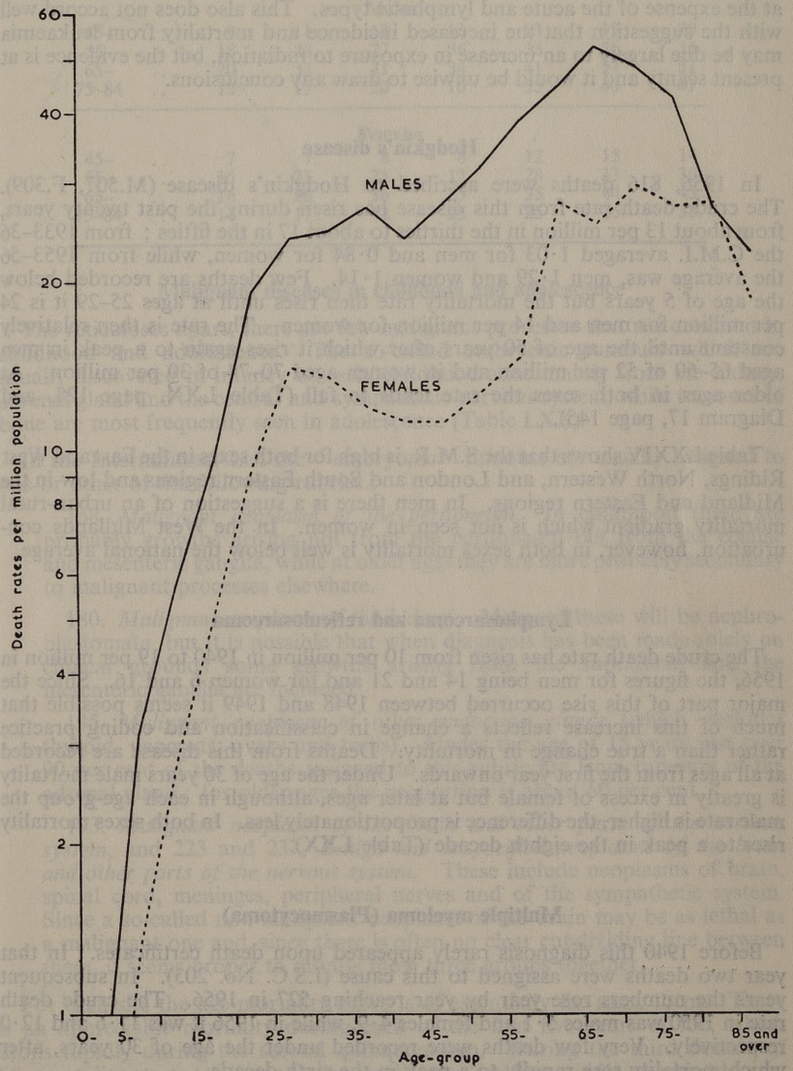
Table LXXV—*continued.*

	Lymphatic leukaemia (I.S.C. No. 204.0)				Myeloid leukaemia (I.S.C. No. 204.1)			
	Males		Females		Males		Females	
	0–14	15 and over	0–14	15 and over	0–14	15 and over	0–14	15 and over
GREATER LONDON	110	117	98	115	110	111	97	114
SOUTH OF ENGLAND								
Regions :								
London and South Eastern (excluding Greater London) ..	128	123	127	117	82	94	97	108
Southern	105	102	101	108	113	124	109	106
South Western	114	104	101	118	80	97	94	92
Total	**115**	**109**	**109**	**115**	**92**	**105**	**100**	**102**
Urban areas with populations of 100,000 and over	112	96	111	90	68	103	89	91
Urban areas with populations of 50,000 and under 100,000 ..	121	106	157	154	68	116	93	109
Urban areas with populations under 50,000	138	118	116	116	76	108	112	106
Rural districts	96	109	85	111	129	100	96	99
WALES (including Monmouthshire) ..	**111**	**99**	**96**	**92**	**64**	**79**	**55**	**72**
Urban areas with populations of 100,000 and over	103	105	85	59	66	81	51	73
Urban areas with populations of 50,000 and under 100,000 ..	—	119	435	82	—	—	—	96
Urban areas with populations under 50,000	158	96	104	94	72	78	72	55
Rural districts	56	98	69	113	54	85	41	94

Comparing regional differences in Tables LXIV and LXV, it is seen that in children the high S.M.Rs. in the North, Midlands and Eastern regional groups are usually associated with a high ratio for the myeloid group, while that for the lymphatic group remains low. Thus in boys in the Midland region the S.M.R. for myeloid leukaemia is 157 and for girls in the East and West Ridings and in the Midland regions it is 145 and 134 respectively, though in the Eastern region the S.M.R. for lymphatic leukaemia is 121 and that for myeloid 76. In adults, however, and in both sexes a high S.M.R. for one type of leukaemia is more often than not associated with a high ratio for the other; the only notable exceptions being in the East and West Ridings and Midland regions in both sexes, where the lymphatic rate is low, and in Wales in both sexes and the South Western region in women, where the myeloid rate is low. There appears to be no regular association of either type of leukaemia with a high or low regional mortality, and the tables contain no evidence that regional differences in mortality from leukaemia as a whole are due to local variations in the incidence of one or other type of leukaemia.

Since the most common form of leukaemia occurring after excessive exposure to artificial radiation is of the myeloid variety(7) and if regional variations in the incidence of leukaemia were determined by local differences in the intensity of radiation, whether from natural sources or from the excessive use of X-rays or other therapeutic means, it is probable that in those regions where the total

Diagram 17



Hodgkin's disease : Death rates per million living, by sex and age, 1950–56, England and Wales

(7) Witts, L. J. 1957. *Brit. Med. J.*, Vol. I, p.1197.

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mortality from leukaemia was high, the proportion due to the myeloid type would also be high. Since no such uniformity is apparent among the ratios in these two tables, it would seem that other causes must, at least in part, determine their differences. Our information as to the different types of leukaemia prevalent in the past is scanty and drawn almost entirely from hospital records, where the size of the population at risk cannot be well related to the recorded cases, but such evidence as there is suggests that the proportion of myeloid cases is falling at the expense of the acute and lymphatic types. This also does not accord well with the suggestion that the increased incidence and mortality from leukaemia may be due largely to an increase in exposure to radiation, but the evidence is at present scanty and it would be unwise to draw any conclusions.

Hodgkin's disease

In 1956, 816 deaths were ascribed to Hodgkin's disease (M.507, F.309). The crude death rate from this disease has risen during the past twenty years, from about 13 per million in the thirties to about 17 in the fifties ; from 1933–36 the C.M.I. averaged 1·03 for men and 0·84 for women, while from 1953–56 the average was, men 1·29 and women 1·14. Few deaths are recorded below the age of 5 years but the mortality rate then rises until at ages 25–29 it is 24 per million for men and 14 per million for women. The rate is then relatively constant until the age of 50 years after which it rises again to a peak in men aged 65–69 of 52 per million and in women aged 70–74 of 30 per million. At older ages in both sexes the rate tends to fall (Table LXX, page 128, and Diagram 17, page 145).

Table LXXIV shows that the S.M.R. is high for both sexes in the East and West Ridings, North Western, and London and South Eastern regions and low in the Midland and Eastern regions. In men there is a suggestion of an urban-rural mortality gradient which is not seen in women. In the West Midlands conurbation, however, in both sexes mortality is well below the national average.

Lymphosarcoma and reticulosarcoma

The crude death rate has risen from 10 per million in 1940 to 19 per million in 1956, the figures for men being 14 and 21 and for women 6 and 16. Since the major part of this rise occurred between 1948 and 1949 it seems possible that much of this increase reflects a change in classification and coding practice rather than a true change in mortality. Deaths from this disease are recorded at all ages from the first year onwards. Under the age of 30 years male mortality is greatly in excess of female but at later ages, although in each age-group the male rate is higher, the difference is proportionately less. In both sexes mortality rises to a peak in the eighth decade (Table LXX).

Multiple myeloma (Plasmocytoma)

Before 1940 this diagnosis rarely appeared upon death certificates. In that year two deaths were assigned to this cause (I.S.C. No. 203). In subsequent years the numbers rose year by year reaching 527 in 1956. The crude death rate in 1950 was males 5·1 and females 4·9, while in 1956 it was 11·6 and 12·0 respectively. Very few deaths were recorded under the age of 30 years, after which mortality rose rapidly to a peak in the sixth decade.

Though the disease has been well recognised since the early nineteen twenties the differential diagnosis is not simple and it seems probable that the recent rise

in recorded mortality reflects an increasing use of laboratory and other diagnostic facilities rather than a true rise in incidence. The table below shows death rates per million living from this cause by sex and age from 1950 to 1956.

	1950	1951	1952	1953	1954	1955	1956
Males							
45– ..	9	11	12	13	13	15	20
55– ..	18	28	27	36	38	26	36
65– ..	20	32	31	34	41	54	51
75–84 ..	13	13	20	16	35	40	41
Females							
45– ..	7	7	8	8	12	15	14
55– ..	15	21	23	17	28	33	36
65– ..	16	26	36	25	35	44	45
75–84 ..	14	17	12	25	25	26	37

Malignant diseases in childhood and adolescence

The reticuloses apart, there are few malignant processes that are common in childhood and adolescence. The so-called embryonic tumours which are usually discovered in infancy or early childhood arise mainly from the kidney, adrenal gland and the central and sympathetic nervous system, while tumours of bone are most frequently seen in adolescence (Table LXX).

In the International List the " embryonic " tumours are usually assigned to one or other of the following rubrics :

158. *Malignant neoplasm of the peritoneum.* In childhood these are probably growths arising not from the peritoneum but from the coeliac and mesenteric ganglia, while at older ages they are more probably secondary to malignant processes elsewhere.

180. *Malignant neoplasm of the kidney.* Many of these will be nephroblastomata, but it is possible that when diagnosis has been made solely on clinical grounds some growths arising from the suprarenal and the mesenteric ganglia are included.

195. *Malignant neoplasm of other endocrine glands* (which excludes thyroid, pancreas, ovary and testis). Under the age of 15 years just over 90 per cent of the deaths assigned to this rubric are from tumours of the adrenal gland ; for older ages the proportion is about 60 per cent.

193. *Malignant neoplasm of the brain and other parts of the nervous system*, and 223 and 237, *Benign and unspecified neoplasms of the brain and other parts of the nervous system.* These include neoplasms of brain, spinal cord, meninges, peripheral nerves and of the sympathetic system. Since a so-called non-malignant neoplasm of the brain may be as lethal as a malignant one and, since there is often no clear cut dividing line between them, it seems proper to discuss these three groups together.

For each site the age-mortality curve is of essentially the same form. There is an appreciable mortality during each of the first five years of life, which drops rapidly during the second quinquennium. During the third decade of life mortality starts to rise again, to reach a peak in late middle or early old age. This trough in the mortality curve between the ages of 10 and 30 years is deeper and more clearly defined in the case of tumours of the kidney and suprarenal than in those of the brain and central nervous system (Diagram 18, page 148).

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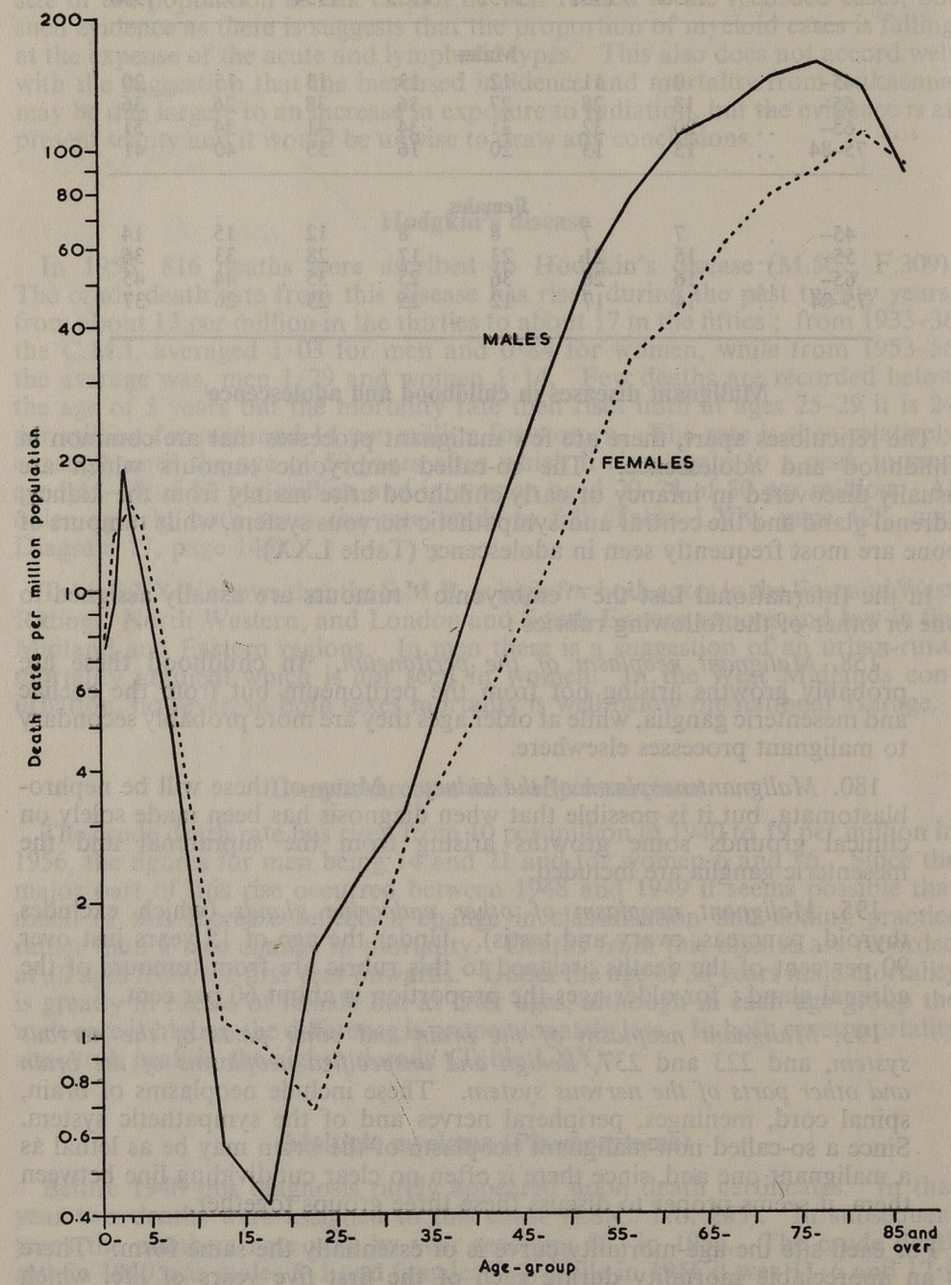
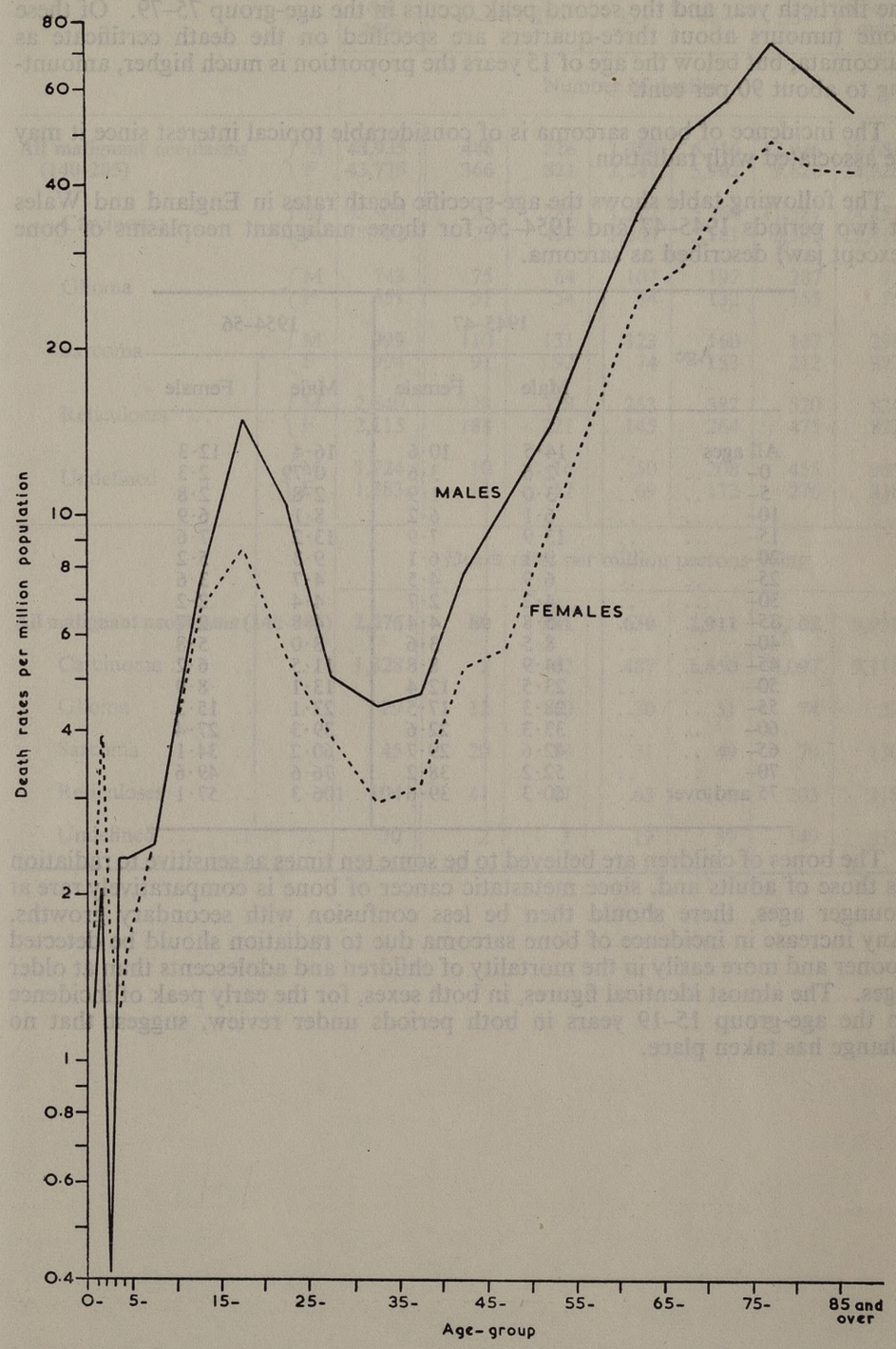
Diagram 18



Cancer of the kidney : Death rates per million living, by sex and age, 1950–56, England and Wales

Diagram 19



Cancer of the bone : Death rates per million living, by sex and age, 1950–56, England and Wales

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Malignant tumours of bone present quite a different picture (Diagram 19, page 149). Here mortality is low under the age of five and rises to a first peak between the ages of fifteen and twenty. The second rise commences after the thirtieth year and the second peak occurs in the age-group 75–79. Of these bone tumours about three-quarters are specified on the death certificate as sarcomata, but below the age of 15 years the proportion is much higher, amounting to about 90 per cent.

The incidence of bone sarcoma is of considerable topical interest since it may be associated with radiation.

The following table shows the age-specific death rates in England and Wales at two periods 1945–47 and 1954–56 for those malignant neoplasms of bone (except jaw) described as sarcoma.

Age	1945–47		1954–56	
	Male	Female	Male	Female
All ages ..	14·5	10·6	16·4	12·3
0–	2·6	3·6	0·79	2·3
5–	3·0	1·9	2·8	2·8
10–	6·1	6·2	8·1	6·9
15–	13·9	7·9	13·2	7·6
20–	9·1	6·1	9·3	5·2
25–	6·9	4·5	4·7	3·6
30–	4·2	2·7	4·4	2·2
35–	5·8	4·4	4·8	2·7
40–	8·5	3·6	8·0	5·8
45–	14·9	8·8	11·5	6·2
50–	23·5	12·4	13·1	8·9
55–	28·3	17·5	23·1	15·3
60–	33·3	22·6	39·3	27·4
65–	42·6	29·7	60·2	34·1
70–	52·2	38·2	76·6	49·6
75 and over ..	60·3	39·6	106·3	57·1

The bones of children are believed to be some ten times as sensitive to radiation as those of adults and, since metastatic cancer of bone is comparatively rare at younger ages, there should then be less confusion with secondary growths. Any increase in incidence of bone sarcoma due to radiation should be detected sooner and more easily in the mortality of children and adolescents than at older ages. The almost identical figures, in both sexes, for the early peak of incidence in the age-group 15–19 years in both periods under review, suggest that no change has taken place.

Table LXXVI.—Deaths from cancer by sex and age according to histological type, and death rates per million living, 1956, England and Wales

		All ages	0–	15–	35–	45–	55–	65 and over
		Number of deaths						
All malignant neoplasms (140-205)	M	**48,935**	**446**	**826**	**1,750**	**6,316**	**12,946**	**26,651**
	F	**43,775**	**366**	**821**	**2,241**	**5,902**	**9,620**	**24,825**
Carcinoma	M	42,929	23	287	1,217	5,364	11,587	24,451
	F	38,732	25	437	1,869	5,181	8,502	22,718
Glioma	M	743	75	64	107	197	207	93
	F	551	51	54	84	132	155	75
Sarcoma	M	999	110	131	123	160	177	298
	F	994	91	92	74	153	212	372
Reticuloses	M	2,540	228	328	253	387	520	824
	F	2,115	188	221	145	264	475	822
Undefined	M	1,724	10	16	50	208	455	985
	F	1,383	11	17	69	172	276	838
		Death rates per million persons living						
All malignant neoplasms (140-205)		**2,076**	**80**	**141**	**630**	**1,911**	**4,602**	**9,951**
Carcinoma		1,828	5	62	487	1,650	4,097	9,118
Glioma		29	12	10	30	51	74	32
Sarcoma		45	20	19	31	49	79	130
Reticuloses		104	41	47	63	102	203	318
Undefined		70	2	3	19	59	149	352

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Table LXXVII.—Cancer (Sixth Revision, Nos. 140-205)—males : Age-specific death rates per million living from cancer at various sites and the percentage of mortality at each site to " all sites ", 1956, England and Wales

Males

I.S.C. No.	Site or organ	All ages	0–	5–	15–	25–	35–	45–	55–	65–	75–	85 and over	Per cent of all sites
140 141 142 143 144	Lip Tongue Salivary gland Floor of mouth Other parts of mouth and mouth unspecified	37	—	—	*1*	*1*	*1*	12	50	190	541	788	1·6
145 146 147 148	Oral mesopharynx Nasopharynx Hypopharynx Pharynx unspecified	20	*1*	*1*	*0*	*1*	*5*	10	47	109	192	262	0·9
150	Oesophagus	64	—	—	—	*1*	10	37	141	329	696	775	2·8
151	Stomach	360	—	—	*1*	10	76	293	909	1,907	2,938	2,712	15·8
152 153	Small intestine, including duodenum Large intestine, except rectum	182	—	*1*	*2*	12	34	113	350	937	1,997	2,450	8·0
154	Rectum	147	—	—	*0*	*4*	21	77	281	794	1,679	1,938	6·5
155	Biliary passages and liver (stated to be primary site)	24	*1*	—	*0*	*2*	*6*	24	53	123	188	*212*	1·1
157	Pancreas	86	—	—	*0*	*2*	16	74	223	442	712	538	3·8
161	Larynx	31	—	—	*0*	*1*	7	19	80	162	297	250	1·4
162 163	Bronchus and trachea, and lung specified as primary Lung and bronchus unspecified as to whether primary or secondary	726	—	*0*	*2*	25	172	918	2,625	3,473	2,473	1,288	31·8
170	Breast	3	—	—	—	—	*1*	*4*	*8*	16	*17*	*50*	0·1
177	Prostate	165	*2*	*0*	*0*	*0*	*0*	16	163	937	2,684	3,588	7·3
178	Testis	9	*1*	*1*	8	17	15	10	*6*	14	*16*	*38*	0·4
179	Other and unspecified male genital organs	7	—	—	—	*1*	*2*	*5*	12	30	64	*138*	0·3
180	Kidney	33	12	*4*	*1*	*3*	12	36	92	137	180	*125*	1·5
181	Bladder and other urinary organs	94	—	—	—	*1*	13	61	203	498	943	1,250	4·1
190 191	Skin (malignant melanoma) Skin (malignant neoplasm)	22	*1*	*1*	*1*	*4*	11	17	35	90	212	575	1·0
193	Malignant neoplasm of brain and other parts of nervous system	41	22	17	11	17	39	74	111	75	*19*	—	1·8
194	Thyroid gland	5	—	—	—	*0*	*2*	*5*	14	32	*24*	*25*	0·2
195	Other endocrine glands	3	*8*	*2*	—	*1*	*1*	*4*	*6*	*6*	*9*	—	0·1
196 197	Bone (including jawbone) Connective tissue	24	*2*	8	16	8	13	22	44	83	124	*150*	1·1
158 164 198	Peritoneum Mediastinum Secondary and unspecified malignant neoplasm of lymph nodes	11	*2*	*1*	*3*	*2*	*5*	13	28	48	43	*62*	0·5
200	Lymphosarcoma and reticulosarcoma	21	*4*	6	*5*	10	12	25	46	76	104	*62*	0·9
201	Hodgkin's disease	24	*1*	*3*	15	26	28	23	49	56	47	*12*	1·1
202	Other forms of lymphoma (reticulosis)	4	*3*	*1*	*1*	*2*	*4*	*6*	*9*	*8*	*2*	—	0·2
203	Multiple myeloma (plasmocytoma)	12	—	—	—	*0*	*3*	20	36	51	41	*12*	0·5
204	Leukaemia and aleukaemia	57	47	29	29	23	33	49	95	179	285	250	2·5
205	Mycosis fungoides	*1*	—	—	—	—	*1*	*1*	*1*	*4*	*3*	—	0·0
Others in 140–205	Remaining sites	62	*4*	*2*	*3*	*5*	18	53	168	296	434	488	2·7
140–205	**Total**	**2,274**	**109**	**75**	**101**	**178**	**561**	**2,019**	**5,885**	**11,102**	**16,962**	**18,038**	**100·0**
193 223 237	Malignant neoplasm of brain and other parts of nervous system Benign neoplasm of brain and other parts of nervous system Neoplasm of unspecified nature of brain and other parts of nervous system	65	33	22	16	27	61	112	173	131	45	*12*	

Table LXXVIII.—Cancer (Sixth Revision, Nos. 140-205)—females : Age-specific death rates per million living from cancer at various sites and the percentage of mortality at each site to " all sites ", 1956, England and Wales

Females

I.S.C. No.	Site or organ	All ages	0–	5–	15–	25–	35–	45–	55–	65–	75–	85 and over	Per cent of all sites
140 141 142 143 144	Lip Tongue Salivary gland Floor of mouth Other parts of mouth and mouth unspecified	15	—	—	—	*1*	*4*	10	25	50	94	185	0·8
145 146 147 148	Oral mesopharynx Nasopharynx Hypopharynx Pharynx unspecified	14	*1*	*1*	*0*	*2*	6	16	31	46	47	*87*	0·7
150	Oesophagus	41	—	—	—	*2*	6	26	67	152	307	387	2·2
151	Stomach	268	—	—	*2*	11	45	139	394	1,008	2,126	2,503	14·2
152 153	Small intestine, including duodenum Large intestine, except rectum	241	—	—	*2*	11	48	145	371	812	1,857	2,798	12·7
154	Rectum	103	—	*0*	*0*	*5*	27	74	163	382	670	1,081	5·4
155	Biliary passages and liver (stated to be primary site)	37	*1*	*0*	*1*	*1*	6	20	71	151	248	220	2·0
157	Pancreas	67	—	—	—	*2*	10	32	126	276	442	549	3·5
161	Larynx	7	—	—	*0*	*1*	*2*	6	17	24	34	*64*	0·4
162 163	Bronchus and trachea, and lung specified as primary Lung and bronchus unspecified as to whether primary or secondary	111	*1*	*1*	*2*	10	40	122	267	393	445	428	5·9
170	Breast	371	—	—	*1*	35	212	531	750	1,067	1,549	2,341	19·6
171	Cervix uteri	108	—	—	*1*	27	78	165	235	316	328	312	5·7
172	Corpus uteri	51	—	—	—	*1*	8	51	135	185	218	249	2·7
173 174	Other parts of uterus, including chorionepithelioma Uterus, unspecified	11	—	—	*1*	*2*	*5*	14	26	33	37	*46*	0·6
175	Ovary, Fallopian tube and broad ligament	121	*1*	*1*	*4*	13	74	191	323	317	348	306	6·4
176	Other and unspecified female genital organs	21	*1*	—	*0*	*0*	*4*	9	23	80	171	260	1·1
180	Kidney	20	14	*4*	*1*	*3*	*5*	14	38	72	91	121	1·1
181	Bladder and other urinary organs	37	—	*0*	—	—	*5*	14	44	148	304	526	2·0
190 191	Skin (malignant melanoma) Skin (malignant neoplasm)	19	*1*	*0*	*2*	6	8	16	20	49	121	324	1·0
193	Malignant neoplasm of brain and other parts of nervous system	28	18	10	8	15	29	47	67	42	*20*	—	1·5
194	Thyroid gland	12	—	—	*0*	*0*	*1*	8	22	49	75	*69*	0·6
195	Other endocrine glands	2	*7*	*2*	*1*	*1*	*2*	*4*	*4*	*2*	—	—	0·1
196 197	Bone (including jaw bone) Connective tissue	18	*6*	*6*	10	*5*	8	12	26	54	87	*104*	1·0
158 164 198	Peritoneum Mediastinum Secondary and unspecified malignant neoplasm of lymph nodes	10	*1*	*1*	*1*	*1*	*3*	9	21	35	49	*58*	0·5
200	Lymphosarcoma and reticulosarcoma	16	*2*	*2*	*3*	7	8	14	34	47	63	*69*	0·8
201	Hodgkin's disease	13	—	*2*	*6*	16	13	13	22	27	36	*12*	0·7
202	Other forms of lymphoma (reticulosis)	3	*2*	*0*	—	*0*	*2*	*2*	*7*	*7*	*9*	—	0·2
203	Multiple myeloma (plasmocytoma)	12	—	—	—	*1*	*1*	14	36	45	37	*12*	0·6
204	Leukaemia and aleukaemia	47	41	29	19	22	21	36	77	125	151	*92*	2·5
205	Mycosis fungoides	*0*	—	—	—	—	*0*	*1*	—	*1*	*4*	*6*	0·0
Others in 140–205	Remaining sites	66	*4*	*0*	*3*	*1*	16	55	119	254	381	474	3·5
140–205	**Total**	**1,891**	**100**	**61**	**71**	**201**	**697**	**1,809**	**3,559**	**6,250**	**10,350**	**13,682**	**100·0**
193 223 237	Malignant neoplasm of brain and other parts of nervous system Benign neoplasm of brain and other parts of nervous system Neoplasm of unspecified nature of brain and other parts of nervous system	48	23	19	11	22	45	78	116	83	85	*23*	

ACCIDENTAL AND VIOLENT DEATHS

In 1956 there were 21,870 deaths (12,992 males and 8,878 females) due to accidents and violence. The numbers have increased steadily for both males and females since 1952, and the crude death rates over this period have increased from 568 per million living to 604 for males and from 298 to 383 for females. The three principal contributors to the crude death rates were :

	Crude death rates per million living				Percentage increase by 1956	
	1952		1956			
	M	F	M	F	M	F
Motor vehicle accidents	149	42	174	56	17	33
Accidental falls	79	105	99	149	25	42
Suicide and self-inflicted injury ..	132	68	149	90	13	32

Between 1952 and 1956 the death rate from motor vehicle accidents increased by one-sixth for males and one-third for females.

Table LXXIX (below) shows that there has been little change during 1954–56 in the percentage of all male deaths which were due to violent causes ; the percentage of female deaths, 3·50 in 1956, was the highest recorded since the war years of 1941–45. The proportion of violent to total deaths was lower in 1956 than in the previous year for children under 15, but for the other age-groups shown the proportions for both sexes had increased.

Table LXXIX.—Accidents and violence : Proportion of deaths attributed to violent causes per 100 deaths from all causes by sex and age, 1901 to 1956, England and Wales

	Males					Females				
	All ages	0–	15–	35–	65 and over	All ages	0–	15–	35–	65 and over
1901–10 ..	5·05	3·22	12·88	7·22	2·31	2·31	2·85	3·06	2·18	1·54
1911–20 ..	5·69	3·74	15·69	7·16	2·29	2·31	2·95	2·97	2·26	1·63
1921–30 ..	5·48	4·43	15·49	7·06	2·37	2·49	3·06	4·02	2·74	1·79
1931–35 ..	6·05	5·60	20·29	7·37	2·55	3·04	4·11	5·54	3·31	2·25
1936–40 ..	7·30	7·30	29·58	8·67	2·89	4·10	5·73	9·52	4·82	2·83
1941–45 ..	9·13	10·34	46·29	9·46	2·85	4·56	8·25	12·26	5·58	2·74
1946	5·08	7·86	25·39	6·09	2·22	3·00	5·91	5·84	3·45	2·27
1947	4·89	7·65	24·86	6·09	2·14	2·97	5·86	5·53	3·55	2·22
1948	4·88	8·91	24·61	6·04	2·13	3·02	7·06	5·56	3·70	2·18
1949	4·62	9·47	27·04	5·87	1·96	2·72	7·02	5·80	3·34	2·01
1950	4·56	9·20	30·36	5·93	1·94	2·80	7·24	6·59	3·44	2·13
1951	4·42	10·22	34·74	5·68	1·85	2·73	7·36	8·21	3·42	2·06
1952	4·65	10·28	37·65	5·97	1·91	2·84	7·67	9·46	3·58	2·11
1953	4·75	9·63	38·86	6·18	2·13	3·09	7·43	10·10	4·01	2·35
1954	4·86	9·49	39·22	6·33	2·35	3·40	7·00	12·20	4·14	2·75
1955	4·84	10·44	43·29	6·21	2·24	3·39	7·91	12·81	4·35	2·68
1956	4·85	9·90	43·90	6·36	2·32	3·50	7·70	13·78	4·71	2·76

Table LXXX.—Accidents and violence : Death rates per million living by sex and age, 1901 to 1956, England and Wales

	All ages	0–	5–	10–	15–	20–	25–	35–	45–	55–	65–	75 and over
Males												
1901–10 ..	827	1,231	329	262	447	555	677	914	1,257	1,623	1,818	2,621
1911–20 ..	857	934	395	304	596	902	828	894	1,082	1,395	1,715	2,757
1921–30 ..	709	683	375	243	449	584	536	658	917	1,259	1,616	2,842
1931–35 ..	770	697	370	228	533	739	602	640	921	1,271	1,599	3,358
1936–40 ..	968	775	420	297	651	1,121	826	825	1,046	1,475	1,835	3,887
1941–45 ..	1,167	897	612	435	935	2,192	1,263	870	1,008	1,323	1,691	3,183
1946	622	688	328	251	414	565	453	478	582	864	1,213	2,612
1947	628	664	381	228	398	528	465	465	633	850	1,210	2,786
1948	562	585	318	179	350	458	398	406	574	844	1,136	2,320
1949	569	547	299	194	386	509	387	433	583	805	1,084	2,554
1949*	567	541	298	193	386	508	387	431	579	797	1,085	2,556
1950*	562	461	252	153	376	555	423	418	579	807	1,120	2,451
1951*	591	487	259	190	362	608	474	429	591	814	1,137	2,745
1952*	568	473	217	167	415	643	445	436	546	796	1,092	2,450
1953*	582	418	215	151	373	603	446	429	583	822	1,198	2,811
1954*	593	393	168	161	369	580	426	445	583	846	1,256	3,214
1955*	605	386	207	181	444	671	446	444	567	823	1,243	3,166
1956*	604	392	173	151	410	608	442	428	578	874	1,259	3,320
Females												
1901–10 ..	329	1,059	226	81	103	111	135	198	307	423	752	2,287
1911–20 ..	300	767	234	98	117	120	127	179	272	382	728	2,364
1921–30 ..	283	487	182	71	117	127	126	168	268	397	716	2,516
1931–35 ..	346	505	201	81	142	155	161	194	297	443	878	3,044
1936–40 ..	477	570	230	137	222	233	235	281	412	595	1,116	3,707
1941–45 ..	499	687	322	206	256	274	276	307	404	552	959	3,064
1946	326	494	149	70	83	86	116	152	225	351	661	2,725
1947	334	503	162	63	82	81	109	145	237	356	703	2,707
1948	306	434	153	63	72	76	99	137	231	347	614	2,341
1949	306	387	128	63	81	92	85	128	212	336	617	2,513
1949*	302	378	128	63	79	92	81	126	212	330	612	2,492
1950*	308	338	127	47	80	81	79	125	223	323	606	2,698
1951*	321	350	96	45	88	87	85	126	228	327	648	2,803
1952*	298	330	100	50	77	86	85	120	213	322	604	2,406
1953*	329	319	94	62	73	86	88	139	232	349	670	2,727
1954*	358	264	86	48	81	90	107	138	239	357	783	3,066
1955*	370	300	94	59	94	85	96	143	241	377	775	3,128
1956*	383	284	87	52	76	91	101	140	260	412	764	3,242

* According to the Sixth Revision of the International Classification. Other years according to the classification in use at the time.

Table LXXX (above) shows the death rates from violent causes per million living. Compared with 1955, there was a striking decrease in the male rates at ages 5 to 24 ; 1955 was, however, exceptional, and the 1956 rates compare less favourably with those for 1954. Female rates at ages 0–19 declined slightly more than did those for males. At ages 45 and over the rates for both sexes were higher in 1956 than in 1955, except for women aged 65–74. The mortality rate of 608 for men aged 20–24 compares unfavourably with the corresponding female rate of 91, though showing some improvement on that of 671 in 1955.

Motor and other vehicle accidents

In 1956 there were 3,655 male and 1,284 female deaths due to accidents involving motor vehicles on public highways ; 43 per cent of those who died were pedestrians and 11 per cent were pedal cyclists. In addition, 84 male and 13 female deaths were attributed to motor vehicle accidents occurring elsewhere than on public highways.

Table LXXXI.—Motor vehicle accidents: Death rates per million living by sex and age, and comparative mortality indices by sex, 1931 to 1956, England and Wales

	All ages	0–	10–	15–	20–	25–	35–	45–	55–	65–	75 and over	C.M.I.† (1938 =1·00)
Males												
1931–35 ..	208	184	93	204	368	210	133	153	206	363	678	1·12
1936–40 ..	216	159	86	176	363	209	152	171	257	411	749	1·01
1941–45 ..	199	198	113	152	227	193	149	160	228	353	556	0·92
1946	153	144	109	161	205	139	109	102	160	241	498	0·73
1947	146	134	75	127	209	139	106	111	147	246	460	0·70
1948	126	135	63	122	173	112	79	97	142	194	400	0·60
1949	140	123	80	147	226	117	103	101	137	229	451	0·67
1949* ..	142	126	83	150	232	118	105	101	138	232	454	0·68
1950* ..	151	104	60	177	279	164	106	102	153	242	439	0·72
1951* ..	161	112	88	178	308	174	112	117	160	231	505	0·77
1952* ..	149	105	73	165	301	150	123	105	144	219	403	0·71
1953* ..	158	98	61	170	307	164	110	126	160	245	518	0·75
1954* ..	161	77	57	194	323	165	116	127	170	259	564	0·76
1955* ..	171	83	64	234	388	170	125	130	164	273	540	0·81
1956* ..	174	86	61	236	344	182	121	138	185	270	587	0·83
Females												
1931–35 ..	68	106	34	49	50	31	29	49	95	181	267	1·17
1936–40 ..	64	84	30	49	48	29	27	45	85	173	279	1·02
1941–45 ..	56	106	42	42	40	29	26	37	61	107	172	0·86
1946	47	72	30	36	27	21	20	27	56	100	185	0·70
1947	47	71	26	37	23	17	22	33	54	100	177	0·69
1948	43	79	31	25	16	14	19	21	49	101	157	0·64
1949	41	65	32	32	30	10	16	22	44	95	151	0·60
1949* ..	41	66	32	32	30	10	16	22	44	95	151	0·61
1950* ..	46	64	25	40	30	17	19	35	48	84	200	0·67
1951* ..	49	58	22	47	37	19	23	35	54	101	198	0·71
1952* ..	42	52	21	34	31	19	18	28	43	94	168	0·62
1953* ..	45	56	25	36	37	16	18	33	49	87	181	0·65
1954* ..	51	45	15	36	37	23	23	32	63	120	218	0·72
1955* ..	55	52	26	58	45	22	26	32	57	121	235	0·78
1956* ..	56	47	22	42	40	26	26	38	63	129	236	0·79

* According to the Sixth Revision of the International Classification (Nos. E810–E835). Other years according to the classification in use at the time.

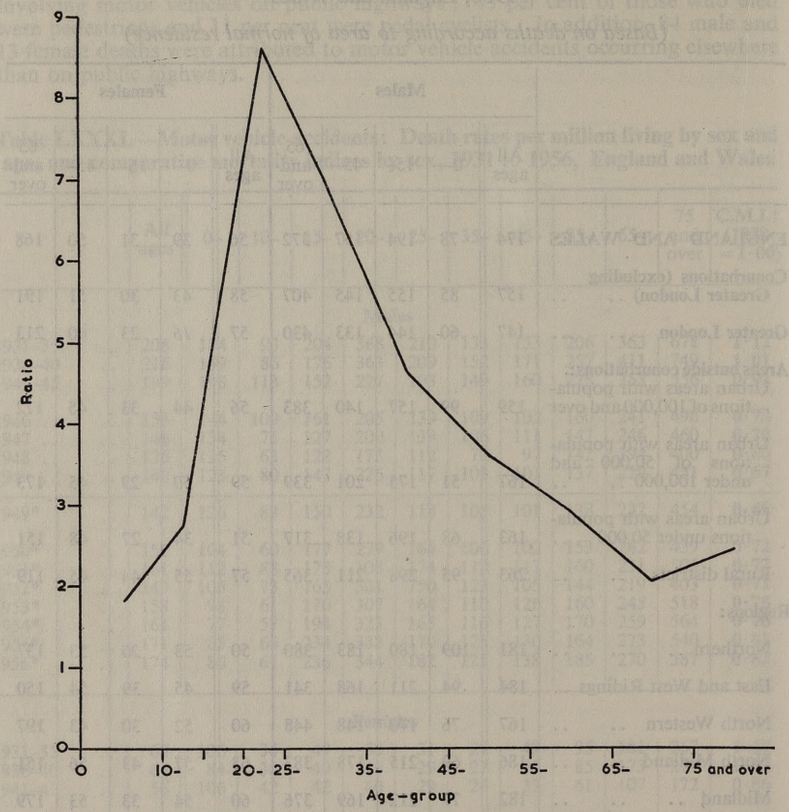
† C.M.Is. are based on civilian deaths and civilian populations for the years 1940–1949 inclusive.

Table LXXXII.—Motor vehicle accidents : Death rates per million living by sex and age in standard regions, conurbations, urban and rural aggregates, 1956, England and Wales

(*Based on deaths according to area of normal residence*)

	Males					Females				
	All ages	0–	15–	45–	65 and over	All ages	0–	15–	45–	65 and over
ENGLAND AND WALES	174	78	194	157	372	56	39	31	50	168
Conurbations (excluding Greater London)	157	85	155	145	407	58	43	30	51	191
Greater London	147	60	144	133	430	57	*16*	23	60	213
Areas outside conurbations:										
Urban areas with populations of 100,000 and over	159	99	157	140	383	56	44	33	45	172
Urban areas with populations of 50,000 and under 100,000	167	51	175	201	339	59	*50*	29	45	173
Urban areas with populations under 50,000 ..	163	68	196	138	317	51	34	27	48	151
Rural districts	263	95	298	211	365	57	55	44	45	119
Regions:										
Northern	181	109	180	183	380	50	53	*20*	53	137
East and West Ridings ..	184	94	211	168	341	59	45	39	54	150
North Western	167	76	170	148	448	60	52	30	43	197
North Midland	186	69	215	178	383	63	57	43	56	151
Midland	182	77	212	169	376	60	54	33	53	179
Eastern	205	85	274	160	316	51	*18*	42	48	129
London and South Eastern (excluding Greater London)	168	*55*	188	147	377	46	*34*	*19*	*37*	129
Southern	177	90	192	188	297	65	*35*	37	56	195
South Western	177	73	233	134	293	49	*30*	*32*	*34*	141
Wales (including Monmouthshire)	175	97	190	170	313	47	*41*	*29*	*38*	130

Diagram 20



Motor vehicle accidents : Ratio of male to female mortality at different ages, 1956, England and Wales

Table LXXXI (page 158) shows that the all ages death rates and the C.M.Is. for motor vehicle accidents were slightly higher in 1956 than in 1955. The mortality rate for young men aged 20–24, which except for a slight check in 1952–53 had risen 124 per cent from 173 per million in 1948 to 388 in 1955, fell in 1956 to 344. It was still, however, more than eight times the corresponding female rate. At ages 75 and over the male rate was 2·5 times the female (Diagram 20 above).

Table LXXXII (page 159) shows death rates from motor vehicle accidents per million living by sex and age in the standard regions and urban and rural aggregates, based on the area of usual residence of the deceased. The E.A.D.R. at ages 0–64 was highest for males in the Eastern region, 195 per million, and lowest in Greater London, 121 per million ; for females the highest rate, 50 per million, occurred in the North Midland region, and the lowest, 28 per million, in the London and South Eastern region (excluding Greater London) (Diagram 21, page 162). Among the urban and rural aggregates, the all ages

rate of 263 for males in rural districts was 51 per cent higher than the England and Wales rate of 174. Male rates at ages 15–64 were highest in the aggregate of rural districts, but at 0–14 and 65 and over there was an excess in the urban areas with populations of 100,000 and over. Among females the highest rates at ages 0–44 occurred in rural districts, but these had the lowest rates at ages 65 and over.

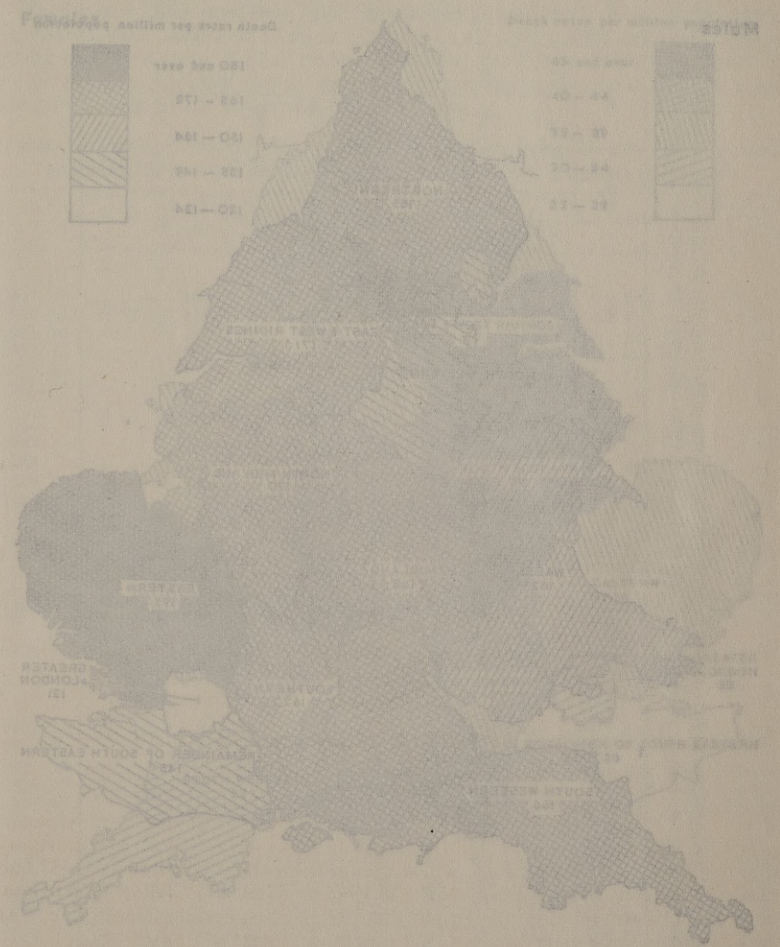
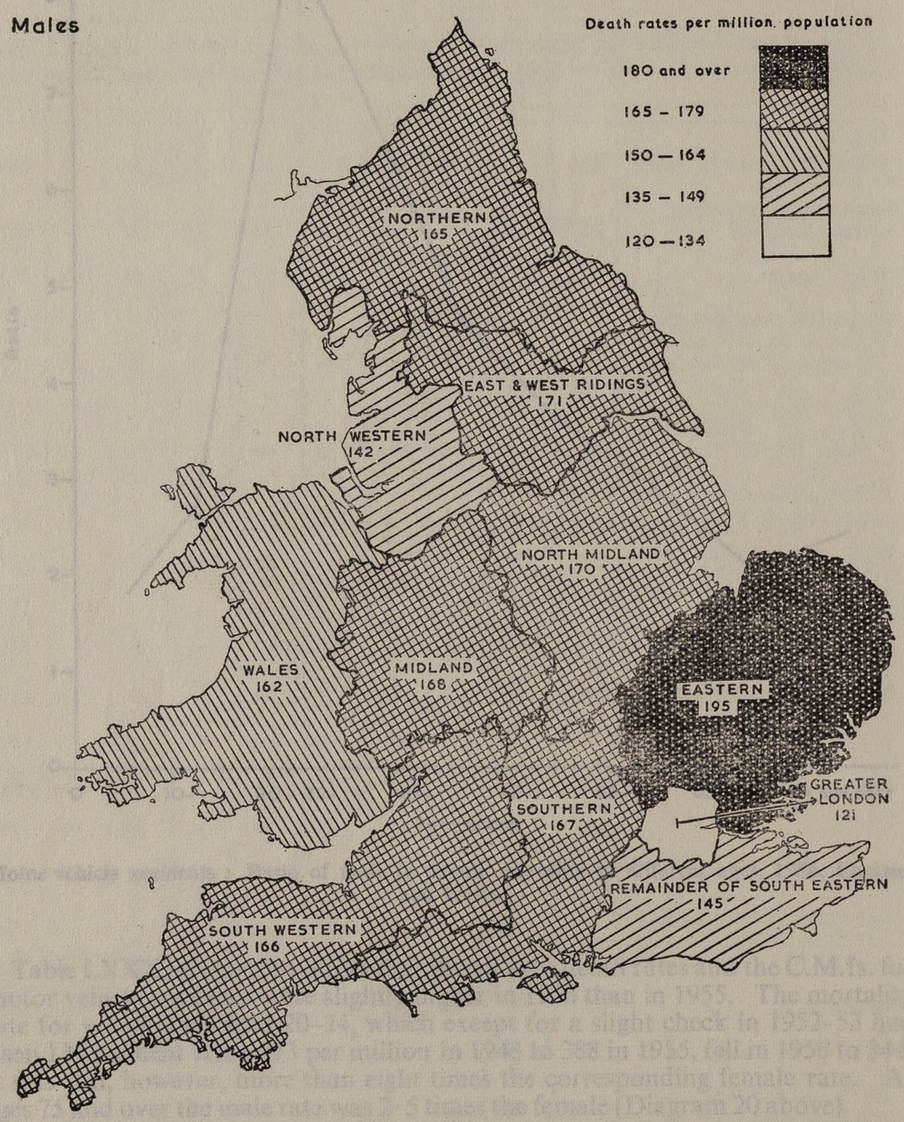
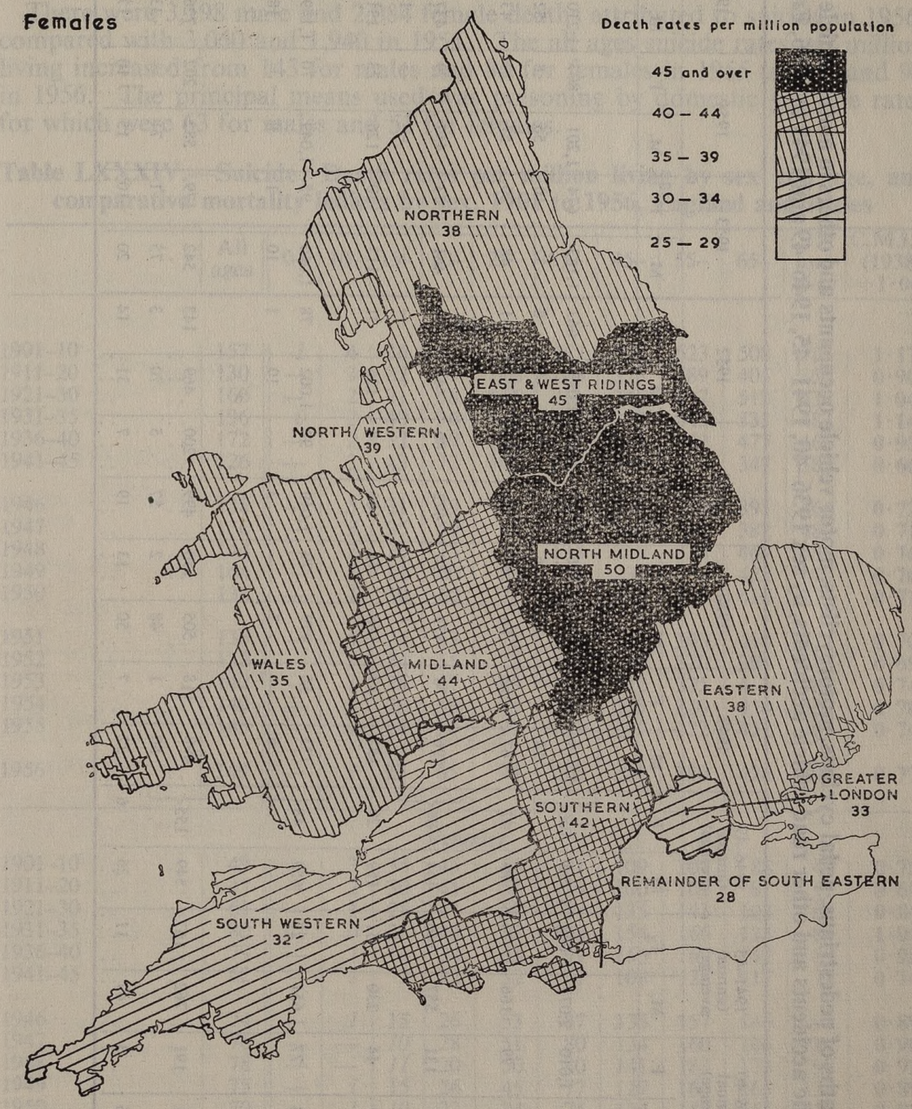


Diagram 21



Motor vehicle accidents, males : Equivalent average death rate per million living at ages 0–64 (based on usual residence of deceased), 1956. Standard regions of England and Wales

Diagram 21—*continued.*



Motor vehicle accidents. females : Equivalent average death rate per million living at ages 0–64 (based on usual residence of deceased), 1956. Standard regions of England and Wales

Table LXXXIII.—Deaths of pedestrians, pedal cyclists, motorcyclists, motor vehicle occupants and others in motor vehicle traffic accidents, motor vehicle non-traffic accidents and other road vehicle accidents, by sex 1936–40, 1941–45, 1946–49 and 1949 to 1956, England and Wales

	1936–40 (annual average)		1941–45 (annual average)		1946–49 (annual average)		1949		1950		1951		1952		1953		1954		1955		1956	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Pedestrians:																						
Motor vehicle traffic accidents ..	2,148	1,010	2,073	898	1,295	706	1,214	674	1,140	726	1,302	725	1,099	663	1,182	674	1,201	807	1,210	813	1,275	844
Motor vehicle non-traffic accidents							13	2	32	6	43	10	54	8	32	10	55	8	52	9	47	9
Other road vehicle accidents ..	194	79	166	70	79	47	67	51	76	51	59	43	73	31	48	26	57	27	43	31	45	29
Pedal cyclists:																						
Motor vehicle traffic accidents ..	777	131	557	140	464	86	496	78	475	80	473	80	443	74	461	73	457	79	437	84	458	67
Motor vehicle non-traffic accidents							—	—	1	—	—	—	—	—	—	—	—	—	1	—	1	—
Other road vehicle accidents ..	249	44	230	51	159	29	157	30	168	31	160	18	125	31	113	30	126	23	131	19	101	9
Motorcyclists:																						
Motor vehicle traffic accidents ..	1,018	77	651	27	659	48	733	56	979	79	1,019	94	1,002	78	1,040	95	1,049	70	1,179	89	1,132	88
Motor vehicle non-traffic accidents							6	—	7	—	3	—	10	1	10	1	8	—	18	—	5	—
Motor vehicle occupants and others:																						
Motor vehicle traffic accidents ..	631	191	762	167	549	155	498	118	505	150	499	200	469	143	542	179	582	202	726	270	790	285
Motor vehicle non-traffic accidents							50	1	48	2	57	5	70	3	75	1	71	—	33	2	31	4
Other road vehicle accidents ..	36	3	47	11	26	6	32	7	50	13	19	7	31	14	20	10	15	10	17	6	11	5

Table LXXXIII (page 164) shows numbers of deaths from motor and road vehicle accidents according to the type of road user. Deaths of pedestrians on public highways increased during 1952–56, from 1,099 to 1,275 for males and 663 to 844 for females, 16 and 27 per cent respectively. There were slightly fewer deaths of motorcyclists in 1956 than in 1955.

Suicides

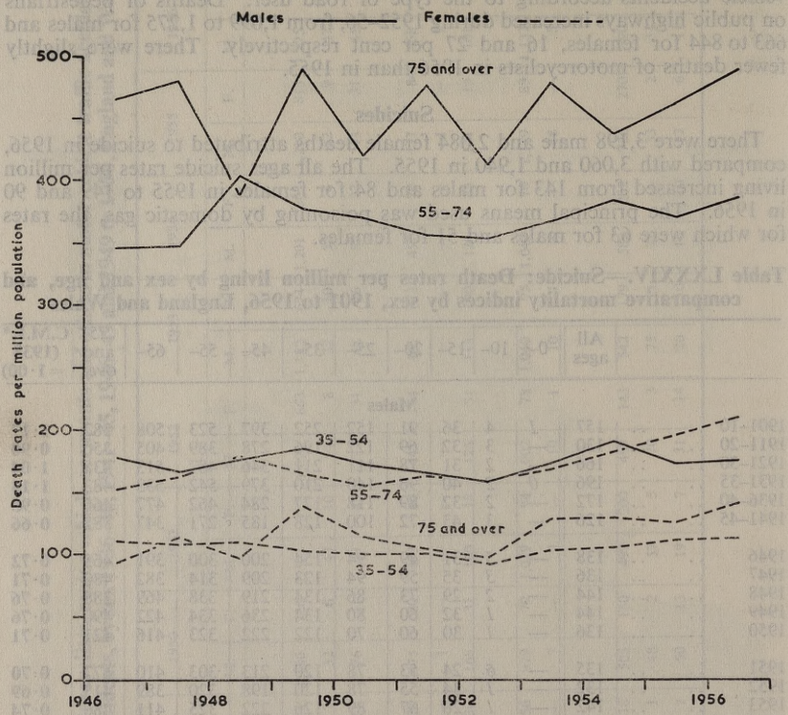
There were 3,198 male and 2,084 female deaths attributed to suicide in 1956, compared with 3,060 and 1,940 in 1955. The all ages suicide rates per million living increased from 143 for males and 84 for females in 1955 to 149 and 90 in 1956. The principal means used was poisoning by domestic gas, the rates for which were 63 for males and 51 for females.

Table LXXXIV.—Suicide: Death rates per million living by sex and age, and comparative mortality indices by sex, 1901 to 1956, England and Wales

	All ages	0–	10–	15–	20–	25–	35–	45–	55–	65–	75 and over	C.M.I.* (1938 =1·00)
Males												
1901–10	157	*1*	4	36	91	152	252	397	523	508	382	**1·17**
1911–20	130	—	3	32	69	122	196	278	389	405	350	**0·90**
1921–30	166	—	2	31	78	111	211	346	487	513	438	**1·04**
1931–35	196	*0*	*2*	40	96	140	210	379	542	533	483	**1·14**
1936–40	172	—	*2*	32	89	118	177	284	462	477	466	**0·95**
1941–45	126	—	3	43	72	100	128	185	271	347	382	**0·66**
1946	138	—	*5*	31	49	94	154	200	300	391	465	**0·72**
1947	136	—	*3*	35	59	94	123	209	314	382	480	**0·71**
1948	144	—	*2*	29	73	86	134	219	338	469	388	**0·76**
1949	144	—	*1*	32	60	80	134	236	334	422	490	**0·76**
1950	136	—	*1*	30	60	70	122	222	323	416	421	**0·71**
1951	135	—	*6*	24	53	78	120	213	303	410	477	**0·70**
1952	132	—	*1*	34	55	78	120	198	320	389	413	**0·69**
1953	142	—	*1*	28	67	89	126	222	325	411	480	**0·74**
1954	149	—	*3*	26	59	93	145	235	340	430	439	**0·78**
1955	143	—	*4*	26	54	97	130	213	322	422	463	**0·74**
1956	149	—	*2*	25	65	94	130	221	350	426	490	**0·77**
Females												
1901–10	49	—	3	34	45	56	81	109	108	88	49	**0·75**
1911–20	47	—	2	30	41	50	74	100	102	81	52	**0·69**
1921–30	63	—	*1*	25	43	57	87	135	143	108	63	**0·84**
1931–35	80	—	*0*	23	49	77	108	154	166	134	84	**1·01**
1936–40	79	—	*1*	14	38	65	99	155	169	142	89	**0·98**
1941–45	62	—	*1*	9	22	52	77	108	128	117	73	**0·74**
1946	74	—	*1*	15	26	53	87	135	157	146	92	**0·89**
1947	76	—	—	*10*	28	51	80	134	160	166	114	**0·90**
1948	78	—	—	*11*	20	50	80	141	183	173	98	**0·93**
1949	75	—	*1*	15	26	45	77	127	165	165	138	**0·89**
1950	70	—	*1*	*10*	23	34	75	124	157	153	115	**0·82**
1951	72	—	—	*9*	20	38	66	135	160	167	105	**0·84**
1952	68	—	*1*	*11*	*12*	35	66	118	154	164	97	**0·79**
1953	76	—	*3*	*10*	22	39	79	127	167	171	127	**0·89**
1954	81	—	—	*12*	23	52	77	135	167	198	130	**0·95**
1955	84	—	*1*	*7*	19	45	75	148	190	201	126	**0·97**
1956	90	—	*1*	*11*	27	49	71	156	203	217	141	**1·04**

* C.M.Is. are based on civilian deaths and civilian populations for the years 1940–1949 inclusive.

Diagram 22



Suicide : Death rates per million living, by sex at ages 35–54, 55–74, and 75 and over, 1946 to 1956, England and Wales

Table LXXXIV (page 165) shows the secular trend in suicide rates by sex and age since 1901. For both sexes the rates at ages 45 and over were higher in 1956 than in the year before ; the female rates were the highest for the single years shown in the table. Diagram 22 (above) shows the disparity between male and female rates at ages 35 and over. The excess of male over female rates becomes more marked with increasing age. The male rates at ages 35–54 differ little from those for females aged 55–74. The level of female rates is very similar in the age-groups 35–54 and 75 and over, and is considerably lower than at ages 55–74. In contrast with the male excess at ages 75 and over, and perhaps even contributing to it, is the fact that in this age-group far more women than men are resident in mental hospitals, and hence are in a more protected environment from the point of view of suicide than those living in the community ; at the end of 1953, for example, 1,151 females compared with 738 males per 100,000 home population aged 75 and over were resident in mental hospitals.*

Table LXXXV (page 167) shows that at ages 15 and over 42 per cent of males and 55 per cent of females who committed suicide used domestic gas poisoning as the agent. A higher proportion of men than women resorted to hanging and strangulation, 184 compared with 67 per 1,000. The proportionate use of domestic gas and other poisoning was much the same in each of the age-groups shown, whereas drowning was chosen more by the elderly, and firearms by younger persons.

* *The Registrar General's Statistical Review for the two years 1952–1953, Supplement on Mental Health.* H.M.S.O. price 11*s.* 6*d.* net.

Table LXXXV.—Suicide: Proportions per 1,000 deaths according to external agent, by sex and age in the period 1952–56, England and Wales

	Males					Females				
	All ages over 15	15–	35–	55–	75 and over	All ages over 15	15–	35–	55–	75 and over
Domestic gas poisoning ..	415	410	417	404	460	550	555	556	543	553
Other poisoning	125	148	148	110	65	209	204	224	199	199
Hanging or strangulation ..	184	183	176	193	177	67	68	67	68	61
Drowning	90	42	78	109	121	109	67	95	129	116
Firearms or explosives ..	66	88	69	61	42	4	11	6	2	1
Cutting and piercing instruments	53	27	41	65	83	15	18	12	17	16
Jumping from high place ..	21	25	20	20	29	26	28	23	25	42
Other agents	46	77	51	38	23	20	49	17	17	12
Total	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**

Table LXXXVI (page 168) gives the suicide rates per million living by sex and age in the standard regions and urban and rural aggregates. In the conurbations the same pattern showed as in 1955 : the highest rates among males aged 15–64 occurred in the South East Lancashire conurbation, and at ages 65 and over in the West Midlands conurbation. Among women, Greater London had the highest rates at ages 15–34 and the West Midlands conurbation at ages 35 and over. The rates for Merseyside were generally low in both years. Of the regions, Wales continued on the whole to show low rates for both sexes (Table LXXXVII, page 169); the sex-ratio of male to female rates at ages 65 and over, 4·11 : 1 was notably high.

Table LXXXVI.—Suicide: Death rates per million living and sex ratios by age in standard regions and urban and rural aggregates in the period 1952–56, England and Wales

		Rate per million living					Ratios of male to female rate (females =100)				
		All ages over 15	15–	35–	55–	65 and over	All ages over 15	15–	35–	55–	65 and over
ENGLAND AND WALES	M	188	69	173	332	429	186	223	165	189	257
	F	101	31	105	176	167					
Urban and rural aggregates	M	182	63	170	330	406	186	225	165	191	260
	F	98	28	103	173	156					
Conurbations	M	197	80	177	331	474	186	235	164	182	253
	F	106	34	108	182	187					
Areas outside conurbations :											
Urban areas with populations of 100,000 and over	M	191	74	168	321	472	162	239	127	161	242
	F	118	31	132	199	195					
Urban areas with populations of 50,000 and under 100,000	M	198	58	173	369	494	174	187	162	177	240
	F	114	31	107	208	206					
Urban areas with populations under 50,000	M	187	65	173	326	406	185	232	170	175	255
	F	101	28	102	186	159					
Rural districts	M	165	55	168	326	337	226	220	202	265	324
	F	73	25	83	123	104					
Regional summary :											
Northern	M	185	71	165	365	415	234	245	204	242	332
	F	79	29	81	151	125					
East and West Ridings	M	191	72	162	339	461	185	313	164	167	248
	F	103	23	99	203	186					
North Western	M	210	77	185	357	507	191	275	167	186	256
	F	110	28	111	192	199					
North Midland	M	192	57	179	357	457	198	219	175	209	260
	F	97	26	102	171	176					
Midland	M	190	65	172	344	518	178	191	161	178	248
	F	107	34	107	193	209					
Eastern	M	181	65	181	292	390	181	210	160	177	265
	F	100	31	113	165	147					
London and South Eastern	M	189	77	178	310	412	178	208	160	181	240
	F	106	37	111	171	172					
Southern	M	168	67	147	343	372	170	239	135	210	238
	F	99	28	109	163	156					
South Western	M	181	61	191	304	357	172	197	166	163	250
	F	105	31	115	186	143					
Wales (including Monmouthshire)	M	158	55	142	304	333	223	212	180	204	411
	F	71	26	79	149	81					
Conurbations :											
Tyneside	M	208	82	173	372	528	239	283	219	219	316
	F	87	29	79	170	167					
West Yorkshire	M	212	85	177	370	488	191	283	181	175	246
	F	111	30	98	211	198					
South East Lancashire	M	233	96	197	388	568	203	282	181	194	273
	F	115	34	109	200	208					
Merseyside	M	153	63	156	243	350	191	315	184	165	230
	F	80	20	85	147	152					
West Midlands	M	196	64	175	327	600	170	200	145	159	267
	F	115	32	121	206	225					
Greater London	M	190	82	176	315	426	178	210	156	183	241
	F	107	39	113	172	177					

Table LXXXVII.—Suicide: Death rates per million living expressed as a percentage of England and Wales rates, by sex and age in standard regions, conurbations and urban and rural aggregates in the period 1952–56, England and Wales

	Males					Females				
	All ages over 15	15–	35–	55–	65 and over	All ages over 15	15–	35–	55–	65 and over
ENGLAND AND WALES	100	100	100	100	100	100	100	100	100	100
Urban and rural aggregates	97	91	98	99	95	97	90	98	98	93
Conurbations	105	116	102	100	110	105	110	103	103	112
Areas outside conurbations:										
Urban areas with populations of 100,000 and over	102	107	97	97	110	117	100	126	113	117
Urban areas with populations of 50,000 and under 100,000	105	84	100	111	115	113	100	102	118	123
Urban areas with populations under 50,000	99	94	100	98	95	100	90	97	106	95
Rural districts	88	80	97	98	79	72	81	79	70	62
Regional summary :										
Northern	98	103	95	110	97	78	94	77	86	75
East and West Ridings	102	104	94	102	107	102	74	94	115	111
North Western	112	112	107	108	118	109	90	106	109	119
North Midland	102	83	103	108	107	96	84	97	97	105
Midland	101	94	99	104	121	106	110	102	110	125
Eastern	96	94	105	88	91	99	100	108	94	88
London and South Eastern	101	112	103	93	96	105	119	106	97	103
Southern	89	97	85	103	87	98	90	104	93	93
South Western	96	88	110	92	83	104	100	110	106	86
Wales (including Monmouthshire)	84	80	82	92	78	70	84	75	85	49
Conurbations :										
Tyneside	111	119	100	112	123	86	94	75	97	100
West Yorkshire	113	123	102	111	114	110	97	93	120	119
South East Lancashire	124	139	114	117	132	114	110	104	114	125
Merseyside	81	91	90	73	82	79	65	81	84	91
West Midlands	104	93	101	98	140	114	103	115	117	135
Greater London	101	119	102	95	99	106	126	108	98	106

Accidents in the home and residential institutions

In 1956 there were 6,908 deaths from accidents in the home and in residential institutions, compared with 6,651 in 1955 and 6,617 in 1954. Deaths of people aged 75 and over accounted for 58 per cent of the total in 1956. Residential institutions include : almshouses, homes and infirmaries for the elderly ; children's homes ; boarding schools (including residential public schools) ; mental hospitals and mental deficiency institutions ; prisons and borstal establishments.

Of the 2,516 male and 4,392 female domestic deaths in 1956, 374 male and 314 female were of children under 5 years (Table LXXXVIII, page 171). The majority of these, 251 males and 177 females, were reported to have died either of suffocation by the inhalation or ingestion of food, etc., or by mechanical suffocation in bed or cradle. The only other causes of any importance were burns and scalds, which caused 34 male and 71 female deaths. Of the 58 girls who died of burns by fire, 36 were aged 3 or 4 and they outnumbered the boys by 6 to 1.

Table LXXXIX (page 174) shows the numbers of deaths from accidents in the home and residential institutions by sex and age in 1956. There were 121 accidental deaths from barbiturate poisoning, compared with 106 in 1955. Gas poisoning accounted for 740 deaths, and of these 265 occurred in people aged 15–64. Of 4,359 deaths due to falls, 1,084 (25 per cent) were classified as falls on the same level and of these 892 were of people aged 75 and over. Only 47 deaths were attributed to falls from ladders. The number of unspecified falls, 1,974, is large, but 1,587 of these occurred in people aged 75 and over, in many cases, no doubt, people who were living alone (more detailed information will often not be obtainable). Female deaths due to burning clothing numbered 290, of which 113 were caused by open fires. The distribution of these 290 deaths over the age-groups (205 at ages 15 and over) indicates that it is not only where there are children that fireguards are needed.

Table LXXXVIII.—Accidents in the home and residential institutions: Deaths by cause and sex at ages under 5 years, 1956, England and Wales

Int. Classn. No.	Cause of death		Accidents in the home						Accidents in residential institutions					
			Total 0–4 years	Under 1 year	1 year	2 years	3 years	4 years	Total 0–4 years	Under 1 year	1 year	2 years	3 years	4 years
E870 ..	Poisoning by morphine and other opium derivatives	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E871 ..	Poisoning by barbituric acid and derivatives ..	M	1	—	1	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E872 ..	Poisoning by aspirin and salicylates	M	1	—	—	1	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E873 ..	Poisoning by bromides	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E874 ..	Poisoning by other analgesic and soporific drugs ..	M	1	—	—	—	—	1	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E875 ..	Poisoning by sulphonamides	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E876 ..	Poisoning by strychnine	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	2	—	1	—	—	1	—	—	—	—	—	—
E877 ..	Poisoning by belladonna, hyoscine and atropine ..	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E878 ..	Poisoning by other and unspecified drugs	M	4	1	2	1	—	—	—	—	—	—	—	—
		F	2	—	1	—	1	—	—	—	—	—	—	—
E879 ..	Poisoning by noxious foodstuffs	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E880 ..	Poisoning by alcohol	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E881 ..	Poisoning by petroleum products	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E882 ..	Poisoning by industrial solvents	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E883 ..	Poisoning by corrosive aromatics, acids and caustic alkalis	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E884 ..	Poisoning by mercury and its compounds	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E885 ..	Poisoning by lead and its compounds	M	2	—	—	2	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E886 ..	Poisoning by arsenic and antimony, and their compounds	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E887 ..	Poisoning by fluorides	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E888 ..	Poisoning by other and unspecified solid and liquid substances	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	1	—	1	—	—	—	—	—	—	—	—	—
E890 ..	Poisoning by utility (illuminating) gas	M	6	3	1	1	—	1	—	—	—	—	—	—
		F	4	1	1	—	1	1	—	—	—	—	—	—
E891 ..	Poisoning by motor vehicle exhaust	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—

Table LXXXVIII—*continued.*

Int. Classn. No.	Cause of death		Accidents in the home						Accidents in residential institutions					
			Total 0–4 years	Under 1 year	1 year	2 years	3 years	4 years	Total 0–4 years	Under 1 year	1 year	2 years	3 years	4 years
E892 ..	Poisoning by other carbon monoxide gas	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	3	2	1	—	—	—	—	—	—	—	—	—
E893 ..	Poisoning by cyanide gas	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E894 ..	Poisoning by other and unspecified gases and vapours	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E900 ..	Fall on stairs	M	2	1	—	—	—	1	—	—	—	—	—	—
		F	1	—	—	—	—	1	—	—	—	—	—	—
E901 ..	Fall from ladders	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E902 ..	Other falls from one level to another	M	12	5	3	3	1	—	1	1	—	—	—	—
		F	12	3	3	4	1	1	—	—	—	—	—	—
E903 ..	Fall on same level	M	1	—	1	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E904 ..	Unspecified falls	M	3	—	3	—	—	—	—	—	—	—	—	—
		F	1	—	—	1	—	—	—	—	—	—	—	—
E910 ..	Blow from falling object	M	4	—	—	2	—	2	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E911 ..	Accident caused by vehicle	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E912 ..	Accident caused by machinery	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E913 ..	Accident caused by cutting and piercing instruments	M	3	—	1	1	—	1	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E914 ..	Accident caused by electric current	M	1	—	—	—	—	1	—	—	—	—	—	—
		F	1	—	—	—	1	—	—	—	—	—	—	—
E915 ..	Accident caused by explosion of pressure vessel ..	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E916 ..	Accident caused by fire and explosion of combustible material	M	17	2	6	3	3	3	—	—	—	—	—	—
		F	58	5	8	9	18	18	—	—	—	—	—	—
E917 ..	Accident caused by hot substance, corrosive liquid and steam	M	17	2	6	4	5	—	—	—	—	—	—	—
		F	13	1	6	3	2	1	—	—	—	—	—	—
E918 ..	Accident caused by radiation	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E919 ..	Accident caused by firearms	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E920 ..	Foreign body entering eye and adnexa	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E921 ..	Inhalation and ingestion of food causing obstruction or suffocation	M	144	136	5	2	1	—	3	3	—	—	—	—
		F	94	82	4	3	3	2	6	2	2	1	1	—
E922 ..	Inhalation and ingestion of other object causing obstruction or suffocation	M	7	4	1	1	1	—	—	—	—	—	—	—
		F	7	5	1	—	1	—	—	—	—	—	—	—
E923 ..	Foreign body entering other orifice	M	1	—	—	1	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E924 ..	Accidental mechanical suffocation in bed and cradle	M	107	106	1	—	—	—	2	2	—	—	—	—
		F	83	79	4	—	—	—	2	1	1	—	—	—
E925 ..	Accidental mechanical suffocation in other and unspecified circumstances	M	2	1	1	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E926 ..	Lack of care of infants under 1 year of age	M	16	16	—	—	—	—	1	1	—	—	—	—
		F	7	7	—	—	—	—	1	1	—	—	—	—
E927 ..	Accidents caused by bites and stings of venomous animals and insects	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E928 ..	Other accidents caused by animals	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E929 ..	Accidental drowning and submersion	M	10	—	7	2	1	—	—	—	—	—	—	—
		F	9	3	3	3	—	—	1	—	1	—	—	—
E930 ..	High and low air pressure	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E931 ..	Excessive heat and insolation	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	1	1	—	—	—	—
E932 ..	Excessive cold	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E933 ..	Hunger, thirst and exposure	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E934 ..	Cataclysm	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E935 ..	Lightning	M	—	—	—	—	—	—	—	—	—	—	—	—
		F	—	—	—	—	—	—	—	—	—	—	—	—
E936 ..	Other and unspecified accidents	M	5	2	1	—	—	2	—	—	—	—	—	—
		F	4	3	1	—	—	—	1	—	1	—	—	—
E870–E936	**All accidental deaths**	M	**367**	**279**	**40**	**24**	**12**	**12**	**7**	**7**	—	—	—	—
		F	**302**	**191**	**35**	**23**	**28**	**25**	**12**	**5**	**5**	**1**	**1**	—

Table LXXXIX.—Accidents in the home and residential institutions : Deaths by cause, sex, and age, 1956, England and Wales

Int. List No. (6th Revision) Codes 0 and 7	Cause of death		All ages	0–4	5–14	15–44	45–64	65–74	75 and over
E870–E888	Poisoning	M	76	9	1	13	33	7	13
		F	119	5	—	17	62	18	17
E871 ..	Accidental poisoning by barbituric acid and derivatives	M	44	1	—	10	21	3	9
		F	77	—	—	9	43	13	12
E872 ..	Accidental poisoning by aspirin and salicylates	M	7	1	—	1	2	2	1
		F	11	—	—	1	7	—	3
E890–E895	Gas poisoning	M	303	6	9	58	82	61	87
		F	437	7	8	38	87	74	223
E900 ..	Fall on stairs	M	360	2	—	18	48	83	209
		F	501	1	—	9	45	119	327
E901 ..	Fall from ladders	M	37	—	1	5	8	15	8
		F	10	—	—	—	—	6	4
E902 ..	Other falls from one level to another	M	169	13	1	17	28	24	86
		F	224	12	1	3	18	34	156
E903 ..	Fall on same level	M	269	1	—	1	17	38	212
		F	815	—	—	2	31	102	680
E904 ..	Unspecified falls	M	553	3	1	10	36	108	395
		F	1,421	1	—	5	32	191	1,192
E914 ..	Accidents caused by electric current	M	31	1	1	23	4	1	1
		F	13	1	—	3	7	1	1
E916 ..	Accidents caused by fire and explosion of combustible material	M	170	17	10	14	19	33	77
		F	417	58	44	26	48	71	170
	Burns by clothing	M	50	9	6	2	3	11	19
		F	290	44	41	19	36	43	107
	from domestic fire (open)	M	21	5	6	—	1	4	5
		F	113	22	28	5	19	11	28
	gas fire, stove, etc.	M	2	—	—	—	—	—	2
		F	37	5	1	—	4	9	18
	electric fire	M	3	—	—	—	—	2	1
		F	49	1	4	6	2	8	28
	other specified	M	18	2	—	1	2	4	9
		F	47	9	3	3	7	11	14
	not specified	M	6	2	—	1	—	1	2
		F	44	7	5	5	4	4	19
	Burns by falling into fire	M	41	1	—	1	5	8	26
		F	35	—	1	—	4	7	23
	Burns by conflagration	M	48	4	3	9	4	9	19
		F	46	5	2	6	5	10	18
	Burns by other specified means	M	30	2	1	2	7	5	13
		F	45	9	—	1	3	10	22
	Burns by means not specified	M	1	1	—	—	—	—	—
		F	1	—	—	—	—	1	—
E917 ..	Accidents caused by hot substance, corrosive liquid and steam	M	45	17	—	1	4	6	17
		F	75	13	1	4	4	12	41
E921 ..	Inhalation and ingestion of food causing obstruction or suffocation	M	202	147	1	18	23	5	8
		F	160	100	1	16	23	9	11
E924 ..	Accidental mechanical suffocation in bed or cradle	M	118	109	1	4	3	—	1
		F	92	85	—	3	4	—	—
E929 ..	Accidental drowning and submersion	M	41	10	3	4	12	5	7
		F	31	10	—	2	8	5	6
Rem. of E870–E936	Other accidents	M	142	39	20	33	18	15	17
		F	77	21	4	12	10	10	20
E870–E936	**All accidents in the home and residential institutions**	M	**2,516**	**374**	**49**	**219**	**335**	**401**	**1,138**
		F	**4,392**	**314**	**59**	**140**	**379**	**652**	**2,848**

Table XC (page 176) shows the number of deaths and Table XCI (page 177) the death rate per million from various types of accidents in the home and residential institutions by sex and age from 1952 to 1956. The death rate from gas poisoning decreased for both sexes in 1956 compared with 1955 at ages under 5 and 65 and over. The excess of female over male rates for burns and scalds is very marked at ages under 75, but not so great at 75 and over. The apparent sudden increase in 1954 in the death rate from unspecified falls was due to changes in assignment. The all ages rates were 26 and 61 per million in 1956 compared with 21 and 58 in 1955 and these increases were reflected in each age-group for males and at ages 15–44 and 65 and over for females.

Table XCII (page 178) shows the number of deaths from accidents in the home and residential institutions by month of occurrence. With the exception of drowning more deaths occurred in the winter than in the summer months. This seems reasonable in the case of poisoning, falls and burning, but it is not so apparent why deaths from suffocation should follow the same pattern. In 1956 the quarterly deaths from these causes were :

	Jan.-Mar.	April-June	July-Sept.	Oct.-Dec.
E921 Inhalation and ingestion of food	120	84	70	84
E924 Accidental mechanical suffocation in bed and cradle	69	40	38	58

The seasonal variation in these deaths resembles that of respiratory infections (see pages 69 and 70) and lends some further support to the view that a number of these deaths, especially among young children, are due not to accidents but to rapidly fatal infections.

Table XC.—Accidents in the home and residential institutions : Deaths by cause and sex at certain ages, 1952 to 1956, England and Wales

Year		All causes		Gas poisoning (E890)		Burns and scalds (E916–E918)		Falls on stairs, from ladders and from one level to another (E900–E902)		Fall on same level (E903)		Unspecified falls (E904)		Other accidents (Rem. of E870–E936)	
		Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
1952.. ..	All ages	257,760	239,724	177	284	191	492	485	710	287	854	182	495	633	436
1953.. ..		259,490	244,039	252	302	200	398	487	655	371	1,003	224	785	623	595
1954.. ..		259,797	242,099	250	364	205	493	565	747	344	826	462	1,244	626	491
1955.. ..		266,976	251,888	290	452	258	472	560	732	271	787	447	1,340	598	444
1956.. ..		267,904	253,427	273	426	215	492	566	735	269	815	553	1,421	640	503
1952.. ..	0–4	12,593	9,318	6	4	51	88	22	20	4	1	2	1	383	267
1953.. ..		12,244	9,284	11	2	53	51	21	16	2	—	1	1	312	261
1954.. ..		11,391	8,270	9	2	42	62	19	7	—	1	1	—	343	201
1955.. ..		11,048	8,203	7	9	42	60	18	14	2	—	2	2	326	210
1956.. ..		10,946	7,984	6	4	34	71	15	13	1	—	3	1	315	225
1952.. ..	5–14	1,734	1,177	2	4	12	53	4	1	1	—	—	1	23	4
1953.. ..		1,708	1,216	5	2	12	32	10	—	—	1	—	—	34	11
1954.. ..		1,549	1,060	5	5	12	38	5	3	—	1	—	—	28	10
1955.. ..		1,625	1,128	5	—	15	50	9	3	1	—	—	—	24	10
1956.. ..		1,525	1,021	8	8	10	45	2	1	—	—	1	—	28	5
1952.. ..	15–44	16,454	12,316	32	33	4	34	41	12	3	3	1	4	97	37
1953.. ..		15,297	11,896	43	29	11	25	49	15	5	3	1	2	95	68
1954.. ..		14,907	11,409	38	33	5	37	42	12	3	3	5	3	102	65
1955.. ..		14,600	10,468	44	31	16	35	42	15	—	1	6	4	96	55
1956.. ..		14,036	10,071	49	36	15	30	40	12	1	2	10	5	104	55
1952.. ..	45–64	68,914	46,135	36	58	16	69	70	65	13	38	13	16	77	72
1953.. ..		69,529	45,605	55	69	27	56	96	66	17	34	13	27	93	97
1954.. ..		69,668	45,273	47	80	31	57	104	65	23	30	25	35	83	105
1955.. ..		71,071	45,415	72	69	32	52	103	66	9	24	28	52	83	79
1956.. ..		71,903	45,071	69	84	23	52	84	63	17	31	36	32	106	117
1952.. ..	65–74	73,060	61,712	49	63	28	80	111	144	58	132	43	80	28	23
1953.. ..		73,936	61,949	49	65	26	79	107	126	76	148	49	121	53	88
1954.. ..		73,606	61,625	57	72	40	96	118	165	60	121	98	200	37	58
1955.. ..		74,874	63,457	62	108	48	81	102	167	49	112	77	177	34	42
1956.. ..		75,172	63,062	56	72	39	83	122	159	38	102	108	191	38	45
1952.. ..	75 and over	85,005	109,066	52	122	80	168	237	468	208	680	123	393	25	33
1953.. ..		86,776	114,089	89	135	71	155	204	432	271	817	160	634	36	70
1954.. ..		88,676	114,462	94	172	75	203	277	495	258	670	333	1,006	33	52
1955.. ..		93,758	123,217	100	235	105	194	286	467	210	650	334	1,105	35	48
1956.. ..		94,322	126,218	85	222	94	211	303	487	212	680	395	1,192	49	56

(72 569)

Table XCI.—Accidents in the home and residential institutions: Death rates per million living, by cause and sex at certain ages, 1952 to 1956, England and Wales

Year		All causes		Gas poisoning (E890)		Burns and scalds (E916–E918)		Falls on stairs, from ladders and from one level to another (E900–E902)		Fall on same level (E903)		Unspecified falls (E904)		Other accidents (Rem. of E870–E936)	
		Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
1952.. ..	All ages	12,210	10,493	8·4	12	9·0	22	23	31	14	37	8·6	22	30	19
1953.. ..		12,237	10,655	12	13	9·4	17	23	29	17	44	11	34	29	26
1954.. ..		12,204	10,532	12	16	9·6	21	27	32	16	36	22	54	29	21
1955.. ..		12,482	10,927	14	20	12	20	26	32	13	34	21	58	28	19
1956.. ..		12,451	10,947	13	18	10	21	26	32	13	35	26	61	30	22
1952.. ..	0–4	7,020	5,446	*3·3*	*2·3*	28	51	12	12	*2·2*	*0·6*	*0·1*	*0·6*	213	156
1953.. ..		7,061	5,623	*6·3*	*1·2*	31	31	12	*9·7*	*1·2*	—	*0·6*	*0·6*	180	158
1954.. ..		6,689	5,096	*5·3*	*1·2*	25	38	*11*	*4·3*	—	*0·6*	*0·6*	—	201	124
1955.. ..		6,568	5,124	*4·2*	*5·6*	25	37	*11*	*8·7*	*1·2*	—	*1·2*	*1·2*	194	131
1956.. ..		6,488	4,978	*3·6*	*2·5*	20	44	*8·9*	*8·0*	*0·6*	—	*1·8*	*0·6*	187	140
1952.. ..	5–14	539	382	*0·6*	*1·3*	*3·7*	17	*1·2*	*0·3*	*0·3*	—	—	*0·3*	7·2	*1·3*
1953.. ..		515	383	*1·5*	*0·6*	*3·6*	10	*3·0*	—	—	*0·3*	—	—	10	*3·5*
1954.. ..		457	327	*1·5*	*1·5*	*3·5*	12	*1·5*	*0·9*	—	*0·3*	—	—	8·3	*3·1*
1955.. ..		471	342	*1·5*	—	*4·3*	15	*2·6*	*0·9*	*0·3*	—	—	—	7·0	*3·0*
1956.. ..		434	304	*2·3*	*2·4*	*2·8*	13	*0·6*	*0·3*	—	—	*0·3*	—	8·0	*1·5*
1952.. ..	15–44	1,807	1,312	3·5	3·5	*0·4*	3·6	4·5	*1·3*	*0·3*	*0·3*	*0·1*	*0·4*	11	3·9
1953.. ..		1,687	1,278	4·7	3·1	*1·2*	2·7	5·4	*1·6*	*0·6*	*0·3*	*0·1*	*0·2*	10	7·3
1954.. ..		1,656	1,235	4·2	3·6	*0·6*	4·0	4·7	*1·3*	*0·3*	*0·3*	*0·6*	*0·3*	11	7·0
1955.. ..		1,627	1,142	4·9	3·4	*1·8*	3·8	4·7	*1·6*	—	*0·1*	*0·7*	*0·4*	11	6·0
1956.. ..		1,570	1,107	5·5	4·0	*1·7*	3·3	4·5	*1·3*	*0·1*	*0·2*	*1·1*	*0·5*	12	6·0
1952.. ..	45–64	13,788	8,042	7·2	10	*3·2*	12	14	11	*2·6*	6·6	*2·6*	*2·8*	15	13
1953.. ..		13,679	7,867	11	12	5·3	9·7	19	11	*3·3*	5·9	*2·6*	4·7	18	17
1954.. ..		13,478	7,732	9·1	14	6·0	9·7	20	11	4·4	5·1	4·8	6·0	16	18
1955.. ..		13,535	7,682	14	12	6·1	8·8	20	11	*1·7*	4·1	5·3	8·8	16	13
1956.. ..		13,493	7,555	13	14	4·3	8·7	16	11	*3·2*	5·2	6·8	5·4	20	20
1952.. ..	65–74	53,057	32,310	36	33	20	42	81	75	42	69	31	42	20	12
1953.. ..		53,733	32,148	36	34	19	41	78	65	55	77	36	63	39	46
1954.. ..		53,338	31,635	41	37	29	49	86	85	43	62	71	103	27	30
1955.. ..		54,217	32,343	45	55	35	41	74	85	35	57	56	90	25	21
1956.. ..		54,237	31,817	40	36	28	42	88	80	27	51	78	96	27	23
1952.. ..	75 and over	137,105	107,454	84	120	129	166	382	461	335	670	198	387	40	33
1953.. ..		137,959	109,385	141	129	113	149	324	414	431	783	254	608	57	67
1954.. ..		137,482	105,592	146	159	116	187	429	457	400	618	516	928	51	48
1955.. ..		143,801	110,707	153	211	161	174	439	420	322	584	512	993	54	43
1956.. ..		143,129	110,138	129	194	143	184	460	425	322	593	599	1,040	74	49

Table XCII.—Accidents in the home and residential institutions : Deaths by month of occurrence, 1953 to 1956, England and Wales

International Statistical Classification No.	Cause of death		PERSONS											
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
E870–E888 ..	Poisoning	1953	14	19	15	11	12	12	16	18	20	18	10	19
		1954	13	16	14	11	20	14	14	14	13	16	13	16
		1955	21	15	20	16	15	16	17	15	12	13	16	13
		1956	15	15	19	20	19	16	8	18	13	19	21	12
E890–E895 ..	Gas poisoning	1953	80	76	54	43	29	33	25	29	33	57	55	61
		1954	77	109	61	52	44	32	26	33	25	40	66	73
		1955	123	103	112	47	46	28	37	23	34	55	87	81
		1956	89	128	75	60	42	38	24	36	36	60	76	80
E900	Fall on stairs	1953	85	71	56	59	55	34	43	59	49	67	67	103
		1954	80	92	79	62	62	50	57	66	60	78	66	107
		1955	106	78	89	58	65	64	56	60	63	69	83	92
		1956	101	93	98	62	59	45	45	50	56	66	78	94
E901	Fall from ladders	1953	1	1	7	3	6	4	7	1	5	4	3	2
		1954	3	3	4	6	5	5	4	3	1	6	4	3
		1955	4	4	3	2	1	2	3	5	4	1	5	3
		1956	2	1	5	3	7	4	6	3	5	3	4	3
E902	Other falls from one level to another ..	1953	37	31	24	28	31	27	32	31	35	38	24	28
		1954	38	25	38	30	28	36	34	32	39	32	33	34
		1955	49	34	32	42	25	35	30	21	22	21	23	36
		1956	35	31	37	28	36	27	35	30	30	38	37	29
E903	Fall on same level	1953	142	137	134	90	89	110	104	97	109	126	96	123
		1954	124	151	118	99	101	81	81	77	78	78	81	111
		1955	108	90	97	80	69	85	70	78	78	85	104	99
		1956	96	115	119	87	103	86	85	95	76	69	72	88
E904	Unspecified falls	1953	88	76	79	78	56	58	89	66	103	93	107	125
		1954	153	173	187	145	138	105	131	114	122	139	137	168
		1955	237	150	224	154	162	121	124	104	96	128	129	154
		1956	200	248	189	170	151	123	127	131	139	148	157	195
E916	Accident caused by fire and explosion of combustible material	1953	68	89	48	44	31	21	28	18	21	37	39	50
		1954	89	113	60	57	27	38	33	28	20	24	44	68
		1955	106	81	103	51	35	31	18	21	16	40	41	75
		1956	86	120	73	54	31	29	19	16	18	23	55	69
E917	Accident caused by hot substance, etc. ..	1953	5	8	13	8	5	10	6	4	6	8	18	11
		1954	14	13	7	15	7	4	8	8	1	7	10	7
		1955	12	9	17	9	10	10	6	5	8	7	6	8
		1956	19	15	13	11	10	10	4	5	7	9	9	7
E914	Accident caused by electric current ..	1953	3	4	—	3	4	2	4	5	3	2	4	2
		1954	3	1	4	3	3	1	4	7	6	5	5	3
		1955	3	2	1	2	3	2	4	9	3	1	6	5
		1956	3	3	6	2	2	3	2	2	3	5	7	6
E921	Inhalation and ingestion of food	1953	36	38	33	31	28	21	19	12	16	22	25	26
		1954	36	33	36	39	35	23	19	10	27	37	33	36
		1955	36	31	40	27	22	23	18	17	20	36	21	46
		1956	41	31	48	34	24	26	30	22	18	24	24	36
E924	Accidental mechanical suffocation in bed and cradle	1953	32	13	20	23	25	21	16	14	6	17	11	19
		1954	20	22	23	13	23	17	11	17	17	14	14	22
		1955	29	9	16	15	16	14	15	10	16	13	17	21
		1956	20	26	23	10	17	13	10	18	10	19	25	14
E929	Drowning	1953	3	3	4	3	2	7	3	6	5	7	6	4
		1954	4	4	4	11	8	8	4	3	12	6	4	4
		1955	—	2	4	9	5	8	5	6	3	4	4	5
		1956	5	4	6	6	6	9	5	6	6	7	7	5
Remainder of E870–E936	All other accidents	1953	69	161	30	25	16	17	12	17	13	12	9	13
		1954	23	21	19	21	25	12	22	17	13	20	14	9
		1955	30	11	22	21	12	16	19	19	13	14	8	16
		1956	13	29	24	20	26	22	11	24	15	10	11	11
E870–E936 ..	All accidents in home or residential institutions	1953	663	727	517	449	389	377	404	377	424	508	474	586
		1954	677	776	654	564	526	426	448	429	434	502	524	661
		1955	864	623	780	533	486	455	422	393	388	487	550	654
		1956	725	859	735	567	533	448	411	456	432	500	583	649

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Table XCIII.—Accidents in the home and residential institutions: Deaths by cause and sex at ages 65 and over, 1956, England and Wales

Int. Classn. No.	Cause of death	Home			Residential institutions		
		Males	Females	Persons	Males	Females	Persons
E870–E888 ..	**Accidental poisoning by solid and liquid substances**	**20**	**32**	**52**	**—**	**3**	**3**
E871	Accidental poisoning by barbituric acid and derivatives ..	12	24	36	—	1	1
E883	Accidental poisoning by corrosive aromatics, acids, and caustic alkalis	1	2	3	—	1	1
Rem. E870–E888	Accidental poisoning by other solid and liquid substances ..	7	6	13	—	1	1
E890–E895 ..	**Accidental poisoning by gases and vapours**	**147**	**296**	**443**	**1**	**1**	**2**
E890	Accidental poisoning by utility (illuminating) gas	140	293	433	1	1	2
Rem. E890–E895	Accidental poisoning by other gases and vapours	7	3	10	—	—	—
E900–E904 ..	**Accidental falls**	**883**	**2,290**	**3,173**	**295**	**521**	**816**
E900	Fall on stairs	277	430	707	15	16	31
E901	Fall from ladders	22	10	32	1	—	1
E902	Other falls from one level to another	67	109	176	43	81	124
E903	Fall on same level	143	578	721	107	204	311
E904	Unspecified falls	374	1,163	1,537	129	220	349
E910–E936 ..	**Other accidents**	**176**	**333**	**509**	**17**	**24**	**41**
E916	Accident caused by fire and explosion of combustible material	108	236	344	2	5	7
E917	Accident caused by hot substance, corrosive liquid and steam ..	19	50	69	4	3	7
E921	Inhalation and ingestion of food causing obstruction or suffocation	9	13	22	4	7	11
E929	Accidental drowning and submersion	11	11	22	1	—	1
Rem. E910–E936	Remainder of other accidents ..	29	23	52	6	9	15

Table XCIV.—Accidental falls: Death rates per million living by sex and age, and comparative mortality indices by sex, 1901 to 1956, England and Wales

	All ages	0–	10–	15–	20–	25–	35–	45–	55–	65–	75 and over	C.M.I.† (1938 =1·00)
Males												
1901–10	84	45	25	23	24	39	69	119	209	420	1,253	**1·06**
1911–20	107	38	30	39	36	56	93	155	254	454	1,373	**1·29**
1921–30	85	25	18	31	31	37	56	93	161	352	1,306	**0·92**
1931–35	93	25	18	31	33	37	47	79	146	338	1,609	**0·92**
1936–40	120	31	24	34	40	51	58	95	177	414	1,910	**1·05**
1941–45	109	35	26	40	30	41	58	87	157	337	1,448	**0·93**
1946	86	27	21	25	26	30	43	57	107	245	1,203	**0·73**
1947	97	31	26	33	42	36	50	68	108	254	1,352	**0·80**
1948	80	27	22	22	27	37	41	49	85	211	1,122	**0·66**
1949	78	20	18	28	31	33	38	57	68	185	1,162	**0·63**
1949*	79	25	18	27	28	32	35	55	71	191	1,174	**0·66**
1950*	74	14	18	19	25	29	34	50	71	183	1,139	**0·61**
1951*	86	17	17	17	34	35	40	51	85	241	1,275	**0·71**
1952*	79	16	17	23	30	30	30	47	78	221	1,169	**0·64**
1953*	84	14	*10*	22	29	30	33	52	80	246	1,254	**0·68**
1954*	99	11	*9*	20	23	27	39	52	86	280	1,659	**0·80**
1955*	94	14	16	*13*	25	28	38	44	85	248	1,574	**0·75**
1956*	99	9	15	16	31	25	34	45	77	281	1,698	**0·78**
Females												
1901–10	68	27	6	4	4	10	26	64	132	389	1,657	**0·88**
1911–20	69	20	6	5	5	8	20	50	108	356	1,752	**0·83**
1921–30	73	13	4	4	4	5	10	31	85	318	1,845	**0·75**
1931–35	100	14	5	3	3	6	8	30	92	388	2,283	**0·90**
1936–40	136	18	6	4	5	6	12	34	123	476	2,714	**1·11**
1941–45	118	17	8	5	6	6	11	26	81	346	2,135	**0·85**
1946	110	15	*4*	*3*	*5*	*6*	6	11	59	260	2,037	**0·76**
1947	111	11	*7*	*9*	*4*	*4*	*5*	15	58	286	1,947	**0·75**
1948	100	11	*4*	*4*	*4*	*3*	*4*	18	51	231	1,726	**0·66**
1949	105	10	*6*	*3*	*2*	*2*	*4*	13	50	232	1,840	**0·69**
1949*	105	12	*6*	*4*	*1*	*2*	*5*	15	51	230	1,822	**0·69**
1950*	113	8	*2*	*2*	*1*	*3*	*5*	14	45	230	1,994	**0·73**
1951*	117	9	—	*2*	*5*	*3*	*3*	12	46	240	2,034	**0·75**
1952*	105	9	*2*	*2*	*5*	*2*	*5*	11	44	218	1,743	**0·66**
1953*	123	7	*4*	*2*	*2*	*4*	*5*	15	50	241	2,018	**0·75**
1954*	141	6	*3*	*3*	*1*	*3*	*5*	13	45	295	2,249	**0·83**
1955*	144	8	*3*	*2*	—	*2*	6	15	50	281	2,261	**0·83**
1956*	149	8	*3*	*2*	*4*	*2*	*5*	13	50	275	2,338	**0·85**

* According to the Sixth Revision of the International Classification (Nos. E900–904). Other years according to the classification in use at the time.

† C.M.Is. are based on civilian deaths and civilian populations for the years 1940–1949 inclusive.

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CERTIFICATION OF CAUSE OF DEATH

Comparison of diagnosis before and after post-mortem

In 1953 Dr. J. B. Holroyd, in correspondence with the Registrar General, drew attention to the fact that inaccuracies frequently occurred in death certificates issued prior to autopsy. He quoted a series of cases from a large teaching hospital where the death certificate was issued to the relatives prior to the autopsy being carried out, and showed that in only 258 cases out of 448 (57·6 per cent) autopsies was the ante-mortem diagnosis correct. Similar work has been carried out by Swartout (1934)[1] who found 93 per cent of cases with correct ante-mortem diagnoses. In a later series (Swartout and Webster 1940[2]) only 79 per cent agreement was found. Pohlen and Emerson (1942, 1943)[3,4] found 68 per cent agreement, 17,152 ante-mortem diagnoses being verified by autopsy in a total of 25,066 cases.

James, Patton and Heslin (1955)[5] in a series of 1,889 autopsies found that the differences between the " true " cause of death, as determined at autopsy, and the original certificate of cause of death were to a large extent compensating. Nevertheless there was considerable under-representation among the autopsied deaths of some of the more common degenerative diseases. The agreement between the original death certificate and the autopsy findings in cases of arteriosclerotic heart disease, diabetes and vascular diseases of the central nervous system was 73 per cent, 31 per cent and 60 per cent respectively.

In 1953 the Registrar General's Advisory Committee on Medical Nomenclature and Statistics recommended that an investigation be held to obtain information on the correlation between clinical and post-mortem diagnoses in hospitals in England and Wales. The details of this investigation and its results are given below.

Method

Ten hospitals where post-mortem examinations were performed as a routine, upon all patients dying in hospital, agreed to participate in this enquiry. They were asked to complete a form containing two " death certificate " panels for every death occurring in the hospital during the period 1st February, 1955, to 31st July, 1955. One " death certificate " panel was to be completed by a clinician prior to the post-mortem, and space was given for any further clinical details or notes. The second " death certificate " panel was for completion by the pathologist as a result of the post-mortem examination. He also was encouraged to give further details of his findings below the certificate. If no autopsy was held the pathologist's certificate was left blank and the reason for this given, e.g. relatives' refusal. The importance of the clinical diagnosis being given before the autopsy was stressed. This investigation was not intended to interfere in any way with the normal procedure for issuing the certificate of cause of death. Opportunity was given for the clinician to dissent from

the opinion of the pathologist as it was realised that the latter was not necessarily the " true " cause of death. Unfortunately this last was obviously misunderstood by some hospitals and no analysis of this aspect of the problem was possible.

Completed forms were sent to the General Register Office for analysis.

Results

A list of those hospitals participating in the investigation is given in Table XCV (page 193), together with the number of deaths and autopsies in those hospitals during the period of the investigation. All participating hospitals except one held autopsies in over 75 per cent of deaths. In the one hospital it may be that permission to hold an autopsy was not obtained from the relatives as often as in the other hospitals, especially when the case was not of great academic interest.

After inspection of the forms it was seen that they could be classified into four groups :

I. The findings of the post-mortem examination agreed with the ante-mortem clinical diagnosis and the assignments of the cause of death in the two cases also agreed. In all cases the assignment was made according to the rules for selection contained in the Manual of the International Classification of Diseases, Injuries and Causes of Death, 1948[6].

II. The findings of the post-mortem examination brought to light some facts apparently unknown before death, and resulted in the assigned cause of death differing from the clinical cause. Alternatively, there was no evidence of the clinician's assigned cause of death found at post-mortem.

III. The pathologist, while agreeing with his clinical colleague on questions of fact, completed his certificate incorrectly and in such a fashion that the assignments of the cause of death differed. Had the pathologist's certificate been the official one, a medical enquiry would have had to be made by the General Register Office in order to obtain more information.

IV. The assigned cause of death as given by clinician and pathologist differed, often to a considerable degree, but it was apparent from examination of the evidence that this was due to different opinions, or use of words, and was not due to any real difference in questions of fact.

Examples of these different groups are to be found in Table XCVI (page 193)* Assignment to a particular group was often difficult and in an attempt to avoid bias was done independently by two observers, who then discussed any disagreements that might have arisen.

Distribution of agreements by sex and age

Table XCVII (page 194) gives details of agreements and disagreements by age, and sex. Out of 1,404 cases in which autopsies were held there was agreement between clinician and pathologist in 714 (51 per cent). An agreement was so counted if the cause of death given by a pathologist resulted in assignment to the same three-digit category of the International Statistical Classification. It will be appreciated that with over 800 categories this breakdown is finer than those carried out by previous workers in this field. In 271 cases (19 per cent) a new finding was given by the pathologist. It is impossible to say that in

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every case the pathologist's assignment in this group was the correct one but it is probably true in the majority of cases. In 34 cases (2 per cent) the pathologist's certificate was probably completed incorrectly on the evidence available. Although in certain cases there were circumstances pointing to incorrect completion of the clinician's certificate, the evidence was never strong enough to allow a separate group to be made of them. In 385 cases (28 per cent) the disagreement did not appear to the observers to be one of fact although the wording may have been very different.

The table below gives details of the percentage agreements and disagreements by age.

Age	Percentage of all cases with post-mortem				Percentage of all deaths with no P.M. held
	Agreement	Disagreement			
		New finding at P.M.	P.M. certificate incorrect	Matters of interpretation and wording	
0–14	51	20	1	28	10
15–44	71	11	2	16	23
45–64	58	19	3	20	19
65–74	48	17	3	32	18
75 and over	38	24	2	36	19
Total ..	51	19	2	28	19

In any trends seen in this table the 0–14 age-group always proves an exception. This is due to the difficulty in accurately certifying the cause of death in newborn children without the aid of a post-mortem. This age-group will not be considered further in a discussion of age trends.

It might be expected that with increasing age the difficulty of accurately certifying the cause of death would increase, and the table above shows that this was the case. The percentage agreement fell from 71 per cent at 15–44 to 38 per cent at 75 and over. Although not so clear cut, the percentage of " new " findings at post-mortem increases with age as does the disagreement over matters of opinion and wording. The percentage of deaths for which no post-mortem was held has no relation to age.

It might be argued that for the percentage disagreement over matters of opinion to increase with the age of the patient is an indication that there has been some error in classification to this group, on the grounds that disagreements of this nature would occur similarly at all ages. It should be remembered, however, that as age increases " senility " becomes more often the " true " cause of death, and because of its many manifestations several different causes may play their part in bringing about death. This leads to a certain amount of disagreement between clinician and pathologist as to the " final underlying cause " although there may have been little, if any, disagreement on the facts of the case.

Table XCVII also shows that there was no significant difference in findings between the two sexes, when all causes are considered together.

Length of stay prior to death

Table XCVIII (page 194) gives details of the number of agreements and disagreements in the clinicians' and pathologists' findings according to length of stay in hospital prior to death occurring.

The table below summarises these findings as percentages.

Length of stay prior to death	Percentage of all cases with post-mortem				Percentage of all deaths with no P.M. held
	Agreement	Disagreement			
		New finding	P.M. certificate incorrect	Matters of interpretation or wording	
Day of admission or day after	51	23	1	25	16
3–7 days	49	21	1	29	20
8 days–1 month ..	51	19	3	27	20
Over one month ..	52	16	4	28	18
Not known ..	60	3	3	34	17
Total ..	51	19	2	28	19

It is rather surprising to find that the percentage of agreements does not rise with increasing length of stay, but on the data presented here there is no evidence of this. On the other hand there is a tendency, but not a marked one, for the percentage of new findings to fall as the length of stay increases. There is no relationship between the percentage of disagreement over interpretation and length of stay. This was to have been expected.

Extent of agreement and disagreement for individual diagnoses

Table XCIX (page 195) shows the number of cases in which there was agreement or disagreement between ante- and post-mortem findings for each rubric of the full International List. Only those rubrics are shown for which there were cases. Some of the individual diagnoses are discussed in detail below, but among those not so discussed the following points are worthy of mention :

(*a*) Pulmonary tuberculosis. There would appear to be a tendency for the pathologist to assign death to this cause when the clinician thought otherwise, although the latter was aware of the presence of the disease.

(*b*) Malignant neoplasm of oesophagus. The percentage agreement in cases with this assignment is quite high (67 per cent) but there is some suggestion of under-diagnosis on the part of the clinician.

(*c*) Malignant neoplasm of stomach. The proportion of disagreements over matters of fact is high although with the small number of cases the net effect of this shows no tendency to under- or over-diagnosis. Most of these disagreements result from mis-diagnosis of the primary site of cancer, although there is no individual alternative site that is noteworthy. In three cases (males aged 57, 62 and 78) a clinical diagnosis of ulcer of stomach was given with the pathologist finding a malignant neoplasm.

(*d*) Malignant neoplasm of breast. As might be expected with a superficial growth the percentage agreement is very high—27 cases out of 32 post-mortems (84 per cent). In only 2 cases did the pathologist disagree over a question of fact with the clinical diagnosis of carcinoma of the breast.

(*e*) Malignant neoplasm of other unspecified sites. Owing to the impossibility of determining the primary site before death in many cases of malignant neoplasm a large number of " disagreements " over matters of fact was to be expected with this diagnosis. Out of 16 cases in which the clinician was unable to ascertain the primary site the pathologist found it to be as follows :— stomach (2), large intestine (1), biliary passages and liver (1), pancreas (3), lung (3), kidney (2), thyroid (1), bone (1), multiple myeloma (1), leukaemia (1). In one case death was found to be due to cerebral embolism. The large number of abdominal primary sites was to be expected, but it was a matter of some surprise that in only 3 cases was the primary site found in the lung.

(*f*) Leukaemia, aleukaemia and Hodgkin's disease. The relatively high percentage of cases of agreement in these diseases suggests that a fairly accurate ante-mortem laboratory diagnosis can be made.

(*g*) Diabetes. The large number of agreements here, 15 out of 24 cases in which a P.M. was held, was rather surprising in view of the large number of times in which diabetes is mentioned on death certificates not as the underlying but as a contributory cause*. The high percentage of agreements was partially explained by death being preceded by diabetic coma in 8 of the 15 cases in which there was agreement.

(*h*) Rheumatic heart disease. Many of the disagreements over matters of interpretation were due to one certifier mentioning the specific valve(s) involved, with the other using the general term " rheumatic heart disease ".

(*i*) Venous embolism and thrombosis. As is mentioned under the discussion of arteriosclerotic heart disease, there is under-diagnosis of the disease by the clinician who is liable to confuse the diagnosis of the terminal pulmonary embolism with coronary thrombosis. Pathologists use this assignment very often, attributing death to venous thrombosis and ignoring the pathological conditions giving rise to that thrombosis.

Detailed examination of certain causes of death

Malignant neoplasm of trachea and of bronchus and lung (*I.S.C. Nos. 162, 163*)

Cancer of lung was the assigned cause of death in 87 cases, as shown in Table C (page 201) where some detail of age and sex distribution of these cases is given.

In 53 out of the 87 cases (61 per cent) there was agreement between the pathologist's and clinician's assigned cause of death. Among the disagreements there were 23 cases (26 per cent) in which the pathologist discovered a previously unsuspected lung carcinoma; in only 8 cases (9 per cent) had the clinician diagnosed cancer of lung incorrectly. With the small number of cases involved it is impossible to draw any firm conclusions from the disagreements resulting from new findings, but there appears to be a tendency for cancer of lung to be left out of consideration by the clinician more frequently at older ages. In support of this, there were 38 cases of cancer of lung in persons under 65 where there was agreement between pathologist and clinician, with 17 disagreements, but at 75 and over there were no agreements and nine disagreements. Table CI (page 201) gives the assignment of the clinician's diagnosis where the pathologist gave cancer of lung as the cause of death and vice versa.

* In the *Statistical Review of England and Wales*, 1955, Part III, Commentary, page 193, a study of multiple-cause analysis showed that for every 1,000 times in which diabetes is the assigned cause of death it was mentioned on the certificate a further 1,951 times.

In 10 cases the clinician had given an alternative site of neoplasm as the cause of death, but in only two cases had he given cancer of the lung incorrectly when neoplasms of other sites were found by the pathologist. In only three cases was assignment to cancer of lung consequent on difference of opinion between clinician and pathologist.

Vascular lesions affecting central nervous system (*I.S.C. Nos. 330–334*)

Table CII (page 202) gives details of the numbers of assignments to vascular lesions of the central nervous system by age and sex. Because of the frequent difficulty of differentiating ante-mortem between, for example, subarachnoid and cerebral haemorrhages, disagreements between the individual rubrics of this group have been shown in this table as agreements.

Comparing the findings for this group of diseases with those for cancer of lung given above, it is noticeable that there is little variation in the extent of agreement in the different age-groups. Vascular lesions of the central nervous system were mentioned on 161 certificates. In 95 (59 per cent) there was agreement between the clinician and pathologist and this percentage was roughly constant at all age-groups. Where the disagreement resulted from a new finding at post-mortem there was a tendency for the clinician to over-diagnose this group of diseases. In 6 out of the 14 cases of this type the pathologist's diagnosis was neoplasm of the brain, or neoplasm of the lung (possibly with secondaries in the brain). In only one case had the clinician diagnosed a neoplasm where the pathologist found a cerebro-vascular lesion. Other than this under-diagnosis of space-occupying lesions by clinicians there was no evidence of any consistent disagreements.

As might be expected there had been some confusion with cardiovascular conditions where the disagreement was one of opinion and wording rather than of fact. One of the causes of this is the assignment by international rules to this group, of certificates with mention of hypertension possibly as the underlying or last mentioned cause. There would appear to be a tendency with the disagreements of opinion as with those of fact for the clinician's assignment to this group to be rather in excess of the pathologist's, thus giving rise to the possible general conclusion that the published figures of deaths from vascular lesions of the central nervous system slightly overstate the true position.

Details of the alternative assignments by clinicians and pathologists are given in Table CIII (page 203).

Arteriosclerotic heart disease including coronary disease (*I.S.C. No. 420*)

There was mention of arteriosclerotic heart disease on 227 certificates and agreement in only 93 (41 per cent) of them. Whilst the actual numbers of disagreements were similar in the two sexes, the lower number of agreements in the female cases means that the percentage agreement is considerably less in that sex, being only 33 per cent compared with 47 per cent in the males. This breakdown is shown in Table CIV (page 204). A further point of interest in this table is that the net disagreement is very small. Out of 134 cases in which there was disagreement and in which coronary disease was mentioned on the death certificate, it was mentioned by the clinician 65 times and by the pathologist 69 times. However there is a complicating factor : where the disagreement was one of fact the clinician tended to over-diagnose coronary disease ; it was only when the disagreement was one of opinion or wording that the pathologist's diagnoses redressed the balance.

In assessing the cause of the disagreement, great attention had to be paid to the use of words and it appeared that the clinician used words suggesting an acute attack more often than was warranted by the facts as revealed at post-mortem. On the other hand, the pathologist used words resulting in assignment to coronary artery disease in cases of apparently chronic conditions. There is little doubt that the reason for this is that visual inspection of the heart allows an opinion to be formulated on the state of the coronary arteries which the clinician may not have been in a position to give.

One of the most important reasons for the over-estimation of the amount of coronary disease by the clinician when the disagreement was one of fact was the failure to diagnose pulmonary embolism as the immediate cause of death. In two cases the pathologist found evidence of this as an underlying cause and in eight further cases the embolism had travelled from a remote venous site (usually the femoral vein).

Other myocardial degeneration (*I.S.C. No. 422*)

The rather vague term " myocardial degeneration " is not used as frequently as a cause of death in hospitals as outside them. The ratio

$$\frac{\text{No. of cases of other myocardial degeneration}}{\text{No. of cases of arteriosclerotic heart disease}}$$

is equal to approximately 1 to 10 in this survey whereas in the national experience for 1956 it was over 8 to 10. As might have been expected the amount of agreement was very low indeed ; only in one case did the clinician's and pathologist's diagnoses agree. They disagreed in 21 cases. Of these, 18 were disagreements of wording and opinion as is shown in Table CV (page 204).

As was mentioned when discussing coronary disease, a part of the differences was due to the pathologist assigning the death to coronary artery disease found at post-mortem and which the clinician had not mentioned. Of the thirteen cases assigned by the clinician to myocardial degeneration and where there were disagreements of wording, 7 were assigned by the pathologist to coronary disease and a further 3 to hypertension or senility.

Other and unspecified diseases of the heart (*I.S.C. No. 434*)

This group of causes is somewhat similar to myocardial degeneration in that the general nature of the descriptions results in a very low percentage agreement between the clinician and pathologist—only 3 out of 36. The disagreements, whether of fact or wording, resulted in over-diagnosis of this group of diseases by the clinician. The disagreements over wording fall into two main groups. Firstly, there is the group giving a more specific diagnosis by the pathologist (as with myocardial degeneration) and secondly, the use of words indicating " cor pulmonale " resulted in disagreements of assignments between this rubric and those for chronic bronchitis, bronchiectasis or emphysema.

Hypertensive disease (*I.S.C. Nos. 440–447*)

Out of 86 cases in which the cause of death was given as hypertensive disease there was agreement between clinician and pathologist in 20 of them (23 per cent). Of the 66 cases in which there was disagreement, 52 were as a result of wording. This is shown in Table CVI (page 205). The international classification gives preference to any mention of arteriosclerotic heart disease and as a result of this 10 cases certified by the pathologist were assigned to that rubric. There was a certain amount of difficulty over the differential diagnosis of gross hypertension and kidney disease with six cases of disagreement between the clinician and pathologist.

Pneumonia (*I.S.C. Nos. 490–493*)

All forms of pneumonia (other than influenzal) are considered as a group in Table CVII (page 205). Mentioned on 132 certificates, there was agreement in 35 of them (27 per cent). Being so often a terminal event it was to be expected that in many cases there would be disagreement as to the underlying cause. In 66 cases (50 per cent) the disagreements were one of opinion, 32 cases of pneumonia being assigned by the clinician and 34 by the pathologist. With the disagreements over matters of fact there appears to be a tendency for over-diagnosis on the part of the clinician. There were no particular diagnoses or groups of diagnoses mentioned in the disagreements. Pneumonia as an underlying cause of death is more frequent at older ages. A further point of interest is that the percentage agreements among the females (34 per cent) is higher than among the males (19 per cent).

Bronchitis (*I.S.C. Nos. 500–502*)

As with pneumonia, all forms of bronchitis have been grouped together under one heading. The data for this disease have been summarised in Table CVIII (page 206). Mentioned in 73 cases, there was agreement in 24 of them (33 per cent). The percentage agreement was much higher in men (41 per cent) than in women (14 per cent) and this difference was particularly marked in the age-groups under 75 years. There does not appear to be any tendency to any large net errors in diagnosis with this group of diseases.

The alternative diagnoses given by both clinician and pathologist have a large preponderance of cardiovascular and respiratory diseases.

Ulcers of stomach and duodenum (*I.S.C. Nos. 540–541*)

Whilst combining the two rubrics for different sites of peptic ulcers a distinction has been made between those in which there was and those in which there was not mention of perforation. The data are given in Table CIX (page 206). It will be seen that in both cases the proportion of agreements was low and that disagreements over matters of fact suggests that there is considerable under-diagnosis of these conditions on the part of the clinician.

Table CX (page 207) also shows the assignments of the clinician and pathologist where the alternative diagnosis was given as peptic ulcer. Apart from 3 cases in which the post-mortem revealed carcinoma of stomach there was no one diagnosis liable to confusion with peptic ulcer among the few cases in this series.

Discussion

This is believed to have been the first investigation in which an attempt has been made, in disagreements between clinicians and pathologists, to distinguish between new findings at post-mortems and matters of opinion and the use of words.

When a disagreement over matters of fact has occurred it is probable that the pathologist by his direct view of the viscera is more able to identify the precise disease process which caused death. On the other hand, the clinician has knowledge of the patient while alive, and when multiple disease processes have to be considered it is possible that the clinician is in a better position to distinguish the major cause. Except in occasional and special studies, vital statistics attribute death to a single cause : the need to conform to this requirement no doubt explains some of the disagreements, but as far as possible these have been included as disagreements of opinion and not ones of fact.

It cannot be stressed too strongly that no criticism is implied of either the clinician or pathologist for any of the disagreements. It is often manifestly impossible to make an accurate and detailed diagnosis prior to autopsy and all concerned with the case may be in complete agreement over the interpretation of the clinical findings and treatment and yet be in error over the underlying cause. For example, a patient with mediastinal obstruction was diagnosed by the clinician as a case of Hodgkin's disease. It was only after death that examination of the thoracic contents disclosed a primary carcinoma of the bronchus with massive involvement of the mediastinal glands. In another case the clinician had inadequate time to make a firm diagnosis before the patient died. The clinician quite correctly refused to give a firm diagnosis but the pathologist at autopsy was immediately able to do so. In the vast majority of cases in which there was a disagreement there was no evidence that anything could have been done to save the patients' lives and the disagreements were of no importance individually. Nevertheless, their effect on national vital statistics may be serious if the net effect of the disagreements was not small. Fortunately, in general the effect was small but there were exceptions to this which have been mentioned earlier in this chapter and two are discussed in more detail below.

In cases where the pathologist's certificate was thought to be incorrectly filled in, *prima facie* the pathologist is in error, although his other findings may have included the correct cause of death. In disagreements of matters of opinion, i.e. in the first example given under IV in Table XCVI, it is obvious that either clinician or pathologist may be right, or alternatively the method of assignment of the cause of death may be at fault in that it does not permit the giving of a multiple cause of death. At one stage in the investigation an attempt was made to separate differences of opinion from differences of wording but although the extremes were quite clear, the overlap between the two was so wide that it was decided that it was impossible to make the distinction.

It is impossible to apply the results of the inquiry with any certainty to national mortality statistics for two reasons :

(*a*) No general practioners' certificates were included and, in addition, the hospitals taking part were by no means a cross-section of all the hospitals in the country.

(*b*) The inquiry was not a large one and chance fluctuation due to small numbers may have considerably affected the results.

Because of this, the conclusions that have been drawn from the inquiry should be regarded as only tentative.

Increasing age makes accurate diagnosis of the cause of death more difficult and this is reflected in the increase of disagreements with age both on factual matters and where the facts do not appear to be in dispute.

It was rather surprising to find that length of stay in hospital has little effect on the proportion of agreements between clinician and pathologist. This may have been due to many cases being admitted to hospital with firm diagnoses (possibly illness of long standing) and dying soon after admission. No distinction was made between the "stranger" to the hospital and the patient with the well-known history. Further work would be necessary to solve this apparent paradox.

Although for all causes together the proportion of disagreement in assignments is similar for males and females in different age-groups, this is not so for some individual causes. Three examples of this are to be found with coronary disease and bronchitis when the percentage disagreement is much higher among females than males, and for pneumonia when the reverse is true.

When dealing with individual causes, the proportion in which there was agreement was very low but although there are notable exceptions the net effect of these disagreements was small. As might have been expected general terms were used more by the clinician than the pathologist. This is in agreement with the findings of James, Patton and Heslin (1955) referred to earlier.

Two causes of death are discussed in greater detail below :

(*a*) Cancer of lung. Evidence has emerged from this enquiry to suggest that there is considerable under-diagnosis of this disease by the clinician. If one can generalise from this evidence, defective because the proportion of deaths in which post-mortems are carried out is low, it would appear that the number of deaths assigned to this cause is still considerably under-estimated despite the increases in diagnostic facilities and in the awareness of the disease that has taken place in recent years. Over the age of 65, a post-mortem was said to have been carried out in only 16 per cent of all deaths (Registrar General 1957)[7] and it is in this age-group that the amount of error is greatest. A further point to note is that the errors in diagnosis lie only partially in other respiratory diseases ; cardio- and cerebro-vascular diseases are being wrongly diagnosed on occasions when cancer of the lung is more probably the true cause of death.

(*b*) Arteriosclerotic (coronary) heart disease. The data presented for this disease are difficult to interpret. They show that in questions of fact there is over-diagnosis by the clinician but this is almost balanced by the greater use of the term by pathologists when the facts do not appear to be in dispute. One interpretation of this may be that the clinician uses the term more often (and sometimes incorrectly) to denote an acute episode while the pathologist uses it, in addition, as a description of a morbid condition which would have been described in looser terms by the clinician. Following on this explanation two opposing suggestions can be made :

(i) The nomenclature of this group of diseases should be clarified to permit a distinction to be made between the "acute" and the "chronic" disease in the classification. If this were done, on the evidence of this enquiry, the acute form of the disease would be over-diagnosed and the chronic form under-diagnosed ; the latter due to confusion with more indefinite terminology.

(ii) The classification should be left as it is on the grounds that the antagonistic effect of the two types of disagreement results in only a small net error.

A vicious circle appears to be operating. The present state of our knowledge of coronary disease is such that accurate diagnosis and classification is not easily achieved, while at the same time the present classification is probably tending seriously to confuse the issues involved.

With many diagnoses very minor differences in wording together with the operation of priority rules of classification result in widely different assignments. It is noticeable that this occurs much more frequently with the diseases which are the result of the degenerative processes in old age. Consideration may have to be given to amending the statistical classification of these diseases, possibly by making provision within the classification for some of the multiple cause syndromes reported on death certificates instead of being bound to the "single cause" system in current use.

Summary

1. An investigation is described in which clinicians completed a special "death certificate" form on all cases dying in their hospital. A post-mortem was then held and the pathologist completed a further "death certificate". The two "certificates" were then compared with respect to the assigned cause of death. The investigation was carried out in ten hospitals that held post-mortems as a routine on all deaths occurring.
2. On the basis of the detailed International Statistical Classification (about 800 rubrics) clinicians and pathologists agree in their assignments in 51 per cent of cases. Despite this low percentage the net statistical effect of the disagreements is generally small.
3. Of the 49 per cent disagreements, only 19 per cent were ones of fact, while 28 per cent were of opinion and in 2 per cent the pathologists' certificates were incorrectly completed. Disagreements of fact and opinion between clinicians and pathologists become more numerous with increasing age at death. It is stressed that disagreements of fact in no way reflect on clinicians, and in most cases could not have influenced the outcome.
4. Length of stay in hospital has little effect on the proportion of disagreements.
5. Although for all causes together the proportion of disagreements is similar for males and females, this does not hold with individual causes.
6. General descriptive terms are used more frequently by clinicians than pathologists.
7. Evidence is presented that some diseases, notably cancer of lung, are being under-diagnosed by clinicians.
8. There is discussion of difficulty of classification of degenerative diseases and in particular arteriosclerotic heart disease.

Acknowledgments

The Registrar General is grateful to those hospitals who took part in this investigation and particularly to the clinicians and pathologists, too numerous to mention individually by name, who completed the certificates.

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Table XCV.—Number of deaths and post-mortems and percentage of post-mortems according to name of hospital

Name of hospital	Number of deaths	Number of post-mortems held*	Percentage of post-mortems
Graylingwell Hospital, Chichester	50	45	90·0
Hammersmith Hospital	232	205	88·4
Horton Hospital, Epsom	61	55	90·2
Manchester Royal Infirmary	274	152	55·5
Radcliffe Royal Infirmary, Oxford	178	159	89·3
Rochford General Hospital	316	279	88·3
St. Bartholomew's Hospital, London	148	115	77·7
Sheffield Royal Infirmary	208	180	86·5
Southend General Hospital	169	141	83·4
University College Hospital, London	93	73	78·5
Total	**1,729**	**1,404**	**81·2**

* These figures exclude 2 cases from Sheffield, 2 from Manchester and 1 each from Southend and University College Hospital where the form sent to General Register Office was incomplete.

Table XCVI.—Examples of types of agreement and disagreement between clinicians' and pathologists' certificates of cause of death

Type of agreement or disagreement	Clinician's certificate	Pathologist's certificate	International List Assignment	
			Clinician	Pathologist
I Agreement	I (*a*) Cancer of bronchus	I (*a*) Generalised carcinomatosis due to (*b*) cancer of bronchus	163	163
II New finding at post-mortem	I (*a*) Cerebral thrombosis	I (*a*) Malignant glioma	332	193
III Pathologist's error through incorrect completion of certificate	I (*a*) Bronchopneumonia I (*b*) Post-operative collapse following operation for I (*c*) carcinoma of colon	I (*a*) Bronchopneumonia	153	491
IV Agreement on fact, but disagreement on interpretation or wording	I (*a*) Pulmonary tuberculosis II Carcinoma colon	I (*a*) Carcinoma of colon II Pulmonary tuberculosis	001	153
	I (*a*) Heart failure I (*b*) Myocardial degeneration	I (*a*) Heart failure I (*b*) Coronary sclerosis	422	420

Table XCVII.—Number of agreements and disagreements between clinicians' and pathologists' certificates of cause of death by age and sex

Males

Age	Agreements	Disagreements			Total P.Ms. held	No P.M.
		New finding at P.M.	P.M. certificate incorrect	Matters of interpretation or wording		
0–14	19	7	—	9	35	2
15–44	47	6	2	9	64	26
45–64	172	57	7	61	297	70
65–74	94	32	2	61	189	37
75 and over	58	48	1	70	177	37
All Ages	**390**	**150**	**12**	**210**	**762**	**172**

Females

Age	Agreements	Disagreements			Total P.Ms. held	No P.M.
		New finding at P.M.	P.M. certificate incorrect	Matters of interpretation or wording		
0–14	17	7	1	11	36	6
15–44	41	8	1	10	60	12
45–64	114	38	8	40	200	46
65–74	72	29	7	51	159	38
75 and over	80	39	5	63	187	51
All Ages	**324**	**121**	**22**	**175**	**642**	**153**

Persons

Age	Agreements	Disagreements			Total P.Ms. held	No P.M.
		New finding at P.M.	P.M. certificate incorrect	Matters of interpretation or wording		
0–14	36	14	1	20	71	8
15–44	88	14	3	19	124	38
45–64	286	95	15	101	497	116
65–74	166	61	9	112	348	75
75 and over	138	87	6	133	364	88
All Ages	**714**	**271**	**34**	**385**	**1,404**	**325**

Table XCVIII.—Number of agreements and disagreements between clinicians' and pathologists' certificates of cause of death by length of stay in hospital

Persons

Length of stay	Agreements	Disagreements			Total P.Ms. held	No P.M.
		New finding at P.M.	P.M. certificate incorrect	Matters of interpretation or wording		
Day of admission or day after	121	56	2	59	238	46
3–7 days	131	57	2	78	268	69
8 days to one month ..	262	100	15	138	515	126
Over one month	182	57	14	100	353	78
Not known	18	1	1	10	30	6
Total	**714**	**271**	**34**	**385**	**1,404**	**325**

Table XCIX.—Number of agreements and disagreements between clinicians' and pathologists' certificates of cause of death by diagnosis (only those diagnoses for which there were one or more cases are shown)

Persons

Note.—(1) As an example of the type of data in this table, malignant neoplasm of rectum was the assigned cause of death in 23 cases in which there was a post-mortem. It was the clinician's assigned cause in 16 cases (9+5+1+1) and the pathologist's in 16 cases (9+4+3). Where there was disagreement between clinician and pathologist the alternative cause is contained elsewhere in the table. For example, in the case where the clinician gave the cause of death as cancer of rectum and it was considered that the pathologist filled in the certificate incorrectly, one of the cases in the P.M. column for bronchopneumonia may have been the alternative cause of death. For some of the more important causes of death the alternative causes are given in full in Tables CI, CIII, CV, and CX.

(2) In the column headings under "Disagreements" AM means Clinician's diagnosis and PM means Pathologist's diagnosis.

Int. Classn. No.	Disease or Condition	Agreements	Disagreements						Total certificates showing selected diagnoses for cases at which P.Ms. were held	No P.M.
			New finding at P.M.		P.M. certificate incorrect		Matters of interpretation or wording			
			AM	PM	AM	PM	AM	PM		
002	Pulmonary tuberculosis ..	9	2	3	—	—	1	5	20	1
003	Pleural tuberculosis	—	—	—	—	1	—	—	1	—
010	Tuberculosis of meninges and central nervous system ..	1	—	—	—	—	—	—	1	—
011	Tuberculosis of intestines, peritoneum and mesenteric glands	—	—	—	—	—	—	—	—	1
016	Tuberculosis of genito-urinary system	1	—	—	—	—	1	—	2	1
019	Disseminated tuberculosis ..	—	1	—	—	—	1	—	2	—
022	Aneurysm of aorta	—	1	1	—	—	2	—	4	—
023	Other cardiovascular syphilis ..	1	1	2	1	—	—	1	6	1
053	Septicaemia and pyaemia ..	—	1	—	—	—	1	—	2	—
057	Meningococcal infections ..	1	—	—	—	—	—	—	1	—
092	Infectious hepatitis	4	—	—	—	—	1	—	5	—
134	Other fungus infections ..	—	—	1	—	—	1	—	2	—
141	Malignant neoplasm of tongue	—	—	—	—	—	—	1	1	—
143	Malignant neoplasm of floor of mouth	—	—	1	—	—	—	—	1	—
144	Malignant neoplasm of other parts of mouth and mouth unspecified	2	—	—	1	—	—	—	3	1
146	Malignant neoplasm of nasopharynx	—	—	—	—	—	—	—	—	1
147	Malignant neoplasm of hypopharynx	2	2	—	—	—	1	1	6	1
148	Malignant neoplasm of pharnyx unspecified	—	—	—	—	—	1	1	2	—
150	Malignant neoplasm of oesophagus	14	1	5	—	—	1	—	21	3
151	Malignant neoplasm of stomach	15	11	9	3	—	3	—	41	12
152	Malignant neoplasm of small intestine including duodenum	1	—	—	—	—	—	—	1	—
153	Malignant neoplasm of large intestine except rectum ..	10	5	9	—	—	1	—	25	7
154	Malignant neoplasm of rectum	9	5	4	1	—	1	3	23	3
155	Malignant neoplasm of biliary passages and of liver (primary)	1	2	3	—	—	—	—	6	—
156	Malignant neoplasm of liver (secondary and unspecified)..	—	—	2	—	—	—	—	2	—
157	Malignant neoplasm of pancreas	6	4	5	—	—	—	1	16	3
158	Malignant neoplasm of peritoneum	1	—	—	—	—	1	—	2	1
159	Malignant neoplasm of unspecified digestive organs ..	1	—	—	—	—	—	—	1	—
161	Malignant neoplasm of larynx	3	1	—	—	—	1	—	5	3
162	Malignant neoplasm of trachea,									
163	and of lung and bronchus ..	53	8	23	—	—	—	3	87	23
165	Malignant neoplasm of thoracic organs (secondary)	—	1	—	—	—	—	—	1	—
170	Malignant neoplasm of breast ..	27	2	—	2	—	1	—	32	6

Table XCIX—*continued.*

Int. Classn. No.	Disease or Condition	Agreements	Disagreements						Total certificates showing selected diagnoses for cases at which P.Ms. were held	No P.M.
			New finding at P.M.		P.M. certificate incorrect		Matters of interpretation or wording			
			AM	PM	AM	PM	AM	PM		
171	Malignant neoplasm of cervix uteri	8	—	—	—	—	1	—	9	3
172	Malignant neoplasm of corpus uteri	—	1	1	—	—	—	—	2	—
174	Malignant neoplasm of uterus, unspecified	1	1	1	1	—	—	—	4	1
175	Malignant neoplasm of ovary, Fallopian tube and broad ligament	10	3	2	1	—	—	1	17	7
176	Malignant neoplasm of other and unspecified female genital organs	2	—	—	—	—	1	—	3	—
177	Malignant neoplasm of prostate	5	3	4	—	—	2	—	14	2
178	Malignant neoplasm of testis	—	—	1	—	—	—	—	1	—
180	Malignant neoplasm of kidney	1	2	3	—	—	—	1	7	4
181	Malignant neoplasm of bladder and other urinary organs	14	3	1	—	—	1	3	22	—
190	Malignant melanoma of skin	—	—	1	—	—	—	—	1	—
191	Other malignant neoplasm of skin	1	1	—	—	—	—	—	2	—
193	Malignant neoplasm of brain and other parts of nervous system	8	—	3	—	—	1	1	13	3
194	Malignant neoplasm of thyroid gland	7	1	1	—	—	—	—	9	1
195	Malignant neoplasm of other endocrine glands	1	—	—	—	—	—	—	1	—
196	Malignant neoplasm of bone	1	1	1	—	—	—	1	4	—
197	Malignant neoplasm of connective tissue	1	—	—	—	—	—	—	1	1
198	Secondary and unspecified malignant neoplasm of lymph nodes	—	1	—	—	—	—	—	1	—
199	Malignant neoplasm of other and unspecified sites	3	17	2	—	—	3	1	26	7
200	Lymphosarcoma and reticulosarcoma	7	1	2	—	—	1	1	12	3
201	Hodgkin's disease	11	3	—	—	—	—	1	15	2
202	Other forms of lymphoma (reticulosis)	1	1	—	—	—	2	—	4	1
203	Multiple myeloma (plasmocytoma)	5	—	1	—	—	1	1	8	2
204	Leukaemia and aleukaemia	23	2	2	—	—	3	5	35	12
215	Benign neoplasm of uterus	—	—	—	1	—	—	—	1	—
216	Benign neoplasm of ovary	—	—	—	1	—	—	—	1	—
219	Benign neoplasm of kidney and other urinary organs	1	—	—	—	—	—	—	1	—
223	Benign neoplasm of brain and other parts of nervous system	1	—	1	—	—	1	1	4	—
224	Benign neoplasm of endocrine glands	—	—	—	—	—	—	1	1	—
231	Neoplasm of unspecified nature of respiratory organs	—	—	1	—	—	—	—	1	—
237	Neoplasm of unspecified nature of brain and other parts of nervous system	3	4	2	—	—	1	2	12	1
239	Neoplasm of unspecified nature of other and unspecified organs	—	1	—	—	—	1	—	2	—
241	Asthma	3	—	—	—	—	1	1	5	—
245	Other allergic disorders	—	—	—	1	—	—	—	1	—
252	Thyrotoxicosis with or without goitre	—	—	—	—	—	—	—	—	1
253	Myxoedema and cretinism	—	—	—	—	—	—	2	2	—
260	Diabetes mellitus	15	3	—	—	—	5	1	24	10
270	Disorders of pancreatic internal secretion other than diabetes mellitus	—	1	—	—	—	—	—	1	—
272	Diseases of pituitary gland	—	—	1	—	—	—	2	3	—
277	Polyglandular dysfunction and other diseases of endocrine glands	—	—	—	—	—	1	—	1	—
286	Other avitaminoses and nutritional deficiency states	—	1	—	—	—	2	—	3	—
287	Obesity, not specified as of endocrine origin	—	—	—	—	—	1	—	1	—
289	Other metabolic diseases	—	—	—	—	—	1	1	2	—
290	Pernicious and other hyperchronic anaemias	2	—	—	—	—	1	—	3	2
292	Other anaemias of specified type	2	—	1	—	—	1	3	7	—

Table XCIX—*continued.*

Int. Classn. No.	Disease or Condition	Agreements	Disagreements						Total certificates showing selected diagnosis for cases at which P.Ms. were held	No P.M.
			New finding at P.M.		P.M. certificate incorrect		Matters of interpretation or wording			
			AM	PM	AM	PM	AM	PM		
293	Anaemia of unspecified type	—	2	—	—	1	—	1	4	—
294	Polycythaemia	1	—	—	—	—	1	—	2	—
296	Purpura and other haemorrhagic conditions	—	2	—	—	—	—	1	3	—
297	Agranulocytosis	—	—	—	—	1	1	—	2	—
298	Diseases of spleen	—	—	—	—	—	1	—	1	—
301	Manic-depressive reaction	—	—	—	—	—	1	—	1	—
304	Senile psychosis	—	2	—	1	—	1	2	6	—
305	Presenile psychosis	2	—	—	2	—	1	—	5	—
309	Other and unspecified psychosis	—	1	—	1	—	1	—	3	—
314	Neurotic-depressive reaction	—	1	—	—	—	—	—	1	—
322	Alcoholism	1	—	—	—	—	—	—	1	—
330	Subarachnoid haemorrhage	8	—	1	—	—	4	5	18	8
331	Cerebral haemorrhage	34	6	2	2	—	20	9	73	9
332	Cerebral embolism & thrombosis	24	7	2	1	1	15	27	77	17
334	Other and ill-defined vascular lesions affecting central nervous system	4	1	—	—	—	12	1	18	5
340	Meningitis, except meningococcal and tuberculous	3	1	2	—	—	—	—	6	—
341	Phlebitis and thrombophlebitis of intracranial venous sinuses	—	1	—	—	—	—	—	1	—
342	Intracranial & intraspinal abscess	1	—	—	—	—	—	—	1	—
343	Encephalitis, myelitis and encephalomyelitis (except acute infectious)	—	—	1	—	—	—	—	1	—
344	Late effects of intracranial abscess or pyogenic infection	1	—	—	—	—	1	—	2	—
345	Multiple sclerosis	2	—	—	—	—	—	—	2	2
350	Paralysis agitans	3	—	—	—	—	—	1	4	1
351	Cerebral spastic infantile paralysis	1	—	—	—	—	—	—	1	2
352	Other cerebral paralysis	—	—	—	—	—	1	1	2	—
355	Other diseases of brain	—	—	—	—	—	—	1	1	—
356	Motor neurone disease and muscular atrophy	—	—	—	—	—	—	1	1	—
357	Other diseases of spinal cord	1	—	—	—	—	—	—	1	—
364	Polyneuritis and polyradiculitis	—	—	—	—	—	—	—	—	1
391	Otitis media without mention of mastoiditis	2	1	3	—	—	—	—	6	—
393	Mastoiditis without mention of otitis media	—	—	1	—	—	1	—	2	—
401	Rheumatic fever with heart involvement	—	—	—	—	—	1	—	1	—
410	Diseases of mitral valve	16	1	6	—	—	2	8	33	7
411	Diseases of aortic valve specified as rheumatic	1	1	2	—	—	—	2	6	1
414	Other endocarditis specified as rheumatic	—	—	—	—	—	1	1	2	—
415	Other myocarditis specified as rheumatic	—	—	1	—	—	1	—	2	—
416	Other heart disease specified as rheumatic	3	1	—	—	—	4	1	9	2
420	Arteriosclerotic heart disease including coronary disease	93	41	17	—	—	24	52	227	33
421	Chronic endocarditis not specified as rheumatic	1	1	8	—	—	1	7	18	—
422	Other myocardial degeneration	1	3	—	—	—	12	6	22	5
430	Acute and subacute endocarditis	—	—	2	—	—	—	2	4	—
431	Acute myocarditis not specified as rheumatic	—	—	—	—	—	—	1	1	—
433	Functional disease of the heart	1	2	—	—	—	2	1	6	1
434	Other and unspecified diseases of the heart	3	6	—	—	—	21	6	36	2
440	Essential benign hypertension with heart disease	—	—	1	—	—	—	1	2	—
441	Essential malignant hypertension with heart disease	1	—	—	—	—	—	—	1	1
442	Hypertensive heart disease with arteriolar nephrosclerosis	—	—	—	—	—	1	1	2	1
443	Other and unspecified hypertensive heart disease	6	2	6	—	—	22	12	48	7
444	Essential benign hypertension without mention of heart	2	1	2	—	—	11	9	25	2
445	Essential malignant hypertension without mention of heart	1	—	—	—	—	4	2	7	2
446	Hypertension with arteriolar nephrosclerosis without mention of heart	—	1	—	—	—	—	1	2	—

Table XCIX—*continued.*

Int. Classn. No.	Disease or Condition	Agreements	Disagreements						Total certificates showing selected diagnosis for cases at which P.Ms. were held	No P.M.
			New finding at P.M.		P.M. certificate incorrect		Matters of interpretation or wording			
			AM	PM	AM	PM	AM	PM		
447	Other hypertensive disease without mention of heart	—	—	—	—	1	6	2	9	—
450	General arteriosclerosis	3	—	—	—	—	7	4	14	2
451	Aortic aneurysm specified as non-syphilitic and dissecting aneurysm	3	—	5	—	—	—	3	11	—
452	Other aneurysm except of heart and aorta	—	—	—	—	—	1	—	1	—
453	Peripheral vascular disease	—	—	—	—	—	1	—	1	—
454	Arterial embolism & thrombosis	—	—	—	—	—	—	1	1	—
455	Gangrene of unspecified cause	2	—	—	—	—	1	—	3	—
456	Other diseases of arteries	3	1	3	1	—	1	1	10	—
460	Varicose veins of lower extremities	—	—	1	—	—	—	1	2	—
462	Varicose veins of other specified sites	—	1	—	—	—	—	—	1	—
464	Phlebitis and thrombophlebitis of other sites	—	—	—	—	—	1	—	1	—
465	Pulmonary embolism and infarction	—	3	6	—	1	—	2	12	3
466	Other venous emolism and thrombosis	4	1	16	—	6	2	5	34	—
474	Acute laryngitis and tracheitis	—	—	—	—	—	1	—	1	—
480	Influenza and pneumonia	—	—	—	—	—	—	1	1	—
490	Lobar pneumonia	2	1	2	—	1	2	8	16	2
491	Bronchopneumonia	28	12	5	1	4	26	26	102	9
493	Pneumonia, other and unspecified	—	4	—	1	—	4	—	9	4
500	Acute bronchitis	—	1	4	—	—	—	3	8	—
501	Bronchitis, unqualified	—	—	—	—	—	1	—	1	—
502	Chronic bronchitis	24	4	4	—	1	18	13	64	6
512	Chronic pharyngitis and nasopharyngitis	—	1	—	—	—	—	—	1	—
518	Empyema	—	—	1	—	—	—	—	1	—
521	Abcess of lung	—	—	3	—	—	—	1	4	—
522	Pulmonary congestion and hypostasis	—	—	1	—	1	—	4	6	1
523	Pneumoconiosis due to silica and silicates (occupational)	1	—	—	—	—	—	—	1	—
525	Other chronic interstitial pneumonia	1	—	—	—	—	—	—	1	1
526	Bronchiectasis	3	1	1	—	—	1	8	14	—
527	Other diseases of lung and pleural cavity	1	4	—	1	—	—	8	14	—
537	Diseases of salivary glands	—	1	—	—	—	—	—	1	—
540·0	Ulcer of stomach without mention of perforation	2	1	8	—	—	3	7	21	—
540·1	Ulcer of stomach with perforation	2	1	3	—	—	2	1	9	—
541·0	Ulcer of duodenum without mention of perforation	2	2	2	—	—	—	2	8	1
541·1	Ulcer of duodenum with perforation	—	—	3	1	—	2	2	8	1
545	Other diseases of stomach and duodenum	4	1	—	—	2	7	1	15	—
550	Acute appendicitis	2	3	1	—	—	—	1	7	1
560	Hernia of abdominal cavity without mention of obstruction	1	—	—	1	—	1	1	4	1
561	Hernia of abdominal cavity with obstruction	1	2	2	—	—	3	—	8	1
570	Intestinal obstruction without mention of hernia	2	4	4	1	—	2	2	15	2
571	Gastro-enteritis and colitis, except ulcerative, age 4 weeks and over	—	1	2	—	—	—	1	4	—
572	Chronic enteritis and ulcerative colitis	4	4	6	—	—	1	—	15	1
576	Peritonitis	1	1	—	—	—	—	—	2	—
578	Other diseases of intestines and peritoneum	2	2	1	—	—	—	1	6	2
580	Acute and subacute yellow atrophy of liver	—	—	—	—	—	—	2	2	—
581	Cirrhosis of liver	11	2	1	3	—	—	2	19	1
583	Other diseases of liver	—	1	1	—	—	1	—	3	1
584	Cholelithiasis	3	1	—	—	—	1	—	5	1
585	Cholecystitis without mention of calculi	1	1	—	—	—	2	—	4	1

Table XCIX—*continued.*

Int. Classn. No.	Disease or Condition	Agreements	Disagreements						Total certificates showing selected diagnosis for cases at which P.Ms. were held	No P.M.
			New finding at P.M.		P.M. certificate incorrect		Matters of interpretation or wording			
			AM	PM	AM	PM	AM	PM		
586	Other diseases of gall bladder and biliary ducts	1	—	—	—	—	—	1	2	1
587	Diseases of pancreas	4	2	1	—	—	—	1	8	1
591	Nephritis with oedema, including nephrosis	1	—	1	—	—	—	1	3	3
592	Chronic nephritis	7	2	—	—	—	3	1	13	4
593	Nephritis not specified as acute or chronic	2	—	—	—	1	3	2	8	—
594	Other renal sclerosis	—	—	—	—	—	—	—	—	1
600	Infections of kidney	3	1	7	—	—	3	3	17	1
602	Calculi of kidney and ureter	1	—	1	—	—	1	—	3	—
603	Other diseases of kidney and ureter	—	—	—	—	1	1	1	3	—
604	Calculi of other parts of urinary system	1	1	—	—	—	—	—	2	—
605	Cystitis	—	—	—	—	—	2	—	2	—
606	Other diseases of bladder	—	—	—	—	—	1	1	2	—
608	Stricture of urethra	—	1	—	—	—	—	—	1	—
609	Other diseases of urethra	—	—	—	—	—	2	—	2	—
610	Hyperplasia of prostate	6	3	4	—	—	7	2	22	9
611	Prostatitis	—	—	—	—	—	—	1	1	—
621	Other diseases of breast	—	—	1	—	—	—	—	1	—
625	Other diseases of ovary and Fallopian tube	—	—	—	—	1	—	—	1	—
633	Other diseases of uterus	1	—	—	—	1	—	1	3	—
642	Toxaemia of pregnancy	—	—	—	—	—	1	—	1	—
682	Puerperal phlebitis and thrombosis	—	—	1	—	—	—	—	1	—
692	Other cellulitis and abscess without mention of lymphangitis	—	—	1	—	—	—	—	1	—
704	Pemphigus	1	—	—	—	—	—	—	1	—
705	Erythematous conditions	—	1	—	—	—	—	—	1	—
710	Other hypertrophic and atrophic conditions of skin	1	—	—	—	—	1	—	2	—
715	Chronic ulcer of skin	1	—	—	—	1	1	—	3	—
720	Acute arthritis due to pyogenic organisms	—	—	—	—	—	—	1	1	—
722	Rheumatoid arthritis and allied conditions	—	—	—	—	—	—	1	1	—
723	Osteo-arthritis (arthrosis) and allied conditions	1	—	—	—	—	—	—	1	—
730	Osteomyelitis and periostitis	—	—	—	—	—	—	1	1	—
733	Other diseases of bone	—	—	—	1	—	—	—	1	1
744	Other diseases of muscle, tendon and fascia	1	—	—	—	—	—	—	1	—
751	Spina bifida and meningocele	2	—	—	—	—	1	1	4	—
752	Congenital hydrocephalus	1	—	—	—	—	—	—	1	—
753	Other congenital malformations of nervous system and sense organs	1	—	—	—	—	—	—	1	—
754	Congenital malformations of circulatory system	8	—	1	—	—	2	1	12	1
756	Congenital malformations of digestive system	2	—	1	—	—	—	—	3	—
757	Congenital malformations of genito-urinary system	3	1	—	—	—	—	—	4	1
758	Congenital malformations of bone and joint	—	—	—	1	—	—	—	1	—
759	Other and unspecified congenital malformations not elsewhere classified	—	—	1	—	—	1	2	4	—
760	Intracranial and spinal injury at birth	1	—	5	—	1	2	—	9	1
761	Other birth injury	1	2	—	—	—	1	—	4	—
762	Postnatal asphyxia and atelectasis	4	3	—	—	—	2	7	16	—
763	Pneumonia of newborn	1	1	—	—	—	1	3	6	—
770	Haemolytic disease of newborn (erythroblastosis)	3	1	—	—	—	—	—	4	—
771	Haemorrhagic disease of newborn	—	—	2	—	—	—	1	3	—
773	Ill-defined diseases peculiar to early infancy	1	—	—	—	—	2	—	3	—
774	Immaturity with mention of any other subsidiary condition	—	—	—	—	—	1	—	1	1
776	Immaturity unqualified	2	3	1	—	—	4	—	10	2
780	Certain symptoms referrable to nervous system and special senses	—	—	—	—	1	—	—	1	—

Table XCIX—*continued.*

Int. Classn. No.	Disease or Condition	Agreements	Disagreements						Total certificates showing selected diagnosis for cases at which P.Ms. were held	No P.M.
			New finding at P.M.		P.M. certificate incorrect		Matters of interpretation or wording			
			AM	PM	AM	PM	AM	PM		
782	Symptoms referrable to cardio vascular and lymphatic system	—	1	—	—	—	—	—	1	—
783	Symptoms referrable to respiratory system	—	1	—	—	—	—	—	1	—
784	Symptoms referrable to upper gastro-intestinal tract	—	1	—	—	—	—	—	1	—
785	Symptoms referrable to abdomen and lower gastro-intestinal system	—	—	—	—	—	1	—	1	—
792	Uraemia unqualified	—	3	—	—	—	—	—	3	1
794	Senility without mention of psychosis	—	—	—	—	—	1	3	4	—
N801	Fracture of base of skull	1	—	—	—	—	—	2	3	—
N803	Other and unqualified skull fractures	2	1	—	—	—	1	—	4	3
N804	Multiple fractures involving skull or face with other bones	1	—	—	—	—	—	—	1	2
N805	Fracture and fracture dislocation of vertebral column without mention of spinal cord lesion	1	—	—	—	—	1	—	2	—
N806	Fracture and fracture dislocation of vertebral column with spinal cord lesion	1	—	—	—	—	—	2	3	—
N807	Fracture of rib(s) and sternum	1	—	—	—	—	—	—	1	—
N808	Fracture of pelvis	—	—	—	—	—	—	1	1	1
N812	Fracture of humerus	—	—	1	—	—	—	1	2	—
N820	Fracture of neck of femur	3	—	1	—	—	1	4	9	—
N821	Fracture of other and unspecfied parts of femur	2	1	1	—	—	—	1	5	2
N823	Fracture of tibia and fibula	1	—	—	—	—	1	—	2	—
N828	Multiple fractures involving both lower limbs, lower with upper limb(s) with rib(s) & sternum	—	—	—	—	1	—	—	1	—
N853	Cerebral laceration and contusion	2	—	—	—	—	1	—	3	1
N854	Subarachnoid, subdural, and extra-dural hæmorrhage following injury (without mention of cerebral laceration or contusion)	—	—	2	—	—	—	—	2	—
N856	Head injury of other and unspecified nature	2	—	—	1	—	1	—	4	—
N860	Traumatic pneumothorax and haemothorax	—	—	—	—	—	1	—	1	—
N861	Injury to heart and lung	—	—	1	—	—	—	—	1	—
N863	Injury to gastro-intestinal tract	1	—	—	—	—	—	—	1	—
N864	Injury to liver	—	—	1	—	—	—	—	1	—
N867	Injury to pelvic organs	—	—	—	—	—	—	2	2	—
N869	Internal injury unspecified or involving intrathoracic with intra-abdominal organ	—	—	—	—	—	—	1	1	—
N920	Contusion of face and neck, except eye(s)	—	—	—	—	—	—	1	1	—
N933	Foreign body in pharnyx and larnyx	—	1	1	—	1	1	—	4	—
N949	Burn involving other and unspecified parts	—	—	—	—	—	1	1	2	—
N958	Spinal cord lesion without evidence of spinal bone injury	—	—	—	—	—	1	—	1	—
N964	Poisoning by corrosive aromatics, acids and caustic alkalis	1	—	—	—	—	—	—	1	—
N971	Poisoning by barbituric acid and derivatives	2	—	—	—	—	—	1	3	—
N972	Poisoning by aspirin and salicylates	—	1	—	—	—	1	—	2	—
N987	Effects of exposure, not elsewhere classified	—	1	—	1	—	—	—	2	—
N990	Drowning and non-fatal submersion	—	—	—	—	4	—	—	4	—
N991	Asphyxia and strangulation	1	—	—	—	—	—	—	1	—
N996	Injury of other and unspecified nature	1	1	—	—	—	2	—	4	1
N999	Adverse reaction to other therapeutic procedure	—	—	1	—	—	1	—	2	—
	No clinical diagnosis	—	—	—	—	—	—	—	—	5
	All diseases or conditions	**714**	**280**	**280**	**34**	**34**	**376**	**376**	—	**325**

Table C.—Number of agreements and disagreements between clinicians' and pathologists' certificates of cause of death in which there was mention of malignant neoplasm of trachea, and of bronchus and lung (I.S.C. Nos. 162, 163), by sex and age

Age Group	Sex	Agreements	Disagreements						Total
			New finding at P.M.		P.M. certificate incorrect		Matters of interpretation or wording		
			AM	PM	AM	PM	AM	PM	
Under 65	M	32	5	8	—	—	—	1	46
	F	6	—	3	—	—	—	—	9
65–74	M	15	2	5	—	—	—	1	23
	F	—	—	—	—	—	—	—	—
75 and over	M	—	1	5	—	—	—	—	6
	F	—	—	2	—	—	—	1	3
All Ages	**M**	**47**	**8**	**18**	—	—	—	**2**	**75**
	F	**6**	—	**5**	—	—	—	**1**	**12**
	P	**53**	**8**	**23**	—	—	—	**3**	**87**

Table CI.—Alternative assignments for cases attributed to malignant neoplasm of trachea, and of bronchus and lung (I.S.C. Nos. 162, 163)

Note : see Notes to Table XCIX.

	No. of cases	AM assignment when PM assignment was malignant neoplasm of trachea, and of bronchus and lung (I.S.C. Nos. 162, 163)	No. of cases	PM assignment when AM assignment was malignant neoplasm of trachea, and of bronchus and lung (I.S.C. Nos. 162, 163)
New finding at P.M.	1	002 Pulmonary tuberculosis	1	022 Aneurysm of aorta
	1	151 Malignant neoplasm, stomach	1	151 Malignant neoplasm, stomach
	1	170 Malignant neoplasm, breast	1	204·0 Lymphatic leukaemia
	1	180 Malignant neoplasm, kidney	1	421·1 Chronic endocarditis of aortic valve not specified as rheumatic
	1	181 Malignant neoplasm, bladder and other urinary organs		
	3	199 Malignant neoplasm of other and unspecified sites	1	491 Bronchopneumonia
	2	201 Hodgkin's disease	1	521 Abscess of lung
	1	237 Neoplasm of unspecified nature of brain and other parts of nervous system	1	541·1 Ulcer of duodenum with perforation
	1	304 Senile psychosis	1	N.861 Injury to heart and lung
	1	331 Cerebral haemorrhage		
	2	332 Cerebral embolism and thrombosis		
	4	420·1 Heart disease specified as involving coronary arteries		
	1	465 Pulmonary embolism and infarction		
	1	491 Bronchopneumonia		
	1	502·1 Chronic bronchitis		
	1	610 Hyperplasia of prostate		
Matters of interpretation or wording	1	150 Malignant neoplasm, oesophagus		
	1	444 Essential benign hypertension without mention of heart		
	1	502·1 Chronic bronchitis		
	26	**All diseases and conditions listed**	**8**	

Table CII.—Number of agreements and disagreements between clinicians' and pathologists' certificates of cause of death in which there was mention of vascular lesions affecting central nervous system (I.S.C. Nos. 330–334), by sex and age

Age Group	Sex	Agreements	Disagreements						Total
			New finding at P.M.		P.M. certificate incorrect		Matters of interpretation or wording		
			AM	PM	AM	PM	AM	PM	
Under 65 ..	M	14	3	—	—	1	1	2	21
	F	19	1	2	—	—	3	3	28
65–74	M	17	2	1	1	—	5	1	27
	F	13	3	1	—	—	7	3	27
75 and over ..	M	13	2	1	—	—	8	4	28
	F	19	3	—	2	—	2	4	30
All Ages	M	44	7	2	1	1	14	7	76
	F	51	7	3	2	—	12	10	85
	P	95	14	5	3	1	26	17	161

Table CIII.—Alternative assignments for cases attributed to vascular lesions affecting central nervous system (I.S.C. Nos. 330–334)

Note : see Notes to Table XCIX.

	No. of cases	AM assignment when PM assignment was vascular lesions affecting central nervous system (I.S.C. Nos. 330–334)	No. of cases	PM assignment when AM assignment was vascular lesions affecting central nervous system (I.S.C. Nos. 330–334)
New finding at P.M.	1	199 Malignant neoplasm of other and unspecified sites	3	162, 163 Malignant neoplasm of trachea, and of bronchus and lung
	1	420·1 Heart disease specified as involving coronary arteries	1	223 Benign neoplasm of brain and other parts of nervous system
	1	N.803 Other and unqualified skull fractures	2	237 Neoplasm of unspecified nature of brain and other parts of nervous system
	1	N.933 Foreign body in pharynx and larynx	1	440 Essential benign hypertension with heart disease
	1	N.987 Effects of exposure, not elsewhere classified	2	466 Other venous embolism and thrombosis
			1	500 Acute bronchitis
			1	540·0 Ulcer of stomach without mention of perforation
			1	578 Other diseases of intestines and peritoneum
			1	600·0 Pyelitis, pyelocystitis and pyelonephritis
			1	N.821 Fracture of other and unspecified parts of femur
P.M. certificate incorrect	1	527·2 Other diseases of lung and pleural cavity	1	466 Other venous embolism and thrombosis
			1	502·1 Chronic bronchitis
			1	522 Pulmonary congestion and hypostasis
Matters of interpretation or wording	1	287 Obesity, not specified as of endocrine origin	1	253 Myxoedema and cretinism
	1	352 Other cerebral paralysis	1	352 Other cerebral paralysis
	2	420·1 Heart disease specified as involving coronary arteries	1	356·0 Progressive muscular atrophy
	1	434·2 Left ventricular failure	1	410 Diseases of mitral valve
	3	443 Other and unspecified hypertensive heart disease	6	420·1 Heart disease specified as involving coronary arteries
	2	445 Essential malignant hypertension without mention of heart	2	422·1 Other myocardial degeneration with arteriosclerosis
	3	491 Bronchopneumonia	1	431 Acute myocarditis not specified as rheumatic
	1	642·1 Renal disease arising during pregnancy	1	434 Other and unspecified diseases of heart
	1	710·0 Scleroderma and dermatomyositis	2	443 Other and unspecified hypertensive heart disease
	1	794 Senility without mention of psychosis	1	444 Essential benign hypertension without mention of heart
	1	N.820 Fracture of neck of femur	1	450·0 General arteriosclerosis without mention of gangrene
			4	491 Bronchopneumonia
			1	502·0 Chronic bronchitis with emphysema
			1	541·1 Ulcer of duodenum with perforation
			1	606 Other diseases of bladder
			1	794 Senility without mention of psychosis
	23	**All diseases and conditions listed**	43	

Table CIV.—Number of agreements and disagreements between clinicians' and pathologists' certificates of cause of death in which there was mention of arteriosclerotic heart disease, including coronary disease (I.S.C. No. 420) by sex and age

Age Group	Sex	Agreements	Disagreements						Total
			New finding at P.M.		P.M. certificate incorrect		Matters of interpretation or wording		
			AM	PM	AM	PM	AM	PM	
Under 65 ..	M	27	8	2	—	—	4	4	45
	F	8	5	2	—	—	3	1	19
65–74	M	22	4	4	—	—	2	8	40
	F	14	3	2	—	—	2	10	31
75 and over ..	M	12	9	4	—	—	7	13	45
	F	10	12	3	—	—	6	16	47
All Ages	M	61	21	10	—	—	13	25	130
	F	32	20	7	—	—	11	27	97
	P	93	41	17	—	—	24	52	227

Table CV.—Alternative assignments for cases attributed to other myocardial degeneration (I.S.C. No. 422)

Note : see Notes to Table XCIX.

	No. of cases	AM assignment when PM assignment was other myocardial degeneration (I.S.C. No. 422)	No. of cases	PM assignment when AM assignment was other myocardial degeneration (I.S.C. No. 422)
New finding at P.M.			1	411 Diseases of aortic valve specified as rheumatic
			1	420·1 Heart disease specified as involving coronary arteries
			1	N.854 Subarachnoid, subdural and extradural haemorrhage following injury (without mention of cerebral laceration or contusion)
Matters of interpretation or wording	1	332 Cerebral embolism and thrombosis	7	420·1 Heart disease specified as involving coronary arteries
	1	334 Other and ill-defined vascular lesions affecting central nervous system	1	443 Other and unspecified hypertensive heart disease
	1	434·3 Other and unspecified disease of heart	1	446 Hypertension with arteriolar nephrosclerosis without mention of heart
	1	443 Other and unspecified hypertensive heart disease	2	491 Bronchopneumonia
	1	491 Bronchopneumonia	1	794 Senility without mention of psychosis
	1	605 Cystitis		
	6	**All diseases and conditions listed**	**15**	

Table CVI.—Number of agreements and disagreements between clinicians' and pathologists' certificates of cause of death in which there was mention of hypertensive disease (I.S.C. Nos. 440–447) by sex and age

Age Group	Sex	Agreements	Disagreements						Total
			New finding at P.M.		P.M. certificate incorrect		Matters of interpretation or wording		
			AM	PM	AM	PM	AM	PM	
Under 65 ..	M	8	—	2	—	1	5	4	20
	F	—	1	1	—	—	4	2	8
65–74	M	4	—	1	—	—	6	—	11
	F	—	1	1	—	—	6	2	10
75 and over ..	M	2	—	1	—	—	6	9	18
	F	6	2	3	—	—	7	1	19
All Ages	M	14	—	4	—	1	17	13	49
	F	6	4	5	—	—	17	5	37
	P	20	4	9	—	1	34	18	86

Table CVII.—Number of agreements and disagreements between clinicians' and pathologists' certificates of cause of death in which there was mention of pneumonia (I.S.C. Nos. 490–493) by sex and age

Age Group	Sex	Agreements	Disagreements						Total
			New finding at P.M.		P.M. certificate incorrect		Matters of interpretation or wording		
			AM	PM	AM	PM	AM	PM	
Under 65 ..	M	1	2	1	1	1	2	4	12
	F	2	5	1	—	1	5	3	17
65–74	M	6	1	1	—	—	5	4	17
	F	4	2	—	1	2	—	5	14
75 and over ..	M	5	4	2	—	1	10	13	35
	F	17	3	2	—	—	10	5	37
All Ages	M	12	7	4	1	2	17	21	64
	F	23	10	3	1	3	15	13	68
	P	35	17	7	2	5	32	34	132

Table CVIII.—Number of agreements and disagreements between clinicians' and pathologists' certificates of cause of death in which there was mention of bronchitis (I.S.C. Nos. 500–502) by sex and age

Age Group	Sex	Agreements	Disagreements						Total
			New finding at P.M.		P.M. certificate incorrect		Matters of interpretation or wording		
			AM	PM	AM	PM	AM	PM	
Under 65 ..	M	11	2	2	—	—	5	3	23
	F	2	1	2	—	—	4	1	10
65–74	M	9	—	1	—	—	3	3	16
	F	1	—	2	—	—	—	1	4
75 and over ..	M	1	1	1	—	—	4	5	12
	F	—	1	—	—	1	3	3	8
All Ages	M	21	3	4	—	—	12	11	51
	F	3	2	4	—	1	7	5	22
	P	24	5	8	—	1	19	16	73

Table CIX.—Number of agreements and disagreements between clinicians' and pathologists' certificates of cause of death in which there was mention of ulcer of stomach and duodenum (I.S.C. Nos. 540, 541), by sex at all ages

Age Group	Sex	Agreements	Disagreements						Total
			New finding at P.M.		P.M. certificate incorrect		Matters of interpretation or wording		
			AM	PM	AM	PM	AM	PM	
540·0, 541·0 without perforation									
All ages	M	2	2	8	—	—	—	8	20
	F	2	1	2	—	—	3	1	9
	P	4	3	10	—	—	3	9	29
540·1, 541·1 with perforation									
All ages	M	2	1	3	—	—	2	2	10
	F	1	—	2	1	—	1	—	5
	P	3	1	5	1	—	3	2	15

Table CX.—Alternative assignments for cases attributed to ulcer of stomach and duodenum (*a*) without mention of perforation (I.S.C. Nos. 540·0, 541·0) and (*b*) with mention of perforation (I.S.C. Nos. 540·1, 541·1)

Note : see Notes to Table XCIX.

	No. of cases	AM assignment when PM assignment was ulcer of stomach and duodenum without mention of perforation (I.S.C. Nos. 540·0, 541·0)	No. of cases	PM assignment when AM assignment was ulcer of stomach and duodenum without mention of perforation (I.S.C. Nos. 540·0, 541·0)
New finding at P.M.	3	151 Malignant neoplasm, stomach	1	420·1 Heart disease specified as involving coronary arteries
	1	153 Malignant neoplasm, large intestine except rectum	1	451 Aortic aneurysm specified as nonsyphilitic, and dissecting aneurysm
	1	286·5 Malnutrition, unqualified		
	1	332 Cerebral embolism and thrombosis	1	502·0 Chronic bronchitis with emphysema
	1	433·1 Other diseases of heart rhythm		
	1	592 Chronic nephritis		
	1	784·5 Haematemesis		
	1	N.972 Poisoning by aspirin and salicylates		
Matters of interpretation or wordng	1	434·1 Congestive heart failure	1	420·1 Heart disease specified as involving coronary arteries
	1	502·0 Chronic bronchitis with emphysema	1	545 Other diseases of stomach and duodenum
	1	540·1 Ulcer of stomach with perforation	1	600·0 Pyelitis, pyelocystitis, and pyelonephritis
	1	541·1 Ulcer of duodenum with perforation		
	4	545 Other diseases of stomach and duodenum		
	1	N.932 Foreign body in pharynx and larynx		
	19	**All diseases and conditions listed**	**6**	
		With perforation 540·1, 541·1		**With perforation 540·1, 541·1**
New finding at P.M.	1	155 Malignant neoplasm, biliary passages and liver	1	451 Aortic aneurysm specified as nonsyphilitic and dissecting aneurysm
	1	162 Malignant neoplasm, trachea, bronchus and lung		
	1	175 Malignant neoplasm, ovary, Fallopian tube and broad ligament		
	1	570·5 Other diseases of intestines and peritoneum		
	1	587·0 Acute pancreatitis		
P.M. certificate incorrect			1	N.828 Multiple fractures involving both lower limbs
Matters of interpretation or wording	1	331 Cerebral haemorrhage	1	420·1 Heart disease specified as involving coronary arteries
	1	447 Other hypertensive disease without mention of heart	1	540·0 Ulcer of stomach without mention of perforation
			1	541·0 Ulcer of duodenum without mention of perforation
	7	**All diseases and conditions listed**	**5**	

MISCELLANEOUS

Infectious diseases—deaths occurring a long period after onset of disease

The rules for classification, embodied in the *International Statistical Classification of Diseases, Injuries and Causes of Death, 1948*, state that "when an acute infective disease classified in categories 040–043, 050, 055, 056, 058, 084–087, 100–108 is certified as the underlying cause of some other condition and the interval between its onset and death is stated to be one year or more, it is recommended that such deaths should be appropriately identified in tabulation". This practice has been followed in England and Wales, and the deaths in question in 1956 are separately tabulated below. Four infectious diseases are involved: Scarlet fever (14 deaths), Diphtheria (5 deaths), Whooping cough (3 deaths), Measles (2 deaths).

Age at death	Interval between onset of infectious disease and death (years)					
	1–4	5–9	10–19	20–29	30–39	40 and over
	Scarlet fever (050)					
15–44	—	—	2	3	1	—
45–64	—	—	—	1	3	3
65 and over ..	—	—	—	—	—	1
	Diphtheria (055)					
15–44	—	—	—	1	—	—
45–64	—	—	1	—	1	—
65 and over ..	—	—	—	—	—	2
	Whooping cough (056)					
5–14	1	—	—	—	—	—
45–64	—	—	—	—	—	1
65 and over ..	—	1	—	—	—	—
	Measles (085)					
1–4	1	—	—	—	—	—
5–14	—	1	—	—	—	—

Details of age, sex, other conditions on the death certificate and the interval (in years) since the onset of the infectious disease are :—

Age	Sex	Associated conditions	Interval (in years) since onset of infectious disease
		Scarlet fever	
16	F	Cardiac failure ; mitral stenosis ; rheumatism	10
24	F	Mitral stenosis	11
27	M	Dilatation of heart ; valvular disease of heart ; rheumatic fever	In childhood
33	F	Acute cardiac failure ; mitral stenosis ; bronchiectasis ..	23
40	M	Uraemia ; chronic nephritis ; acute nephritis	23
41	M	Primary amyloid disease of heart	Years ago
46	M	Acute congestive heart failure ; mitral stenosis ; cardiac asthma	25
46	M	Chronic nephritis	43
48	F	Cerebral haemorrhage ; arteriosclerosis ; chronic nephritis	31
49	M	Cerebral embolism ; valvular disease of heart	In childhood
51	M	Myocardial degeneration due to pericarditis	Early childhood
52	F	Cerebral embolism ; mitral stenosis	30
60	F	Cardiac failure ; valvular disease ; pneumonia left lung ..	35
76	M	Coma ; chronic nephritis	Years ago
		Diphtheria	
25	M	Mitral stenosis and regurgitation	21
46	F	Uraemia ; Malignant hypertension ; chronic nephritis ..	37
59	F	Mitral stenosis ; herpes zoster	11
72	F	Senility	64
81	M	Myocarditis ; heart block	As a child
		Whooping cough	
7	F	Cerebral haemorrhage ; thrombocytopaenic purpura ; aplastic anaemia	Not stated
51	M	Bronchiectasis	44
71	F	Haemoptysis ; chronic bronchiectasis	7
		Measles	
3	F	Acute encephalitis ; convulsions	2
7	M	Lobar pneumonia ; encephalitis ; spastic paraplegia ..	5–6

Deaths following vaccination or other prophylactic inoculation

This section includes deaths classified to E940–E942, vaccinia, post-vaccinal encephalitis and other complications of smallpox vaccination and to E943, E944, post-immunization jaundice and hepatitis and other complications of prophylactic inoculation. Deaths classified to some other condition as the underlying cause, but with vaccination either mentioned on the certificate or ascertained by enquiry to have been associated with the death, are also mentioned here.

In 1956 three deaths were assigned to complications of vaccination against smallpox, viz. :

1. Male aged 3 months certified as post-vaccinal encephalitis*.
2. Female aged 3 months certified as post-vaccinal encephalomyelitis.
3. Male aged 6 months certified as bronchopneumonia following progressive vaccinia with congenital agammaglobulinaemia.

* This death was certified as due to, and thus assigned to, post-vaccinal encephalitis ; subsequent histological investigation revealed that no encephalitis was present and that the death ought to have been attributed to bronchopneumonia.

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There were five deaths assigned to other complications of prophylactic inoculations :

1. Female aged 15 months certified as anaphylactic shock following anti-tetanus serum injection during treatment for injuries resulting from a fall at home.
2. Female aged 3 years certified as acute tracheobronchitis and bronchopneumonia accelerated by cerebral atrophy due to post-vaccinal encephalitis.
3. Female aged 10 years certified as cerebral haemorrhage associated with anaphylactic shock following anti-tetanus treatment for fractured left arm ; injury sustained in fall from a tree.
4. Male aged 17 years certified as acute cardiac failure due to acute asthma due to tetanus anti-toxin contributed to by severe rheumatic heart disease. Tetanus anti-toxin injected following injury to scalp sustained in motor accident.
5. Male aged 25 years certified as uraemia due to ascending pyelonephritis due to transverse demyelinating myelitis due to anti-rabies treatment of dog bite. Accident occurred in Egypt.

Tetanus

Deaths from tetanus are assigned to I.S.C. No. 061 when the condition follows vaccination or a slight injury such as a scratch ; if the injury is more serious the death should be assigned to the injury.

In 1956 there were 37 deaths, 22 male and 15 female, assigned to tetanus. There were 15 deaths, 11 male and 4 female, where tetanus was mentioned in the statement of cause of death but which were assigned to other causes. Details of all these deaths are given in Table CXI (page 211).

Table CXI.—Deaths due to tetanus by sex and age, showing cause of tetanus, 1956, England and Wales

(*a*) assigned to tetanus (I.S.C. No. 061)

Age	Sex	Cause of tetanus
3 years	M	Minor injuries due to fall
4 ,,	F	Tetanus*
5 ,,	M	Laceration of leg due to a fall in garden
6 ,,	F	Splinter in leg due to fall in road
6 ,,	M	Tetanus*
6 ,,	M	Cut knee due to fall in street
7 ,,	M	Splinter in knee from a tree trunk
8 ,,	M	Nails from boot entered toe
8 ,,	M	Tetanus*
9 ,,	M	Cut knee while playing football
9 ,,	M	Wound in foot due to jumping on a nail
9 ,,	F	Scratch on knee due to fall at a farm
12 ,,	M	Injured thumb while playing in garden
19 ,,	M	Cut calf of leg with a shovel while at work in farm yard
29 ,,	F	Tetanus*
31 ,,	M	Cut finger at work on farm
35 ,,	F	Tetanus of unknown origin
39 ,,	F	Tetanus*
45 ,,	F	Tetanus*
46 ,,	M	Tetanus*
51 ,,	M	Tetanus*
53 ,,	M	Tetanus. Cause not known
55 ,,	F	Superficial scratches
56 ,,	M	Bruised thumb while pulling beet
58 ,,	F	Splinter of wood in finger
60 ,,	M	Scratch on forearm
61 ,,	F	Suspected small abrasion of skin
62 ,,	F	Tetanus*
63 ,,	M	Wood splinter in forearm
63 ,,	M	Infected varicose ulcer on leg
64 ,,	F	Tetanus*
67 ,,	F	Graze on forearm due to fall in street
67 ,,	M	Cut arm due to a fall
74 ,,	F	Cut on leg by a nail
79 ,,	M	Tetanus. Cause not known
80 ,,	F	Pricked finger with a safety pin
82 ,,	M	Nail in sole of foot.

(*b*) assigned elsewhere

3 years	M	Scalp wound due to falling out of a moving motor car
10 ,,	M	Sore under plaster for fracture due to fall while playing on grass
28 ,,	M	Cut head due to fall on frosty road
30 ,,	M	Crushed thumb while at work in ship's hold. Stitches inserted
43 ,,	F	Laceration of leg due to fall from motorcycle in collision
59 ,,	M	Strangulated inguinal hernia
63 ,,	M	Lacerated hand on factory machine
65 ,,	M	Fracture of right leg
68 ,,	F	Burns and fall at home
72 ,,	M	Gangrene of toe due to arteriosclerosis
77 ,,	M	Gangrene of toe
78 ,,	M	Ulcer in right scrotum
79 ,,	M	Wound of elbow due to fall in garden
82 ,,	F	Arteriosclerotic gangrene of foot. Amputation of gangrenous leg
83 ,,	F	Burn on foot due to hot water bottle

* No cause stated.

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Of the deaths assigned to tetanus, 14 occurred in urban and 23 in rural areas, while of those unassigned, 7 occurred in urban and 8 in rural areas.

	Assigned		Not assigned		Total	
	Urban areas	Rural districts	Urban areas	Rural districts	Urban areas	Rural districts
England and Wales	**14**	**23**	**7**	**8**	**21**	**31**
Northern	2	4	—	—	2	4
East and West Ridings	1	1	1	—	2	1
North Midland	—	5	—	1	—	6
Eastern	1	2	1	1	2	3
London and South Eastern ..	2	—	3	—	5	—
Southern	1	3	—	1	1	4
South Western	5	3	—	5	5	8
Wales (including Monmouthshire)	—	1	1	—	1	1
Midland	1	1	1	—	2	1
North Western	1	3	—	—	1	3

Distribution by sex and age of assigned cases

	All ages	0–	1–	5–	15–	45–	65 and over
M	22	—	1	9	2	7	3
F	15	—	1	2	3	6	3

Deaths from bites and stings of venomous animals and insects

Four deaths from this cause (I.S.C. No. E927) were registered in England and Wales in 1956. Deaths from this cause since 1949 are shown below by sex according to the animal or insect involved.

Year	Animal or insect					
	Bee		Wasp		Not stated	
	M	F	M	F	M	F
1949	1	1	1	7	—	—
1950	2	—	—	—	—	—
1951	—	—	1	3	—	—
1952	1	1	1	2	—	—
1953	1	2	1	1	—	1
1954	—	—	1	2	—	—
1955	—	—	3	1	—	1
1956	1	2	—	1	—	—
Total	**6**	**6**	**8**	**17**	—	**2**

Deaths in institutions

Table CXII (page 214) analyses the deaths registered in England and Wales in 1956 by cause of death and the type of place where death occurred. Of the total of 521,331 deaths registered, 246,743 (47 per cent) were in the deceased person's own home, 205,603 (39 per cent) were in hospitals (non-mental) belonging to the National Health Service, 14,081 (3 per cent) in other non-mental hospitals or nursing homes, 14,368 (3 per cent) in mental hospitals and mental deficiency hospitals belonging to the National Health Service and 15,648 (3 per cent) in other institutions (homes for the aged, schools, prisons, etc.).

The proportion of deaths in any particular class of institution varied considerably from cause to cause. Diseases of the circulatory system caused nearly 200,000 deaths of which only 27 per cent took place in hospitals (non-mental) belonging to the National Health Service. The main cause of death in mental hospitals and mental deficiency hospitals was arteriosclerotic and degenerative heart disease, which caused 5,956 (40 per cent) of the 14,974 deaths occurring in these institutions. Seventy-eight per cent of all deaths from diseases of the digestive system occurred in non-mental National Health Service hospitals.

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Table CXII.—Deaths by cause and sex according to type of institution, etc., in which they occurred, 1956, England and Wales

Cause of death	Intl. Classn. No.	Total deaths		Mental hospitals and mental deficiency hospitals				Other hospitals and institutions for the care of the sick				Other institutions		At deceased person's own home		In other private houses and other places	
				N.H.S.		Other than N.H.S.		N.H.S.		Other than N.H.S.							
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
ALL CAUSES		267,904	253,427	6,093	8,275	236	370	111,445	94,158	4,615	9,466	7,074	8,574	124,999	121,744	13,442	10,840
Infective and Parasitic Diseases	001–138	5,508	2,767	214	132	3	5	2,992	1,528	66	46	56	21	2,072	955	105	80
Tuberculosis, respiratory system	001–008	3,534	1,319	128	65	1	1	1,797	669	44	16	27	3	1,495	527	42	38
Tuberculosis, other forms	010–019	270	252	9	6	—	—	215	180	3	6	2	2	39	53	2	5
Syphilis and its sequelae	020–029	922	452	51	33	2	2	423	176	10	8	14	7	371	200	51	26
Gonococcal infection and other venereal diseases	030–039	8	—	—	—	—	—	6	—	—	—	—	—	2	—	—	—
Infectious diseases commonly arising in intestinal tract	040–049	46	55	2	11	—	—	40	31	—	1	1	1	3	10	—	1
Other bacterial diseases	050–064	274	223	1	3	—	—	201	170	2	2	1	—	62	44	7	4
Spirochaetal diseases, except syphilis	070–074	11	1	—	—	—	—	9	—	—	—	—	—	2	1	—	—
Diseases attributable to viruses	080–096	383	403	22	12	—	1	261	269	6	12	11	7	80	97	3	5
Typhus and other rickettsial diseases	100–108	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Malaria	110–117	3	1	—	—	—	—	2	1	—	—	—	—	1	—	—	—
Other infective and parasitic diseases	120–138	57	61	1	2	—	1	38	32	1	1	—	1	17	23	—	1
Neoplasms	140–239	49,675	44,679	488	575	14	21	23,349	19,080	1,186	1,967	850	867	23,062	20,161	726	2,008
Malignant neoplasm of buccal cavity and pharynx	140–148	1,234	654	10	7	—	—	525	275	24	23	43	28	619	296	13	25
Malignant neoplasm of digestive organs and peritoneum	150–159	19,157	18,175	182	227	6	6	8,607	7,272	441	788	358	334	9,263	8,665	300	883
Malignant neoplasm of respiratory system	160–165	16,523	2,897	148	34	4	3	7,282	1,284	358	119	238	42	8,245	1,278	248	137
Malignant neoplasm of breast and genito-urinary organs	170–181	6,682	17,136	57	219	2	4	3,247	6,804	214	843	139	376	2,938	8,133	85	757
Malignant neoplasm of other and unspecified sites	190–199	2,799	2,798	56	35	1	4	1,531	1,442	78	121	50	63	1,047	1,010	36	123
Neoplasms of lymphatic and haematopoietic tissues	200–205	2,540	2,115	21	28	—	2	1,680	1,388	54	44	15	14	736	573	34	66
Benign neoplasm	210–229	305	548	8	13	—	1	212	409	7	12	3	6	69	100	6	7
Neoplasm of unspecified nature	230–239	435	356	6	12	1	1	265	206	10	17	4	4	145	106	4	10
Allergic, Endocrine System, Metabolic and Nutritional Diseases	240–289	2,663	4,388	51	87	—	3	1,253	2,082	41	86	41	71	1,220	1,910	57	149
Allergic disorders	240–245	1,140	1,273	19	18	—	2	321	363	16	23	16	15	740	784	28	68
Diseases of thyroid gland	250–254	99	597	1	10	—	—	58	300	1	14	1	9	34	246	4	18
Diabetes mellitus	260	1,108	2,134	23	38	—	—	679	1,203	22	43	20	43	345	753	19	54
Diseases of other endocrine glands	270–277	124	146	3	16	—	1	75	95	1	4	2	—	42	27	1	3
Avitaminoses, and other metabolic diseases	280–289	192	238	5	5	—	—	120	121	1	2	2	4	59	100	5	6
Diseases of the Blood and Blood-forming Organs	290–299	697	1,352	8	27	1	4	397	693	19	33	13	30	247	518	12	47
Mental, Psychoneurotic and Personality Disorders	300–326	374	764	130	196	6	13	137	372	8	32	13	22	76	124	4	5
Psychoses	300–309	278	643	111	174	5	11	107	333	7	29	13	20	35	73	—	3
Psychoneurotic disorders	310–318	16	38	2	4	—	—	7	17	—	2	—	1	6	14	1	—
Disorders of character, behaviour & intelligence	320–326	80	83	17	18	1	2	23	22	1	1	—	1	35	37	3	2
Diseases of the Nervous System and Sense Organs	330–398	33,716	46,339	690	881	30	79	14,149	16,848	791	2,228	1,398	1,940	15,931	22,700	727	1,663
Vascular lesions affecting central nervous system	330–334	31,034	43,453	532	706	26	71	12,768	15,447	717	2,075	1,272	1,820	15,041	21,725	678	1,609
Inflammatory diseases of central nervous system	340–345	678	811	15	18	—	1	468	528	22	26	19	20	151	205	3	13
Other diseases of central nervous system	350–357	1,796	1,912	141	154	4	6	743	751	50	123	106	99	709	741	43	38
Diseases of nerves and peripheral ganglia	360–369	38	42	—	1	—	1	33	30	—	1	—	—	5	8	—	1
Inflammatory diseases of eye	370–379	2	7	—	—	—	—	2	6	—	1	—	—	—	—	—	—
Other diseases and conditions of eye	380–389	18	34	—	—	—	—	13	31	—	1	—	1	5	—	—	1
Diseases of ear and mastoid process	390–398	150	80	2	2	—	—	122	55	2	1	1	—	20	21	3	1
Diseases of the Circulatory System	400–468	98,097	95,810	3,045	4,306	124	163	27,910	24,680	1,480	3,662	3,112	4,024	55,607	54,360	6,819	4,615
Rheumatic fever	400–402	102	106	2	—	—	—	73	69	—	1	1	—	25	32	1	4
Chronic rheumatic heart disease	410–416	3,049	5,161	68	97	2	3	1,257	2,244	28	95	38	81	1,514	2,417	142	224
Arterisoclerotic and degenerative heart disease	420–422	74,004	65,935	2,416	3,310	94	136	17,445	13,358	1,121	2,685	2,409	3,114	44,489	39,945	6,030	3,387
Other diseases of heart	430–434	4,272	4,760	56	58	3	2	2,228	2,109	46	138	109	158	1,722	2,147	108	148
Hypertensive disease	440–447	9,298	11,100	266	495	8	7	3,617	3,506	152	426	302	378	4,650	5,787	303	501
Diseases of arteries	450–456	6,286	7,089	195	266	17	15	2,561	2,430	120	289	238	272	2,952	3,535	203	282
Diseases of veins and other diseases of cirlatory system	460–468	1,086	1,659	42	80	—	—	729	964	13	28	15	21	255	497	32	69
Diseases of the Respiratory System	470–527	35,732	24,047	928	1,234	32	39	14,834	9,194	416	617	1,034	932	17,755	11,276	733	755
Acute upper respiratory infections	470–475	68	70	2	5	—	—	28	20	—	2	—	3	34	39	4	1
Influenza	480–483	1,272	1,354	29	44	1	4	157	170	17	40	65	88	953	953	50	55
Pneumonia	490–493	11,144	11,227	608	937	16	30	6,364	5,823	138	285	343	466	3,466	3,429	209	257
Bronchitis	500–502	19,852	9,818	223	184	13	5	6,841	2,528	215	219	557	326	11,610	6,158	393	398
Other diseases of respiratory system	510–527	3,396	1,578	66	64	2	—	1,444	653	46	71	69	49	1,692	697	77	44
Diseases of the Digestive System	530–587	8,549	7,174	115	170	4	6	6,947	5,350	160	158	50	61	1,195	1,332	78	97
Diseases of buccal cavity and oesophagus	530–539	90	135	2	11	—	1	67	88	—	3	—	7	17	20	4	5
Diseases of the stomach and duodenum	540–545	3,962	1,671	57	47	4	1	3,252	1,201	63	35	23	24	529	341	34	22
Appendicitis	550–553	522	331	3	2	—	—	482	292	13	9	4	—	19	26	1	2
Hernia of abdominal cavity	560–561	768	865	12	9	—	—	603	711	20	12	6	4	116	122	11	7
Other diseases of intestines and peritoneum	570–578	1,781	2,157	28	70	—	3	1,427	1,589	36	58	11	15	262	387	17	35
Diseases of liver, gallbladder and pancreas	580–587	1,426	2,015	13	31	—	1	1,116	1,469	28	41	6	11	252	436	11	26
Diseases of the Genito-Urinary System	590–637	7,858	3,845	136	119	7	8	5,343	2,255	172	93	117	52	1,992	1,233	91	85
Nephritis and nephrosis	590–594	2,651	2,195	50	62	3	3	1,485	1,033	47	51	34	23	989	958	43	65
Other diseases of urinary system	600–609	1,264	1,430	38	53	2	5	969	1,040	19	36	23	27	200	250	13	19
Diseases of male genital organs	610–617	3,943	—	48	—	2	—	2,889	—	106	—	60	—	803	—	35	—
Diseases of breast, ovary, Fallopian tube and parametrium	620–626	—	54	—	2	—	—	—	48	—	—	—	1	—	3	—	—
Diseases of uterus and other female genital organs	630–637	—	166	—	2	—	—	—	134	—	6	—	1	—	22	—	1
Deliveries and Complications of Pregnancy, Childbirth and the Puerperium	640–689	—	399	—	3	—	—	—	322	—	3	—	—	—	55	—	16
Complications of pregnancy	640–649	—	163	—	—	—	—	—	125	—	—	—	—	—	33	—	5
Abortion	650–652	—	72	—	—	—	—	—	56	—	1	—	—	—	9	—	6
Delivery without complication	660	—	2	—	—	—	—	—	2	—	—	—	—	—	—	—	—
Delivery with specified complication	670–678	—	96	—	1	—	—	—	89	—	1	—	—	—	4	—	1
Complications of the puerperium	680–689	—	66	—	2	—	—	—	50	—	1	—	—	—	9	—	4

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Table XCII—*continued.*

Cause of death	Intl. Classn. No.	Total deaths		Mental hospitals and mental deficiency hospitals				Other hospitals and institutions for the care of the sick				Other institutions		At deceased person's own home		In other private houses and other places	
				N.H.S.		Other than N.H.S.		N.H.S.		Other than N.H.S.							
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Diseases of the Skin and Cellular Tissue ..	**690–716**	**183**	**292**	**10**	**12**	—	**1**	**134**	**178**	**7**	**11**	**5**	**11**	**27**	**74**	—	5
Infection of skin and subcutaneous tissue ..	690–698	72	91	7	10	—	1	55	54	3	1	2	2	5	21	—	2
Other diseases of skin and subcutaneous tissue	700–716	111	201	3	2	—	—	79	124	4	10	3	9	22	53	—	3
Diseases of the Bones and Organs of Movement	**720–749**	**624**	**1,236**	**10**	**18**	**1**	—	**318**	**510**	**22**	**70**	**29**	**52**	**238**	**567**	**6**	**19**
Arthritis and rheumatism, except rheumatic fever	720–727	351	951	2	7	—	—	157	353	14	54	18	44	158	476	2	17
Osteomyelitis and other diseases of bone and joint	730–738	156	189	5	9	—	—	90	97	5	13	8	4	44	64	4	2
Other diseases of musculoskeletal system ..	740–749	117	96	3	2	1	—	71	60	3	3	3	4	36	27	—	—
Congenital Malformations	**750–759**	**2,442**	**2,133**	**20**	**27**	**2**	**1**	**1,868**	**1,587**	**21**	**41**	**9**	**7**	**458**	**429**	**64**	**41**
Certain diseases of Early Infancy	**760–776**	**5,586**	**3,787**	—	—	—	—	**4,956**	**3,347**	**93**	**64**	**16**	**6**	**477**	**333**	**44**	**37**
Birth injuries, asphyxia, and infections of newborn	760–769	3,311	2,106	—	—	—	—	2,928	1,813	59	38	10	4	285	226	29	25
Other diseases peculiar to early infancy ..	770–776	2,275	1,681	—	—	—	—	2,028	1,534	34	26	6	2	192	107	15	12
Symptoms, Senility, and Ill-defined Conditions ..	**780–795**	**3,208**	**5,537**	**113**	**263**	**7**	**19**	**1,010**	**1,440**	**63**	**253**	**259**	**383**	**1,658**	**3,023**	**98**	**156**
Symptoms referable to systems or organs ..	780–789	68	72	—	—	—	—	32	36	—	2	1	2	28	25	7	7
Senility and ill-defined diseases	790–795	3,140	5,465	113	263	7	19	978	1,404	63	251	258	381	1,630	2,998	91	149
Accidents, Poisonings, and Violence (External Cause)	**E800–E999**	**12,992**	**8,878**	**135**	**225**	**5**	**8**	**5,848**	**4,692**	**70**	**102**	**72**	**95**	**2,984**	**2,694**	**3,878**	**1,062**
Railway accidents	E800–E802	292	39	1	—	—	—	94	13	1	—	—	—	2	—	194	26
Motor vehicle traffic accidents	E810–E825	3,655	1,284	10	6	—	—	2,395	881	23	5	4	—	34	19	1,189	373
Motor vehicle non-traffic accidents	E830–E835	84	13	2	—	—	—	49	7	2	—	—	—	2	2	29	4
Other road vehicle accidents	E840–E845	157	43	—	—	—	—	130	36	—	—	—	—	7	4	20	3
Water transport accidents	E850–E858	140	6	—	—	—	—	28	2	2	—	—	—	—	—	110	4
Aircraft accidents	E860–E866	130	6	—	—	—	—	6	1	2	—	—	—	9	2	113	3
Accidental poisoning by solid and liquid substances	E870–E888	165	191	2	3	—	—	90	96	1	2	1	—	49	80	22	10
Accidental poisoning by gases and vapours ..	E890–E895	360	452	—	—	—	—	59	72	—	—	2	3	241	359	58	18
Accidental falls	E900–E904	2,124	3,459	64	160	4	5	1,641	2,637	17	84	42	75	213	453	143	45
Other accidents	E910–E936	2,413	1,153	28	32	1	—	726	539	8	5	9	10	480	359	1,161	208
Complications due to non-therapeutic medical and surgical procedures	E940–E946	4	5	—	1	—	—	4	3	—	—	—	—	—	1	—	—
Therapeutic misadventure and late complications of therapeutic procedures	E950–E959	27	23	2	—	—	—	24	21	—	—	—	1	1	1	—	—
Late effects of injury and poisoning	E960–E965	153	29	4	1	—	—	67	10	9	4	2	2	67	12	4	—
Suicide and self-inflicted injury	E970–E979	3,198	2,084	22	20	—	3	496	360	5	2	12	4	1,848	1,346	815	349
Homicide and injury purposely inflicted by other persons (not in war)	E980–E985	90	91	—	2	—	—	39	14	—	—	—	—	31	56	20	19
Injury resulting from operations of war ..	E990–E999	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mortality analysis by method of certification

Table CXIII (page 218) shows an analysis of the deaths registered in England and Wales by cause and sex on the basis of the diagnosis of the cause of death so far as that is revealed by the certificate given by the coroner or certifying medical practitioner.

Of the total of 521,331 deaths, 72,794, or 14 per cent, were registered on coroners' certificates, 62,866 of these latter after post-mortem examination.

Of the 446,230 deaths registered on certificates issued by medical practitioners, 44,241 were certified after post-mortem. The total number of deaths certified after post-mortem was thus 107,107, or 21 per cent of all deaths.

The proportion varied considerably according to the cause, from 76 per cent for homicide and operations of war (including late effects) (I.S.C. Nos. E964, E965, E980–E999, 283 deaths) to 2 per cent for senility and ill-defined conditions (I.S.C. Nos. 780–795, 8,745 deaths).

Deaths under or associated with anaesthetics

Deaths in England and Wales are assigned to the underlying condition leading to death, which, in the case of deaths connected with the administration of anaesthetics, is usually the condition requiring treatment involving the use of anaesthetic. The deaths during the period 1953–56 are shown in Table CXIV (page 220) by sex and age according to the anaesthetic and associated agents employed precisely as they are shown on the coroners' certificates. No attempt has been made to group or classify this material in any way.

Previous reviews have drawn attention to the limited value of these tabulations, partly because no accurate measure is available of the population exposed to risk in each category, and partly because for any particular death it is not always clear whether, or to what extent, it was connected with, or due to, the use of anaesthetics. Since these limitations are likely to have a selective effect on the various anaesthetics recorded, the figures in Table CXIV should be used with caution.

Table CXIII.—Deaths by cause and sex, according to method of certification, 1956, England and Wales

Cause of death	Intl. Classn. No.	Total deaths		Coroner						Certifying medical practitioner								Uncertified	
				Inquest held				Post-mortem without inquest		After post-mortem		Operation mentioned on death certificate		Other examination mentioned on death certificate		No examination mentioned			
				With post-mortem		No post-mortem													
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
All causes		**267,904**	**253,427**	**10,551**	**5,537**	**5,710**	**4,218**	**28,437**	**18,341**	**24,885**	**19,356**	**5,158**	**4,692**	**188**	**136**	**191,572**	**200,243**	**1,403**	**904**
Tuberculosis of respiratory system	001–008	3,534	1,319	173	10	30	4	437	119	390	153	43	31	4	4	2,449	994	8	4
Tuberculosis, other forms	010–019	270	252	4	3	1	—	35	23	90	81	14	12	1	—	125	133	—	—
Syphilis and its sequelae	020–029	922	452	11	1	3	1	254	153	172	75	7	1	3	4	468	215	4	2
Typhoid fever	040	—	2	—	—	—	—	—	—	—	1	—	—	—	—	—	1	—	—
Dysentery, all forms	045–048	17	16	1	1	1	—	1	3	4	4	—	—	—	—	10	8	—	—
Scarlet fever and streptococcal sore throat	050–051	23	20	1	1	1	—	4	3	4	3	—	—	—	—	13	13	—	—
Diphtheria	055	5	3	—	—	—	—	1	—	1	1	—	—	—	—	3	2	—	—
Whooping cough	056	42	53	—	1	—	1	2	7	4	12	—	—	—	—	36	32	—	—
Meningococcal infections	057	109	80	2	1	1	—	39	38	30	21	—	—	—	—	37	20	—	—
Acute poliomyelitis	080	68	46	3	—	—	—	8	5	19	10	—	—	—	—	38	31	—	—
Measles	085	15	15	1	1	—	—	2	2	—	5	—	—	—	—	12	7	—	—
Malaria	110–117	3	1	—	—	—	—	2	—	1	1	—	—	—	—	—	—	—	—
All other diseases classified as infective and parasitic	Rem. 001–138	500	508	44	30	14	8	70	65	137	134	2	—	3	1	230	269	—	1
Malignant neoplasms	140–205	48,935	43,775	352	87	84	47	1,725	1,082	5,865	4,209	2,729	3,341	149	97	37,997	34,894	34	18
Benign and unspecified neoplasms	210–239	740	904	13	22	2	2	89	132	137	198	29	103	2	3	468	443	—	1
Diabetes mellitus	260	1,108	2,134	7	9	1	2	66	91	153	256	22	41	1	—	856	1,729	2	6
Anaemias	290–293	567	1,166	8	5	2	—	26	45	113	183	1	1	1	4	416	927	—	1
Vascular lesions affecting central nervous system	330–334	31,034	43,453	131	59	37	23	1,765	2,329	1,487	1,687	16	6	—	2	27,491	39,248	107	99
Non-meningococcal meningitis	340	216	171	3	1	4	—	35	36	87	55	1	—	—	1	86	78	—	—
Rheumatic fever	400–402	102	106	5	2	—	—	18	15	35	31	—	—	—	—	44	58	—	—
Chronic rheumatic heart disease	410–416	3,049	5,161	44	22	9	8	426	503	395	649	21	43	—	—	2,145	3,929	9	7
Arteriosclerotic and degenerative heart disease	420–422	74,004	65,935	645	119	119	46	4,511	6,625	3,165	2,198	24	15	7	1	54,578	56,380	955	551
Other diseases of heart	430–434	4,272	4,760	34	8	6	6	163	111	365	298	1	2	1	—	3,684	4,322	18	13
Hypertension with heart disease	440–443	5,639	7,051	26	7	5	2	463	386	395	337	2	3	—	—	4,736	6,298	12	18
Hypertension without mention of heart	444–447	3,659	4,049	38	6	6	2	524	594	313	278	6	2	—	—	2,762	3,147	10	20
Influenza	480–483	1,272	1,354	4	4	2	—	97	51	22	28	1	—	—	—	1,144	1,267	2	4
Pneumonia	490–493	11,144	11,227	126	44	20	15	1,655	1,161	1,553	1,188	1	2	—	2	7,764	8,806	25	9
Bronchitis	500–502	19,852	9,818	262	16	33	1	1,478	702	1,132	464	3	1	2	—	16,906	8,617	36	17
Ulcer of stomach and duodenum	540, 541	3,778	1,564	93	17	12	4	584	280	1,198	458	490	131	2	1	1,390	671	9	2
Appendicitis	550–553	522	331	18	9	2	6	79	51	153	102	78	62	—	—	192	101	—	—
Intestinal obstruction and hernia	560, 561, 570	1,481	1,585	51	34	14	13	311	297	422	377	227	243	—	1	454	618	2	2
Gastritis, duodenitis, enteritis and colitis, except diarrhoea of the newborn	543, 571–572	883	1,228	9	11	7	4	130	125	249	340	62	69	—	1	426	673	—	5
Cirrhosis of liver	581	618	535	26	10	2	5	65	47	162	164	9	7	—	3	353	299	1	—
Nephritis and nephrosis	590–594	2,651	2,195	18	5	4	—	145	99	438	376	1	1	—	2	2,041	1,711	4	1
Hyperplasia of prostate	610	3,852	—	43	—	21	—	193	—	551	—	880	—	—	—	2,158	—	6	—
Complications of pregnancy, childbirth and the puerperium	640–652, 660, 670–689	—	399	—	79	—	14	—	97	—	111	—	6	—	1	—	91	—	—
Congenital malformations	750–759	2,442	2,133	31	14	10	3	370	247	846	636	48	36	1	—	1,131	1,190	5	7
Birth injuries, post-natal asphyxia and atelectasis	760–762	2,679	1,692	12	17	5	2	163	127	1,286	759	1	—	—	—	1,196	777	16	10
Infections of the newborn	763–768	559	357	5	6	1	—	85	63	289	170	—	—	—	—	178	118	1	—
Other diseases peculiar to early infancy	769–776	2,348	1,738	4	4	1	2	48	25	434	338	1	—	—	—	1,839	1,362	21	7
Senility, ill-defined and unknown causes	780–795	3,208	5,537	56	23	8	4	12	41	15	34	—	—	—	—	3,087	5,408	30	27
All other diseases	Rem. 140–795	18,790	21,424	668	242	147	77	2,234	2,435	2,745	2,910	418	518	11	7	12,518	15,182	49	53
Motor vehicle accidents	E810–E835	3,739	1,297	2,213	751	1,509	542	3	1	1	—	—	—	—	—	8	1	5	2
All other accidents	E800–E802, E840–E962	5,865	5,404	3,333	2,425	2,277	2,633	104	121	25	21	20	15	—	1	74	171	32	17
Suicide and self-inflicted injury	E963, E970–E979	3,198	2,084	1,911	1,348	1,279	733	7	3	1	—	—	—	—	—	—	—	—	—
Homicide and operations of war	E964, E965, E980–E999	190	93	122	82	30	8	8	1	1	—	—	—	—	—	29	2	—	—

Table CXIV.—Deaths under, or connected with the administration of, various anaesthetics, by sex and age, in the period 1953–56, England and Wales

Anaesthetic agent or combination of agents, as stated on the coroner's certificate		Age								
		All ages	0–	5–	15–	25–	35–	45–	55–	65 and over
Amethocaine	M	8	—	—	—	1	—	1	4	2
	F	4	—	—	—	1	1	—	—	2
Amethocaine, cocaine, flaxedil, pentothal and prostigmin	F	1	—	—	—	—	—	1	—	—
Amethocaine, pethidine and trilene	F	1	—	—	1	—	—	—	—	—
Avertin, nitrous oxide and trilene	F	1	—	1	—	—	—	—	—	—
Avertin, nitrous oxide, trilene and tubarine	F	1	—	1	—	—	—	—	—	—
Chloroform	M	4	—	—	1	1	1	—	—	1
	F	5	—	—	1	4	—	—	—	—
Chloroform and ether	M	1	—	—	—	—	—	—	1	—
	F	4	—	—	1	1	2	—	—	—
Chloroform, ether and ethylchloride	M	2	1	1	—	—	—	—	—	—
Chloroform, ether, flaxedil and pentothal	M	1	—	—	1	—	—	—	—	—
Chloroform and nitrous oxide	F	1	—	1	—	—	—	—	—	—
Chloroform and nitrous oxide, curare and thiopentone	F	1	—	—	—	—	—	—	—	1
Chloroform and pethidine	F	1	—	—	1	—	—	—	—	—
Cocaine	M	2	—	—	—	—	—	—	1	1
	F	1	—	—	—	—	—	—	1	—
Cocaine and ether	F	1	1	—	—	—	—	—	—	—
Cocaine, nembutal and omnopon	F	1	—	—	—	—	—	—	—	1
Cocaine, nitrous oxide, omnopon, pentothal, pethidine and prostigmin	F	1	—	—	—	—	—	—	—	1
Cocaine, nitrous oxide and pentothal	M	1	—	—	1	—	—	—	—	—
Cocaine and novocaine	F	1	—	—	—	—	—	—	—	1
Cocaine and omnopon	M	1	—	—	—	—	—	1	—	—
Cocaine and planocaine	F	1	—	—	—	—	—	—	—	1
Cocaine and procaine	M	1	—	—	—	—	—	—	—	1
	F	2	—	—	—	—	—	—	—	2
Curare	M	1	—	—	—	—	—	—	—	1
Curare and cyclopropane	M	4	—	—	—	—	1	—	1	2
	F	2	—	—	—	—	1	—	—	1
Curare, cyclopropane and intraval	M	1	—	—	—	—	—	—	—	1
Curare, cyclopropane, omnopon, pentothal and scopolamine	M	1	—	—	—	—	—	—	1	—
Curare, cyclopropane and pentothal	M	4	—	—	—	—	—	1	3	—
	F	3	—	—	—	—	—	1	1	1
Curare, cyclopropane, pentothal and pethidine	M	1	—	—	—	—	—	—	—	1
Curare, cyclopropane, pentothal and tubarine	F	1	—	—	—	—	—	—	1	—
Curare, flaxedil and thiopentone	F	1	—	—	—	1	—	—	—	—
Curare, intraval and pethidine	F	1	—	—	—	—	—	—	—	1
Curare, kemithal, pentothal and trilene	M	1	—	—	—	—	—	—	—	1
Curare, omnopon, pentothal and scopolamine	M	1	—	—	—	—	—	—	—	1
Curare, omnopon, pentothal and vinesthene	M	1	—	—	—	—	—	—	—	1
Curare and pentothal	M	18	—	2	—	—	1	4	2	9
	F	11	—	—	1	—	4	2	—	4
Curare, pentothal and pethidine	M	2	—	—	—	—	1	—	—	1
	F	2	—	—	—	1	—	—	1	—
Curare, pentothal and prostigmin	F	1	—	—	—	—	—	—	1	—
Curare, pentothal, prostigmin and tubarine	F	1	—	—	—	—	—	1	—	—
Curare and pentothal sodium	M	1	—	—	—	—	—	—	—	1
Curare, pentothal and trilene	F	1	—	1	—	—	—	—	—	—
Curare and pethidine	F	3	1	—	—	—	—	—	1	1
Curare, pethidine and thiopentone	M	1	—	—	—	—	—	—	—	1
	F	1	—	—	—	—	—	1	—	—
Curare and thiopentone	M	3	—	—	—	—	1	1	1	—
	F	5	—	1	—	—	—	3	—	1
Cyclonal	F	1	—	—	—	—	—	1	—	—
Cyclopropane	M	21	1	—	2	2	2	4	1	9
	F	12	—	1	1	—	1	3	—	6
Cyclopropane and flaxedil	M	1	—	—	—	—	—	—	—	1
Cyclopropane, flaxedil and intraval	F	1	—	—	—	—	—	—	1	—
Cyclopropane, flaxedil and pentothal	M	13	—	—	1	—	—	—	—	12
	F	11	—	—	—	—	—	2	6	3
Cyclopropane, flaxedil and pentothal sodium	M	1	—	—	—	—	—	—	1	—
Cyclopropane, flaxedil, pentothal and pethidine	M	1	—	—	—	—	1	—	—	—
Cyclopropane, flaxedil, pentothal and prostigmin	M	1	—	—	—	—	—	—	1	—
Cyclopropane, flaxedil and sodium pentothal	F	1	—	—	1	—	—	—	—	—
Cyclopropane, flaxedil and thiopentone	F	3	—	—	—	—	1	1	—	1
Cyclopropane and gallamine	F	1	—	—	—	—	—	1	—	—
Cyclopropane, gallamine and triethiodidum	M	1	—	—	—	—	—	1	—	—
Cyclopropane and intraval	M	1	—	—	—	—	—	—	1	—
	F	1	—	—	—	—	—	—	—	1
Cyclopropane and novutox	F	1	—	—	—	—	—	1	—	—
Cyclopropane, omnopon, scopolamine, thiopentone and tubocurarine	F	1	—	—	—	—	1	—	—	—
Cyclopropane and pentothal	M	4	—	—	—	—	—	1	—	3
	F	20	—	1	—	2	2	6	3	6
Cyclopropane, pentothal and pethidine	M	1	—	—	—	—	—	—	1	—
	F	1	—	—	—	—	—	—	—	1
Cyclopropane and pentothal sodium	F	1	—	—	—	—	—	—	1	—
Cyclopropane, pentothal and tubarine	M	3	—	—	—	—	—	1	1	1
	F	1	—	—	—	—	—	—	—	1
Cyclopropane, pentothal and tubocurarine	M	1	—	—	—	—	—	—	—	1
Cyclopropane, pethidine and tubarine	M	1	—	—	—	—	1	—	—	—
Cyclopropane and thiopentone	M	9	—	1	—	—	—	1	1	6
	F	7	—	—	—	1	2	—	—	4
Cyclopropane and tubarine	F	2	—	1	—	—	1	—	—	—
Dromoran, hexamethonium and bromide	M	1	—	—	—	—	—	—	—	1
Epocaine	F	1	—	—	—	—	—	1	—	—
Ether	M	22	15	3	—	—	—	1	1	2
	F	11	3	2	1	1	1	—	1	2
Ether, coramine and pentothal	M	1	—	—	—	—	—	—	—	1
Ether, curare, cyclopropane and pentothal	M	2	—	—	—	—	—	—	—	2
Ether, curare and pentothal	M	1	—	—	—	—	—	1	—	—
	F	1	—	—	—	—	—	—	—	1
Ether, curare and trilene	M	1	1	—	—	—	—	—	—	—
Ether and cyclopropane	M	5	2	—	—	—	—	1	1	1
	F	3	—	—	—	2	1	—	—	—
Ether, cyclopropane and flaxedil	F	1	—	—	—	—	—	1	—	—

Table CXIV—*continued.*

Anaesthetic agent or combination of agents, as stated on the coroner's certificate		Age								
		All ages	0–	5–	15–	25–	35–	45–	55–	65 and over
Ether, cyclopropane, flaxedil, omnopon and thiopentone	F	1	—	—	1	—	—	—	—	—
Ether, cyclopropane, flaxedil and pentothal	M	5	—	—	—	—	—	2	—	3
Ether, cyclopropane and pentothal	M	1	—	—	—	—	—	1	—	—
	F	5	—	—	—	—	2	1	2	—
Ether and ethylchloride	M	31	24	6	—	—	—	—	1	—
	F	20	13	1	2	—	1	1	—	2
Ether, ethylchloride and nitrous oxide	M	10	7	3	—	—	—	—	—	—
	F	3	—	1	—	—	—	—	—	2
Ether, ethylchloride, nitrous oxide and cyclopropane	F	1	1	—	—	—	—	—	—	—
Ether, ethylchloride, nitrous oxide and trilene	M	1	1	—	—	—	—	—	—	—
	F	1	1	—	—	—	—	—	—	—
Ether, ethylchloride, nitrous oxide and tubarine	M	1	1	—	—	—	—	—	—	—
Ether, ethylchloride and thiopentone	M	1	—	—	—	—	—	—	1	—
Ether, ethylchloride and trichlorethylene	M	1	1	—	—	—	—	—	—	—
Ether, ethylchloride and trilene	M	1	1	—	—	—	—	—	—	—
Ether, ethylchloride and xylocaine	M	2	2	—	—	—	—	—	—	—
Ether, evipan and flaxedil	F	1	—	—	—	—	—	—	—	1
Ether, flaxedil and pentothal	M	4	—	—	—	—	—	—	3	1
	F	3	—	—	—	—	1	1	—	1
Ether, flaxedil, pentothal and pethidine	F	1	—	—	—	—	—	1	—	—
Ether, flaxedil, pentothal, pethidine and scopolamine	M	1	—	—	—	—	—	—	1	—
Ether and nitrous oxide	M	32	13	4	—	1	1	7	1	5
	F	48	6	8	2	7	5	3	4	13
Ether, nitrous oxide, amethocaine and pentothal	M	1	—	—	—	—	1	—	—	—
Ether, nitrous oxide and curare	M	1	—	—	—	—	—	—	—	1
	F	2	—	—	—	—	—	—	2	—
Ether, nitrous oxide, curare, nembutal, thiopentone and trilene	M	1	—	—	—	1	—	—	—	—
Ether, nitrous oxide, curare and pentothal	M	6	1	—	—	—	1	1	1	2
Ether, nitrous oxide, curare, pentothal and pethidine	F	1	—	—	—	—	—	1	—	—
Ether, nitrous oxide, curare, pethidine and trilene	M	1	—	—	—	—	—	—	—	1
Ether, nitrous oxide, curare and thiopentone	F	1	—	—	—	—	—	—	—	1
Ether, nitrous oxide, curare and trilene	F	1	—	—	—	1	—	—	—	—
Ether, nitrous oxide and cyclopropane	M	4	1	1	—	—	—	—	—	2
	F	2	1	—	—	—	—	1	—	—
Ether, nitrous oxide, cyclopropane and pentothal	F	2	—	—	1	—	—	1	—	—
Ether, nitrous oxide, cyclopropane, pentothal and tubocurarine	M	1	—	—	—	—	—	—	1	—
Ether, nitrous oxide, cyclopropane and thiopentone sodium	M	1	—	—	—	—	—	—	1	—
Ether, nitrous oxide, cyclopropane and trilene	F	1	—	—	—	1	—	—	—	—
Ether, nitrous oxide, evipan and flaxedil	M	1	—	—	—	—	—	—	—	1
Ether, nitrous oxide and flaxedil	M	3	1	—	—	—	—	—	1	1
	F	5	—	1	—	—	—	—	2	2
Ether, nitrous oxide, flaxedil and intraval	M	1	—	—	—	—	—	—	1	—
Ether, nitrous oxide, flaxedil, omnopon and pentothal	F	1	—	—	—	—	—	—	—	1
Ether, nitrous oxide, flaxedil, omnopon and scopolamine	F	1	—	—	—	—	—	—	—	1
Ether, nitrous oxide, flaxedil and pentothal	M	12	—	—	—	—	—	3	6	3
	F	9	—	—	—	—	1	3	2	3
Ether, nitrous oxide, flaxedil, pethidine and trilene	M	1	—	—	—	—	—	—	1	—
Ether, nitrous oxide, flaxedil and thiopentone	M	3	—	—	—	—	—	1	1	1
	F	4	—	—	—	—	3	—	—	1
Ether, nitrous oxide, flaxedil, thiopentone and xylocaine	M	1	—	—	—	—	—	1	—	—
Ether, nitrous oxide, flaxedil and vinesthene	M	1	—	—	—	—	—	—	—	1
Ether, nitrous oxide and hexobarbitone	M	1	—	—	—	—	—	—	—	1
Ether, nitrous oxide, omnopon, pentothal and pethidine	F	1	—	—	—	—	—	—	1	—
Ether, nitrous oxide, omnopon, pethidine, scopolamine and thiopentone	F	1	—	—	—	—	—	—	—	1
Ether, nitrous oxide and pentothal	M	11	—	1	—	—	—	2	—	8
	F	19	—	—	—	4	3	2	4	6
Ether, nitrous oxide and pentothal sodium	M	1	—	1	—	—	—	—	—	—
Ether, nitrous oxide, pentothal and pethidine	F	1	—	—	—	—	—	—	—	1
Ether, nitrous oxide, pentothal, pethidine and trilene	M	1	—	—	1	—	—	—	—	—
Ether, nitrous oxide, pentothal, pethidine and tubarine	F	1	—	—	—	—	—	—	—	1
Ether, nitrous oxide, pentothal and trilene	M	1	—	—	—	—	—	—	—	1
	F	2	—	—	1	—	—	—	1	—
Ether, nitrous oxide, pentothal and tubarine	M	1	—	1	—	—	—	—	—	—
	F	1	—	—	—	—	—	—	—	1
Ether, nitrous oxide and pethidine	M	2	—	—	—	1	—	—	—	1
	F	1	—	—	—	—	—	—	1	—
Ether, nitrous oxide, pethidine and thiopentone	F	1	—	—	—	—	—	—	—	1
Ether, nitrous oxide, prostigmin and thiopentone	M	1	—	—	—	—	—	1	—	—
Ether, nitrous oxide and scopolamine	F	1	1	—	—	—	—	—	—	—
Ether, nitrous oxide and thiopentone	M	5	—	—	—	—	—	—	1	4
	F	4	—	1	1	—	—	—	—	2
Ether, nitrous oxide, thiopentone and tubarine	F	1	—	—	—	—	—	—	—	1
Ether, nitrous oxide, thiopentone and xylocaine	F	1	—	—	—	—	—	1	—	—
Ether, nitrous oxide and trilene	M	3	1	—	—	—	—	1	—	1
	F	14	3	3	—	8	—	—	—	—
Ether, nitrous oxide, trilene and tubocurarine	M	1	—	—	—	—	—	1	—	—
Ether, nitrous oxide and tubarine	F	1	—	—	—	—	—	—	—	1
Ether, nitrous oxide and tubocurarine	M	1	—	—	—	—	—	1	—	—
	F	1	—	1	—	—	—	—	—	—
Ether, nitrous oxide and vinesthene	M	1	—	1	—	—	—	—	—	—
Ether, omnopon, pentothal and scopolamine	F	1	—	—	—	—	—	1	—	—
Ether and pentothal	M	5	1	—	—	2	1	—	1	—
	F	7	—	1	1	—	2	1	—	2
Ether, pentothal and trilene	M	2	—	1	—	—	—	1	—	—
	F	1	—	1	—	—	—	—	—	—
Ether, pentothal and tubocurarine	F	1	—	—	—	—	—	—	—	1
Ether and thiopentone	F	1	—	—	—	1	—	—	—	—
Ether and trilene	M	1	—	1	—	—	—	—	—	—
	F	1	—	—	—	—	—	—	1	—
Ether and vinesthene	M	1	1	—	—	—	—	—	—	—
Ethylchloride	M	6	3	2	—	—	—	1	—	—
	F	2	1	1	—	—	—	—	—	—
Ethylchloride and nitrous oxide	M	1	1	—	—	—	—	—	—	—
	F	1	1	—	—	—	—	—	—	—
Ethylchloride, nitrous oxide and trilene	F	1	1	—	—	—	—	—	—	—
Ethylchloride, thiopentone and tubocurarine	M	1	—	—	—	—	—	—	1	—
Flaxedil	M	4	1	—	—	—	1	1	—	1
	F	2	—	1	—	1	—	—	—	—

Table CXIV—*continued.*

Anaesthetic agent or combination of agents, as stated on the coroner's certificate		Age								
		All ages	0–	5–	15–	25–	35–	45–	55–	65 and over
Flaxedil, cyclopropane, pentothal and prostigmin	M	1	—	—	—	—	—	—	1	—
Flaxedil and hexobarbitone	F	1	—	—	—	—	1	—	—	—
Flaxedil and intraval	M	1	—	—	—	—	—	—	1	—
Flaxedil and kemithal	F	4	—	—	—	—	1	—	3	—
Flaxedil, nembutal and pentothal	F	2	—	1	—	—	—	—	—	1
Flaxedil, omnopon and pentothal	M	2	—	—	—	—	—	—	1	1
	F	2	—	—	—	—	—	—	2	—
Flaxedil, omnopon, pentothal and scopolamine	F	1	—	—	—	—	—	—	1	—
Flaxedil, omnopon and scopolamine	F	1	—	—	—	—	—	—	1	—
Flaxedil and pentothal	M	34	—	1	—	2	2	6	9	14
	F	29	—	—	1	3	3	4	7	11
Flaxedil and pentothal sodium	M	1	—	—	—	—	—	—	1	—
Flaxedil, pentothal and pethidene	M	4	—	—	—	—	—	—	1	3
Flaxedil, pentothal, pethidene and thiopentone	M	2	—	—	—	—	—	—	—	2
	F	2	—	—	—	—	—	—	2	—
Flaxedil, pentothal and scopolamine	F	1	—	—	—	—	—	1	—	—
Flaxedil, pentothal and thiopentone	M	1	—	—	—	—	—	—	1	—
Flaxedil, pentothal and trilene	M	2	—	—	—	—	1	—	—	1
	F	1	—	—	—	—	1	—	—	—
Flaxedil and pethidine	M	1	—	—	—	—	—	1	—	—
	F	2	1	—	—	—	—	—	—	1
Flaxedil, pethidine, procaine and thiopentone	F	1	—	—	—	—	—	—	—	1
Flaxedil, pethidine and thiopentone	M	4	—	1	—	—	—	1	1	1
	F	3	—	—	—	—	—	1	—	2
Flaxedil, pethidine, thiopentone and trilene	F	1	—	—	—	—	—	—	—	1
Flaxedil, prostigmin and thiopentone	F	1	—	—	—	—	—	—	—	1
Flaxedil and thiopentone	M	14	1	—	1	2	2	3	—	5
	F	12	—	—	—	—	—	2	2	8
Flaxedil and trilene	M	1	—	—	—	—	—	—	1	—
Flaxedil and tubarine	F	1	—	—	—	—	—	—	1	—
Gallamine, pentothal and thiopentone	F	1	—	—	—	1	—	—	—	—
Hexobarbitone, pethidine and tubarine	F	1	—	—	—	—	—	—	—	1
Intraval	M	1	—	—	—	—	—	—	—	1
Intraval and tubarine	F	1	—	—	—	—	—	1	—	—
Kemithal	M	3	—	—	—	—	1	1	1	—
	F	1	—	—	—	—	—	—	—	1
Nembutal	F	1	—	—	—	—	—	1	—	—
Nembutal and omnopon	M	1	—	—	—	—	—	—	1	—
Nitrous oxide	M	65	2	3	4	1	3	7	13	32
	F	64	5	4	2	8	6	11	9	19
Nitrous oxide and amethocaine	M	1	1	—	—	—	—	—	—	—
Nitrous oxide and curare	M	8	2	—	1	—	1	1	1	2
	F	4	—	—	—	1	—	1	1	1
Nitrous oxide, curare and cyclopropane	M	3	1	—	—	—	—	—	1	1
Nitrous oxide, curare, cyclopropane and pentothal	M	3	1	—	—	—	—	—	2	—
	F	3	—	—	—	—	—	2	—	1
Nitrous oxide, curare, cyclopropane, pentothal and pethidine	M	2	—	—	—	—	—	—	—	2
Nitrous oxide, curare, cyclopropane, pethidine and thiopentone	M	1	—	—	—	—	—	—	—	1
Nitrous oxide, curare, cyclopropane and thiopentone	M	1	—	—	—	—	—	—	1	—
Nitrous oxide, curare, flaxedil and thiopentone	M	1	—	—	—	—	—	—	—	1
Nitrous oxide, curare and hexobarbitone	M	1	—	—	—	—	—	—	—	1
Nitrous oxide, curare, intraval and pethidine	F	1	—	—	—	—	—	—	—	1
Nitrous oxide, curare and kemithal	F	1	—	—	—	—	—	—	1	—
Nitrous oxide, curare, omnopon, pentothal and scopolamine	F	1	—	—	1	—	—	—	—	—
Nitrous oxide, curare, omnopon, pentothal and trilene	F	2	—	—	—	1	—	—	—	1
Nitrous oxide, curare and pentothal	M	26	—	—	—	—	5	7	8	6
	F	13	—	1	1	1	2	2	3	3
Nitrous oxide, curare, pentothal and pethidine	M	8	—	—	—	—	1	3	4	—
	F	4	—	—	—	—	—	1	—	3
Nitrous oxide, curare, pentothal, pethidine and trilene	M	1	—	—	—	—	—	—	—	1
Nitrous oxide, curare, pentothal and prostigmin	M	2	—	—	—	—	2	—	—	—
Nitrous oxide, curare, pentothal, scopolamine and trilene	F	1	—	—	—	—	—	—	—	1
Nitrous oxide, curare, pentothal and trilene	M	1	—	—	1	—	—	—	—	—
	F	3	—	1	—	—	—	—	—	2
Nitrous oxide, curare and pethidine	M	1	—	—	—	—	—	—	1	—
	F	1	—	—	—	—	1	—	—	—
Nitrous oxide, curare, pethidine, scopolamine and thiopentone	M	1	—	—	—	—	—	1	—	—
Nitrous oxide, curare, pethidine and thiopentone	M	3	1	—	—	—	1	—	—	1
	F	1	—	—	—	—	—	1	—	—
Nitrous oxide, curare, prostigmin and thiopentone	F	1	—	—	1	—	—	—	—	—
Nitrous oxide, curare and thiopentone	M	3	—	1	—	—	1	—	1	—
	F	2	—	—	—	—	—	1	1	—
Nitrous oxide, curare, thiopentone and trilene	M	1	—	—	—	—	—	—	1	—
Nitrous oxide, cyclonal and pentothal	M	1	—	—	—	—	—	1	—	—
Nitrous oxide and cyclonal sodium	F	1	—	1	—	—	—	—	—	—
Nitrous oxide and cyclopropane	M	4	—	1	—	—	—	—	1	2
	F	5	—	—	1	—	1	—	1	2
Nitrous oxide, cyclopropane and flaxedil	F	1	—	—	—	—	1	—	—	—
Nitrous oxide, cyclopropane, flaxedil and pentothal	M	5	—	—	—	—	1	1	1	2
	F	6	—	—	—	1	—	—	2	3
Nitrous oxide, cyclopropane, flaxedil, pentothal and pethidine	M	1	—	—	—	—	—	—	—	1
	F	1	—	—	—	—	—	1	—	—
Nitrous oxide, cyclopropane, flaxedil, pethidine and thiopentone	M	1	—	—	—	—	—	—	—	1
Nitrous oxide, cyclopropane, flaxedil, prostigmin and tubarine	M	1	—	1	—	—	—	—	—	—
Nitrous oxide, cyclopropane, flaxedil and thiopentone	F	2	—	—	—	1	1	—	—	—
Nitrous oxide, cyclopropane, gallamine and triethiodidum	M	1	—	—	—	—	—	—	1	—
Nitrous oxide, cyclopropane and pentothal	M	1	—	1	—	—	—	—	—	—
	F	7	—	—	—	2	—	1	2	2
Nitrous oxide, cyclopropane, pentothal, prostigmin and trilene	F	1	—	—	—	—	—	—	—	1
Nitrous oxide, cyclopropane, pentothal and trilene	M	2	—	—	—	—	—	—	1	1
Nitrous oxide, cyclopropane, pentothal and tubarine	F	1	—	—	—	—	—	—	—	1
Nitrous oxide, cyclopropane and pethidine	M	2	—	—	—	—	—	—	—	2
Nitrous oxide, cyclopropane and thiopentone	M	1	1	—	—	—	—	—	—	—
	F	1	—	—	—	—	—	—	1	—
Nitrous oxide, cyclopropane, thiopentone and tubocurarine	F	1	—	—	—	—	—	—	1	—
Nitrous oxide, cyclopropane and tubarine	F	1	—	—	—	—	—	—	—	1
Nitrous oxide, decamethonium iodide and pentothal	M	1	—	—	—	—	—	1	—	—

Table CXIV—*continued.*

Anaesthetic agent or combination of agents, as stated on the coroner's certificate		Age								
		All ages	0–	5–	15–	25–	35–	45–	55–	65 and over
Nitrous oxide, dromoran, flaxedil and thiopentone	M	1	—	—	—	—	—	—	—	1
Nitrous oxide, dromoran and kemithal	F	1	—	—	—	—	—	—	1	—
Nitrous oxide and flaxedil	M	3	—	—	—	—	—	—	2	1
	F	5	1	1	—	—	1	—	—	2
Nitrous oxide, flaxedil, hexobarbitone and pethidine	M	2	—	—	—	—	—	—	1	1
Nitrous oxide, flaxedil, intraval and trilene	M	1	—	—	—	—	—	1	—	—
Nitrous oxide, flaxedil and kemithal	M	2	—	—	—	—	—	1	1	—
	F	2	—	—	—	1	—	—	1	—
Nitrous oxide, flaxedil, kemithal and pethidine	M	1	—	—	—	—	—	—	—	1
Nitrous oxide, flaxedil, kemithal and trilene	M	1	—	—	—	—	1	—	—	—
Nitrous oxide, flaxedil, nembutal, pentothal and trilene	F	1	—	1	—	—	—	—	—	—
Nitrous oxide, flaxedil, omnopon and pentothal	F	1	—	—	—	1	—	—	—	—
Nitrous oxide, flaxedil, omnopon, pentothal and scopolamine	M	1	—	—	—	—	—	—	—	1
Nitrous oxide, flaxedil, omnopon, pethidine, scopolamine and thiopentone	M	1	—	—	—	—	—	1	—	—
Nitrous oxide, flaxedil, omnopon, pethidine, scopolamine and trilene	F	1	—	—	—	—	—	1	—	—
Nitrous oxide, flaxedil, omnopon, scopolamine and thiopentone	M	1	—	—	—	—	—	—	1	—
	F	1	—	—	—	—	—	—	—	1
Nitrous oxide, flaxedil, omnopon, scopolamine, thiopentone and trilene	F	1	—	—	—	—	—	—	1	—
Nitrous oxide, flaxedil, omnopon, scopolamine and trilene	M	1	—	—	—	—	1	—	—	—
Nitrous oxide and flaxedil and pentothal	M	47	—	1	—	1	1	6	18	20
	F	39	—	—	—	1	3	10	9	16
Nitrous oxide, flaxedil, pentothal and pethidine	M	17	—	—	—	—	—	2	5	10
	F	8	—	—	—	—	1	2	—	5
Nitrous oxide, flaxedil, pentothal, pethidine and trilene	M	1	—	—	—	—	—	—	—	1
	F	2	—	—	—	1	—	—	1	—
Nitrous oxide, flaxedil, pentothal and prostigmin	F	1	—	—	—	—	—	1	—	—
Nitrous oxide, flaxedil, pentothal and trilene	M	10	—	—	—	—	—	1	4	5
	F	15	—	—	—	3	1	2	4	5
Nitrous oxide, flaxedil and pethidine	M	4	—	—	—	—	—	1	2	1
	F	4	—	—	—	—	—	—	2	2
Nitrous oxide, flaxedil, pethidine, scopolamine and thiopentone	M	1	—	—	—	—	—	—	—	1
Nitrous oxide, flaxedil, pethidine and thiopentone	M	7	—	—	—	—	—	1	4	2
	F	10	—	—	—	—	—	1	3	6
Nitrous oxide, flaxedil, pethidine, thiopentone and trilene	F	1	—	—	—	—	—	—	—	1
Nitrous oxide, flaxedil, pethidine and trilene	M	1	—	—	—	—	—	—	—	1
Nitrous oxide, flaxedil, prostigmin and thiopentone	F	2	—	—	—	—	—	1	—	1
Nitrous oxide, flaxedil, prostigmin, thiopentone and tubarine	F	1	—	—	—	—	—	—	—	1
Nitrous oxide, flaxedil and thiopentone	M	14	—	2	—	1	1	—	4	6
	F	19	—	—	1	1	2	3	5	7
Nitrous oxide, flaxedil, thiopentone and trilene	M	3	—	—	—	1	—	—	2	—
	F	3	—	—	—	1	—	1	—	1
Nitrous oxide, flaxedil and trilene	M	1	—	—	—	—	—	—	—	1
	F	4	—	—	—	—	—	2	2	—
Nitrous oxide, gallamine and pethidine	F	1	—	—	—	—	—	—	1	—
Nitrous oxide, gallamine and thiopentone	M	2	—	—	—	—	—	1	1	—
	F	1	—	—	—	—	—	—	—	1
Nitrous oxide, gallamine, triethiodidum and pentothal	M	1	—	—	—	—	—	—	1	—
Nitrous oxide, gallamine, triethiodidum and pethidine	M	1	—	—	—	—	—	—	1	—
Nitrous oxide, gallamine, triethiodidum and thiopentone	M	1	—	—	—	—	—	—	—	1
Nitrous oxide and kemithal	M	2	—	—	—	—	—	—	—	2
	F	1	—	—	—	—	—	—	1	—
Nitrous oxide, kemithal and pethidine	M	1	—	—	—	—	—	—	1	—
	F	1	—	1	—	—	—	—	—	—
Nitrous oxide, kemithal, pethidine, trilene and tubocurarine	F	1	—	—	—	—	—	1	—	—
Nitrous oxide, kemithal and tubocurarine	M	1	—	—	—	—	—	—	—	1
Nitrous oxide, nupercaine and pentothal	M	2	—	—	—	—	—	1	—	1
Nitrous oxide, nupercaine, pentothal and pethidine	M	1	—	—	—	—	—	—	—	1
Nitrous oxide, nupercaine and procaine	F	1	—	—	—	—	1	—	—	—
Nitrous oxide, nupercaine and thiopentone	F	2	—	—	—	—	—	—	1	1
Nitrous oxide, nupercaine and trilene	F	1	—	—	—	—	—	—	1	—
Nitrous oxide, omnopon and pentothal	F	1	—	—	—	—	—	—	1	—
Nitrous oxide, omnopon, pentothal, pethidine and scopolamine	F	1	—	—	—	—	—	—	—	1
Nitrous oxide, omnopon, pentothal, scopolamine and trilene	M	1	—	—	—	1	—	—	—	—
Nitrous oxide, omnopon, pentothal, scopolamine, trilene and tubocurarine	F	1	—	—	—	—	—	1	—	—
Nitrous oxide, omnopon, pentothal, scopolamine and tubarine	M	1	—	—	—	—	—	—	—	1
Nitrous oxide, omnopon, pethidine, prostigmin, scopolamine, thiopentone and tubocurarine	M	1	—	—	—	—	—	1	—	—
Nitrous oxide, omnopon, scopolamine and thiopentone	M	1	—	—	—	—	—	1	—	—
Nitrous oxide, omnopon, scopolamine, thiopentone and tubocurarine	F	1	—	—	—	—	—	—	—	1
Nitrous oxide, omnopon, scopolamine, thiopentone and trilene	M	1	—	—	—	—	—	1	—	—
Nitrous oxide, omnopon, scopolamine and trilene	M	1	—	—	—	—	—	—	1	—
Nitrous oxide, omnopon, trilene and tubarine	F	1	—	1	—	—	—	—	—	—
Nitrous oxide and pentothal	M	62	1	2	4	6	2	8	13	26
	F	73	—	2	1	9	3	14	14	30
Nitrous oxide, pentothal and pethidine	M	13	—	—	1	—	1	—	4	7
	F	11	—	—	—	2	3	—	2	4
Nitrous oxide, pentothal, pethidine and prostigmin	M	2	—	—	—	—	—	—	—	2
Nitrous oxide, pentothal, pethidine and thiopentone	M	1	—	—	—	—	—	—	—	1
Nitrous oxide, pentothal, pethidine and trilene	M	3	—	—	—	—	—	1	—	2
	F	1	—	—	—	—	—	1	—	—
Nitrous oxide, pentothal, pethidine, trilene and tubocurarine	F	1	—	—	—	—	—	—	—	1
Nitrous oxide, pentothal, pethidine and tubarine	M	8	—	—	—	—	1	3	2	2
	F	2	—	—	—	1	—	1	—	—
Nitrous oxide, pentothal, pethidine and tubocurarine	M	1	—	—	—	—	—	—	1	—
Nitrous oxide, pentothal and thiopentone	F	1	—	—	—	—	—	—	1	—
Nitrous oxide, pentothal, thiopentone and tubarine	F	1	—	—	—	—	—	—	—	1
Nitrous oxide, pentothal and trichlorethylene	F	1	—	—	—	—	—	—	—	1
Nitrous oxide, pentothal and trilene	M	17	—	2	2	1	2	1	2	7
	F	21	—	1	1	1	3	3	2	10
Nitrous oxide, pentothal, trilene and tubarine	M	1	—	—	—	—	—	—	—	1
	F	3	—	—	—	1	1	—	1	—
Nitrous oxide, pentothal, trilene and tubocurarine	M	1	—	—	—	—	1	—	—	—
Nitrous oxide, pentothal and tubarine	M	19	1	—	2	1	3	4	4	4
	F	10	1	—	—	—	1	2	1	5
Nitrous oxide, pentothal, tubarine and V.A.M.	F	1	—	—	—	—	—	—	1	—
Nitrous oxide, pentothal and tubocurarine	M	3	—	1	—	—	—	1	—	1
	F	3	—	—	—	—	1	—	—	2
Nitrous oxide and pethidine	M	10	—	—	—	—	1	1	2	6
	F	7	—	1	1	1	—	3	—	1

Table CXIV—*continued.*

Anaesthetic agent or combination of agents, as stated on the coroner's certificate		Age								
		All ages	0–	5–	15–	25–	35–	45–	55–	65 and over
Nitrous oxide, pethidine, prostigmin and tubarine	F	1	—	—	—	—	—	1	—	—
Nitrous oxide, pethidine and thiopentone	M	6	—	—	—	1	—	1	3	1
	F	12	—	—	—	—	1	2	2	7
Nitrous oxide, pethidine, thiopentone and trilene	F	3	—	—	—	—	—	—	—	3
Nitrous oxide, pethidine, thiopentone, trilene and tubarine	F	1	—	—	—	—	—	—	—	1
Nitrous oxide, pethidine, thiopentone and tubarine	M	1	—	—	—	—	—	1	—	—
Nitrous oxide, pethidine, thiopentone and tubocurarine	M	1	—	—	—	1	—	—	—	—
	F	1	—	—	—	—	—	—	1	—
Nitrous oxide, pethidine and trilene	M	2	—	—	—	1	—	1	—	—
	F	2	—	—	—	—	—	1	—	1
Nitrous oxide, pethidine, trilene and tubocurarine	F	1	—	—	—	—	—	—	—	1
Nitrous oxide, pethidine and tubarine	M	1	—	1	—	—	—	—	—	—
	F	5	1	—	—	1	—	3	—	—
Nitrous oxide, pethidine and tubocurarine	M	1	—	—	—	1	—	—	—	—
	F	1	—	—	—	—	—	—	1	—
Nitrous oxide and procaine	M	1	1	—	—	—	—	—	—	—
	F	1	—	—	—	—	—	1	—	—
Nitrous oxide, procaine, thiopentone and tubarine	M	1	—	—	—	—	—	1	—	—
Nitrous oxide, prostigmin, thiopentone and tubarine	M	1	—	—	—	—	—	—	1	—
Nitrous oxide and sodium pentothal	F	2	—	—	—	—	—	—	—	2
Nitrous oxide and sodium thiopentone	F	1	—	—	—	—	—	—	—	1
Nitrous oxide, sodium thiopentone and trichlorethylene	M	1	—	—	—	—	—	—	1	—
Nitrous oxide and thiopentone	M	21	—	—	3	1	—	2	4	11
	F	19	—	—	—	4	1	2	4	8
Nitrous oxide, thiopentone and trichlorethylene	F	1	—	—	—	—	—	—	—	1
Nitrous oxide, thiopentone and trilene	M	7	—	—	—	—	1	—	3	3
	F	9	—	—	—	—	2	3	—	4
Nitrous oxide, thiopentone, trilene and tubarine	F	1	—	—	—	—	—	—	1	—
Nitrous oxide, thiopentone, trilene and tubocurarine	M	1	—	—	—	—	—	—	—	1
Nitrous oxide, thiopentone, trilene and xylocaine	F	1	—	—	—	—	1	—	—	—
Nitrous oxide, thiopentone and tubarine	M	3	—	—	—	—	1	—	1	1
	F	3	—	—	—	—	1	1	1	—
Nitrous oxide, thiopentone and tubocurarine	M	1	—	—	—	—	—	—	—	1
	F	3	—	—	—	1	1	—	1	—
Nitrous oxide and trilene	M	26	1	1	—	3	—	6	1	14
	F	23	2	1	1	1	3	4	5	6
Nitrous oxide, trilene and tubarine	F	1	—	—	—	1	—	—	—	—
Nitrous oxide and tuberine	F	1	—	—	—	—	—	—	—	1
Nitrous oxide, tubocurarine and xylocaine	F	1	—	—	—	—	—	—	1	—
Novocaine	M	8	—	—	—	—	—	—	1	7
	F	4	1	—	—	—	—	1	—	2
Novutox	M	3	—	—	—	—	—	—	—	3
Nupercaine	M	7	—	—	—	—	1	—	1	5
	F	7	—	—	1	1	2	3	—	—
Nupercaine and pentothal	M	4	—	—	—	—	—	—	—	4
Nupercaine, pentothal and pethidine	M	1	—	—	—	—	—	—	—	1
Nupercaine and pethidine	F	1	—	—	—	—	1	—	—	—
Nupercaine and thiopentone	M	1	—	—	1	—	—	—	—	—
Nupercaine and xylocaine	F	1	—	—	—	—	—	1	—	—
Omnopon and pentothal	F	1	—	—	—	—	—	1	—	—
Omnopon, pentothal and pethidine	M	1	—	—	—	—	—	—	1	—
Omnopon, pentothal and scopolamine	F	1	—	—	—	—	1	—	—	—
Omnopon, pethidine and thiopentone	M	1	—	—	—	—	—	—	—	1
	F	1	—	—	—	—	—	—	—	1
Omnopon and procaine	M	2	—	—	—	—	—	—	1	1
Omnopon and scopolamine	F	3	—	—	—	1	—	—	1	1
Pentothal	M	86	1	1	3	7	12	11	19	32
	F	71	1	4	3	8	6	10	13	26
Pentothal sodium and tubocurarine	M	1	—	—	—	—	—	—	—	1
Pentothal and pethidine	M	2	—	—	—	—	—	—	—	2
	F	4	—	—	—	—	—	—	2	2
Pentothal, pethidine and scolene	M	1	—	—	—	—	—	—	—	1
Pentothal, pethidine and tubarine	M	1	—	—	—	—	—	—	—	1
	F	2	—	—	—	—	—	—	1	1
Pentothal and scopolamine	M	1	—	—	—	—	—	—	1	—
Pentothal and thiopentone	F	1	—	—	—	—	—	1	—	—
Pentothal and trilene	M	3	—	—	—	—	—	1	1	1
Pentothal and tubarine	M	4	—	—	—	1	—	—	1	2
	F	4	—	—	1	—	—	—	2	1
Pentothal and tubocurarine	M	2	—	—	—	—	—	—	—	2
Pentothal and xylocaine	F	2	—	—	—	1	—	—	—	1
Percaine	F	1	—	—	—	—	—	1	—	—
Pethidine	M	1	—	—	—	—	—	—		1
	F	4	—	—	1	—	—	—		3
Pethidine and procaine	M	1	—	—	—	—	—	—	—	1
Pethidine, prostigmin, thiopentone and tubarine	M	1	—	—	—	—	—	1	—	—
Pethidine and scopolamine	F	1	—	—	—	—	—	—	—	1
Pethidine and thiopentone	M	2	—	—	—	—	—	—	—	2
	F	6	—	—	—	1	—	—	1	4
Pethidine, thiopentone and tubarine	M	2	—	—	—	—	1	—	—	1
Pethidine and tubarine	F	1	—	—	—	1	—	—	—	—
Pethidine and xylocaine	F	1	—	—	—	—	—	—	—	1
Phenacaine	M	1	—	—	—	—	—	—	—	1
Procaine	M	13	—	—	1	—	1	1	2	8
	F	8	—	—	—	—	—	—	3	5
Sodium pentothal	F	1	—	—	—	—	—	—	1	—
Sodium thiopentone	M	3	—	—	—	—	—	1	1	1
	F	1	—	—	—	—	—	—	—	1
Thiopentone	M	26	2	—	1	—	3	6	7	7
	F	22	—	1	1	1	4	1	4	10
Thiopentone and trilene	M	2	—	—	—	—	—	—	1	1
	F	2	—	—	—	—	1	1	—	—
Thiopentone and tubarine	M	3	—	—	—	—	—	—	2	1
	F	2	—	—	—	—	1	—	—	1
Thiopentone and tubocurarine	M	1	—	—	—	—	—	—	—	1
Thiopentone and xylocaine	M	1	—	—	1	—	—	—	—	—
Trilene	M	3	1	—	—	—	1	—	1	—
	F	4	—	—	1	—	—	3	—	—
Tubarine	M	1	—	—	—	—	—	1	—	—
	F	1	—	—	—	—	—	—	—	1
Xylocaine	M	18	—	—	1	—	2	2	3	10
	F	12	2	1	—	—	1	—	—	8
Xylotox	F	1	—	—	—	—	1	—	—	—
Anaesthetic (not stated)	M	64	2	1	4	1	5	7	13	31
	F	44	1	3	—	2	2	6	10	20
Total	M	1,188	101	50	38	43	78	159	248	471
	F	1,107	50	55	36	104	105	172	187	398

Therapeutic misadventures

According to the International Statistical Classification, Numbers E950–E959, which deal with therapeutic misadventures and late complications of therapeutic procedures, are not to be used for primary death classification if the condition for which the treatment was given is known. Accordingly, deaths from therapeutic misadventure can be analysed only by secondary tabulation. It is, however, necessary to define what is meant by a therapeutic misadventure, as opposed to any complication arising after treatment. For example, pulmonary embolism or oedema following operation are met with on death certificates, but would not be regarded as therapeutic misadventures. It is not always easy for cause of death coders to decide which cases should be classed as therapeutic misadventures, and therefore they are instructed to enter in record books the cause of death in any case where treatment had an untoward result. Even so, some cases may be missed.

A special analysis, by secondary tabulation, has been made of all the deaths in 1954–56, finally judged to have been due to therapeutic misadventures, and details of them are shown in Tables CXV to CXVIII (pages 231–243). The cases have been grouped under four headings so as to bring out the nature of the misadventure :

Table CXV.	Fatal therapeutic misadventures due to adverse reaction to drug or therapy	302 cases
Table CXVI.	Fatal therapeutic misadventures due to a mistake in drug administered	13 cases
Table CXVII.	Fatal therapeutic misadventures due to an overdose of drug	287 cases
Table CXVIII.	Fatal therapeutic misadventures due to an accident in technique	90 cases

In all these tables the agents are as described by the coroner and no attempt has been made to amalgamate synonymous terms.

As the number of persons receiving a particular form of treatment is not known, no comparison can be made between the number of times different types of drugs or therapy are mentioned. For example, in Table CXV (page 232) electro-convulsive therapy was mentioned on 34 certificates and insulin on 36, and from the wording on many of the latter it would seem that the patient was being treated with insulin coma. These cases were spread out over three years and would in all probability be persons under treatment in mental hospitals. During the three years in question, the average number of residents in mental hospitals at 31st December of any year was about 146,850 and the average number of admissions just over 78,000. Not all these patients would be treated with electro-convulsive therapy or insulin coma, but the numbers give some idea of the population from which patients might be drawn.

The number of deaths due to the administration of the wrong drug was very small ; six persons in three years died through a mistake in a drug medically administered, and there were another four cases in which it was not known who administered the drug. A high proportion of deaths from an overdose occurred through taking aspirin or some kind of barbiturate ; the former can be bought freely and the latter is known to be prescribed frequently. Such considerations must be taken into account in connection with these tables.

Table CXV.—Fatal therapeutic misadventures due to adverse reaction to drug or therapy, 1954–56, England and Wales

Drug or therapy	No. of cases	Nature of adverse reaction	Terminal complication if different from preceding column
A.C.T.H.	2		
	1	Alkalosis	
	1	Hypercorticalism	Subarachnoid haemorrhage
Acetamidine ..	1	Aplastic anaemia	
Adrenalin	2		
	1	Asthma and bronchitis precipitated by injection	Ventricular fibrillation
	1	Irritation of skin, streptococcal infection	Heart failure
Amethocaine ..	1	Hypersensitivity	Cardio-respiratory paralysis
Amethocaine hydrochloride	1	Hypersensitivity	
Ansolysen	2	Paralytic ileus	
Anticoagulant ..	9		
	2	Gastro-intestinal haemorrhage	
	2	Cerebral haemorrhage	Coronary thrombosis (1 case)
	1	Acute intestinal haemorrhage	
	1	Cerebral haemorrhage due to hypertension and anticoagulant therapy	
	1	Haemorrhage into the small intestine	
	1	Intestinal haemorrhage due to purpura	
	1	Retroperitoneal haemorrhage	Acute left ventricular failure
Antistin	1	Cardiac arrest following injection	
Artane	1	Aplastic anaemia	
Aureomycin ..	1	Perforation of colon due to acute entero-colitis	
Barbitone	1	Death accelerated by administration	Bronchopneumonia
Barbiturate ..	1	Coma and respiratory paralysis	
Butazolidine ..	9		
	2	Agranulocytosis	Acute myocardial failure (1 case)
	1	Aplastic anaemia	
	1	Gastritis	
	1	Poisoning	
	1	Subacute diffuse necrosis of the liver resulting from toxic action	
	1	Toxaemia due to gangrenous inflammation with ulceration of caecum and colon	
	1	Toxic purpura and aplastic anaemia	
	1	Untoward toxic effects	Acute pulmonary oedema
Camoquin ..	1	Agranulocytic angina	
Carbon dioxide and oxygen	1	Acute anoxia associated with bilateral partial collapse of lungs	
Carbon tetrachloride	2	Uraemia	Hypostatic pneumonia
Chloral hydrate ..	1	Purpura haemorrhagica	
Chloramphenicol ..	13		

Table CXV—*continued.*

Drug or therapy	No. of cases	Nature of adverse reaction	Terminal complication if different from preceding column
Chloramphenicol—*continued*	8	Aplastic anaemia	Bronchopneumonia (1 case) Cerebral haemorrhage (1 case) Haemopericardium (1 case) Pulmonary haemorrhages and multiple haemorrhages in lungs and elsewhere (1 case)
	2	Agranulocytosis	
	1	Acute haemorrhagic purpura	Cerebral haemorrhage
	1	Haemorrhagic purpura	
	1	Thrombocytopenic purpura	
Chloramphenicol and phenergan	1	Panhaemocytopenia	Subarachnoid haemorrhage
Chlorpromazine ..	1	Toxaemic nephritis	
Cinchopen.. ..	2		
	1	Acute atrophy of liver	
	1	Acute necrosis of liver	Cholaemia
Cocaine	1	Idiosyncracy during production of topical anaesthesis	
Cortisone	4		
	1	Hypertension	Myocardial degeneration
	1	Hypertensive heart failure	
	1	Hypopotassaemia	Cerebral haemorrhage
	1	Mediastinitis	
Dindevan	2		
	1	Gastro-intestinal haemorrhage	
	1	Haemorrhage due to rupture of muscle of right leg following administration	
Diodone	2		
	1	Shock due to sudden dilation of vessels	
	1	Shock and syncope following injection	
Electro-convulsive therapy	34		
	3	Shock following treatment	Generalised atheroma and arteriosclerosis (1 case)
	2	Acute cardiac failure	
	2	,, respiratory failure	
	2	Fractured neck of right femur	Hypostatic pneumonia Toxaemia
	1	Atheromatous degeneration of the coronary arteries	Acute heart failure
	1	Atypical pulmonary consolidation	Myocardial degeneration
	1	Auricular thrombosis from mitral stenosis	Cerebral embolism and renal infarction
	1	Cardiac arrest during long period of apnoea	
	1	Cardiac failure	
	1	,, ,, due to increased strain on heart due to asphyxia	
	1	Collapse of lungs during therapy	
	1	Cerebral fat embolism	
	1	Congestive heart failure	
	1	,, ,, ,, due to aortic stenosis	
	1	Coronary thrombosis, right coronary artery	

Table CXV—*continued.*

Drug or therapy	No. of cases	Nature of adverse reaction	Terminal complication if different from preceding column
Electro-convulsive therapy—*continued*	1	Exhaustion	Acute congestive cardiac failure
	1	Fracture of left acetabulum	Bronchopneumonia
	1	Fractured femur	Hypostatic bronchopneumonia
	1	,, left femur	Bronchopneumonia and myocardial degeneration
	1	,, neck of right and left femurs	Toxaemia and toxic myocarditis
	1	Haematorachis and damage to spinal column	Right sided cardiac failure
	1	Haemorrhage into brain following upon treatment	
	1	Hypertensive cardiac failure	
	1	Inhalation of food material whilst undergoing treatment	Cardiac failure and a status asthmaticus
	1	Myocardial degeneration and hypertensive heart disease	Congestive heart failure
	1	Myocardial ischaemia	
	1	Severe arteriosclerosis	Pulmonary embolism
	1	Spontaneous pneumothorax and chronic pulmonary tuberculosis	
	1	Vasovagal inhibition	
Epanutin	2	Aplastic anaemia	Haemorrhage (1 case)
Epanutin and phenobarbitone	1	Megaloblastic anaemia	Terminal hypostatic pneumonia
Estopen	1	Acute cardiac failure due to hypersensitivity	
Ethamolin ...	1	Anaphylaxis	
Ethylchloride and ether	1	Convulsion and cardiac failure associated with sensitivity	
Gold	11		
	3	Aplastic anaemia	Bronchopneumonia (1 case) Subarachnoid cerebral haemorrhage (1 case)
	2	Thrombocytopenic purpura	Cerebral haemorrhage (1 case)
	1	Agranulocytosis	
	1	Basal meningitis	
	1	Cerebral haemorrhage and purpura	
	1	Meningitis	
	1	Pneumococcal meningitis	
	1	Thrombocytopenia	Cerebral haemorrhage
Hydrocortisone ..	2		
	1	Generalised septicaemia following injection	
	1	Septicaemia due to pericardicular abscess of right shoulder following injection	
Insulin	36		
	7	Irreversible coma	Bronchopneumonia (1 case) Cardiac respiratory failure (1 case) Hypostatic pneumonia (1 case) Prolonged cerebral anoxia (1 case) Pulmonary thrombosis (1 case)
	6	Hypoglycaemia	Anoxia (2 cases) Peripheral vascular failure (1 case) Pulmonary oedema (1 case)

Table CXV—*continued.*

Drug or therapy	No. of cases	Nature of adverse reaction	Terminal complication if different from preceding column
Insulin—*continued*	5	Hypoglycaemic coma	Aspirated fluid (1 case) Bronchopneumonia (1 case) Cerebral oedema (1 case)
	1	Acute cardiac failure	
	1	„ congestive heart failure	
	1	Acute heart failure	
	1	Acute myocardial degeneration and coronary arteriosclerosis	
	1	Acute pulmonary cerebral oedema	
	1	Acute pulmonary oedema	
	1	„ „ „ and left ventricular failure	
	1	Aortic stenosis	Congestive heart failure
	1	Asphyxia by inhalation of vomit	
	1	Collapsed and died during treatment	
	1	Collapsed while therapy was being interrupted by glucose	Acute left ventricular failure
	1	Irreversible cerebral damage due to prolonged hypoglycaemia	
	1	Inhalation of regurgitated stomach contents during treatment	Asphyxia
	1	Prolonged coma	Hypostatic pneumonia
	1	Respiratory failure	Asphyxia
	1	„ „ due to intracranial pressure due to subdural haemorrhage	
	1	Subdural haemorrhage from rupture of cervical vein during coma	
	1	Severe arteriosclerosis	Pulmonary embolism
Insulin and penicillin	1	Serum hepatitis	Hepatic coma
Iron	1	Thrombosis of right arm veins	Pulmonary embolism
Largactil	4		
	1	Agranulocytosis	
	1	Allergic poisoning	
	1	Liver failure	
	1	Toxic jaundice	
Mercaptomerin ..	2		
	1	Aplastic anaemia	Leukaemia
	1	Cellulitis of buttock	
Mercury	3		
	1	Acute mercurial dermatitis	
	1	Pink's disease	
	1	Complete aplastic anaemia	Congestive cardiac failure
Mesontoin	2		
	1	Agranulocytosis	
	1	Panhaemocytopenia	
Methylthiouracil ..	4		
	3	Agranulocytosis	Staphylococcal septicaemia (2 cases) Cerebral embolism (1 case)
	1	Agranulocytic angina	
Metol and hydroquinone	2	Methaemoglobinaemia poisoning	

Table CXV—*continued.*

Drug or therapy	No. of cases	Nature of adverse reaction	Terminal complication if different from preceding column
Morphia	1	Respiratory failure, acute attack of asthma, injections being a contributory cause	
Neo-mercazole ..	2		
	1	Agranulocytosis	Staphylococcal pneumonia
	1	Intracranial haemorrhage in the course of purpura	
Novalgin	1	Anaphylactic shock	Acute pulmonary and cerebral oedema
Paradione	1	Thrombocytopenia	
Paraldehyde ..	2		
	1	Respiratory depression	Bronchopneumonia
	1	Oedema of lungs and plugging of bronchi by mucus	
Penicillin	13		
	2	Allergic reaction	Bronchopneumonia (1 case)
	1	Acute anaphylactic reaction due to sensitivity	
	1	Agranulocytosis	
	1	Allergic shock	
	1	Anaphylactoid purpura due to dermatitis following treatment of abrasive injuries	Lobar pneumonia
	1	Anaphylactoid shock	
	1	Anaphylaxis	Acute cardiac failure
	1	Aplastic anaemia	
	1	Cellulitis of neck, pharyngitis failed to respond to treatment	
	1	Exfoliative dermatitis	
	1	Pyrexia	
	1	Thrombocytopenic purpura	Haemorrhage
Penicillin and achromycin	1	Agranulocytosis	
Penicillin and salyrgan	1	Acute tubular nephritis	Uraemia
Penicillin and streptomycin	1	Anaphylactic shock	
Pentothal	2	Hypersensitivity	Cerebral anoxia (1 case)
„ and nitrous oxide	1	Annular sclerosis of aortic valve with hypertrophy at left ventricle accelerated	
Phenergan ..	1	Agranulocytosis	
Phenothiazine ..	2	Agranulocytosis	
Phenylbutazone ..	1	Acute yellow atrophy of liver	Cholaemia
Phenylhydrazine ..	1	Leukopenia	
Physeptone ..	1	Poisoning	
Pitressin	1	Susceptibility	Coronary atheroma and occlusion
Pollaccine	2		
	1	Anaphylactic shock	
	1	Aspiration of vomit into air passages and lungs following syncope	Asphyxia
Pollen and adrenalin	1	Acute allergic reaction	
Potassium	1	Intoxication	Heart failure
Priscol, tolazoline and nicotinic acid	1	Aplastic anaemia (Priscol responsible)	

Table CXV—*continued.*

Drug or therapy	No. of cases	Nature of adverse reaction	Terminal complication if different from preceding column
Propylthiouracil ..	1	Anaemia	Left middle cerebral artery embolism
Pyelosil	1	Sensitivity reaction	Acute heart failure
Radiation	25		
	2	Anaemia	Haemorrhage (1 case)
	2	Aplastic anaemia	
	2	Postradiation stenosis	Pulmonary embolus (1 case)
			Inanition (1 case)
	1	Adhesions	Retroperitoneal abscess
	1	Agranulocytosis	
	1	Carcinoma of body of uterus and intestine	Coronary thrombosis
	1	Bilateral femoral thrombosis	Ascites
	1	Chronic pulmonary irradiation fibrosis	Congestive cardiac failure
	1	Erythraemic myelosis	Failure of muscle of heart
	1	Fibrosis	Faecal fistula, intestinal obstruction
	1	Irradiation nephritis, left kidney	Intracerebral haemorrhage
	1	Leukaemia	
	1	Postirradiation pulmonary fibrosis	Acute bronchitis
	1	Postirradiation fibrosis of both lungs	Heart failure
	1	Postradiation disphagia	Cardiac failure
	1	Radiation necrosis	
	1	Postradioactive isotope interstitial cystitis	
	1	Radionecrosis of larynx, postcricoid	Bronchopneumonia
	1	Radium necrosis, pelvis	Peritonitis
	1	Severe radiation burns	Carcinoma of bronchus
	1	Ulcer of sigmoid colon	Acute peritonitis
	1	X-ray pneumonitis	Hodgkin's disease
Salicylate	2		
	1	Acute cerebral and pulmonary oedema (person with idiosyncracy)	
	1	Haemorrhagia or operative shock following operation and associated with diminished coagulability of the blood due to prolonged medication with salicylates or amyloid degeneration	Pulmonary tuberculosis
Scoline	1	Pulmonary collapse	Bronchopneumonia
Serpasil	1	Aplastic anaemia	Coronary thrombosis
Sodium amytal ..	2		
	1	Poisoning associated with liver necrosis	
	1	Respiratory failure	
Sodium amytal and paraldehyde	1	Continuous narcosis	Cardio-respiratory paralysis
Streptomycin ..	2		
	1	Anaphylactoid reaction	Intrarenal haemorrhage
	1	Aplastic anaemia	Thrombocytopenia
Sulphatriad and chloramphenicol	1	Agranulocytosis	Bronchopneumonia

Table CXV—*continued.*

Drug or therapy	No. of cases	Nature of adverse reaction	Terminal complication if different from preceding column
Sulphonamides ..	17		
	5	Agranulocytosis	Bronchopneumonia (1 case)
			Bullous pemphigoid (2 cases)
	4	Anuria	Pulmonary embolus (1 case)
	2	Aplastic anaemia	
	1	Acute haemolytic anaemia and renal failure	
	1	Agranulocytic angina	Bronchopneumonia
	1	Allergic reaction	
	1	Anuria and upper respiratory infection	Bilateral lobar pneumonia
	1	Chronic nephritis and toxic effects	Cardio-renal failure
	1	Haemolytic anaemia	
Terramycin ..	1	Staphylococcal enteritis	
Tetanus anti-toxin	5		
	1	Acute anaphylaxis	
	1	„ asthma	Acute cardiac failure
	1	Anaphylaxis	
	1	Pulmonary oedema and inhibitional pneumonia	
	1	Serum sensitivity	Shock and bronchial spasm
Tetracycline ..	1	Diarrhoea	
Therapeutic malaria	5		
	1	Bronchopneumonia	
	1	Essential hypertension and specific aortitis	Acute heart failure
	1	Malaria (administered to treat general paralysis of insane)	
	1	Pneumonia	Pulmonary infarct
	1	Rupture of spleen following treatment	
Thiomersin ..	1	Toxaemia from cellulitis of buttock	
Transfusion ..	9		
	3	Homologous serum jaundice	Acute hepatic jaundice (1 case) Cholaemia (1 case)
	2	Uraemia	
	1	Acute anaemia caused by haemolysis of the blood	
	1	Aplastic anaemia	Renal failure
	1	Protein shock	
	1	Transfusion reaction in the face of hypertension	Nephrosis
Trilene	1	Abnormal reaction	Ventricular fibrillation
Tromexan	1	Haemorrhage into intestinal canal, probably due to hypersensitivity	
Vaccine (combined Potter)	1	Collapsed after injection, vagal shock	Asphyxia, broncho spasm
Vitamin D	1	Intoxication	Hypercalcaemia
Xylocaine	2		
	1	Hypersensitivity	Myocardial degeneration
	1	Intolerance	
Drugs (not stated)	16		
Anti-biotic ..	2		
	1	Agranulocytosis	General toxaemia
	1	Pseudomembraneous colitis	

Table CXV—*continued.*

Drug or Therapy	No. of cases	Nature of adverse reaction	Terminal complication if different from preceding column
Drugs (not stated) —*continued*			
Anti-tuberculous Drug therapy ..	1	Anaphylactic reaction	Myocardial degeneration
	11		
	5	Agranulocytosis	
	2	Aplastic anaemia	
	1	Anaphylactic purpura	
	1	Anaphylactic shock associated with bronchial asthma	
	1	Asphyxia from asthma occurring whilst under narcosis for schizophrenia	
	1	Herscheimer reaction	Encephalopathy
Injection (for asthma)	1	Anaphylactic shock	
Intravenous therapy	1	Generalised monilia infection	Asphyxia
Total	302		

Table CXVI.—Fatal therapeutic misadventures due to mistake in drug administration, 1954–56, England and Wales

Therapeutic misadventure associated with	Nature of misadventure
	Medically administered. 6 cases
Medinal	Given in mistake for sulphasomidine
Mersalyl	Injection of mersalyl instead of combined diphtheria, whooping cough and tetanus serum
Potassium chlorate ..	Given in mistake for sodium chloride
Sodium carbonate	Instead of barium—rectal administration (*2* cases)
Syrup of chloral	Nurse mistook bottle
	Self-administered. 3 cases
Adrenaline and atropine ..	Used as nasal drops instead of spray as prescribed
Oxalate	In belief for medicinal purposes
Sulfex	Did not know effects of drug
	Administration not stated. 4 cases
Amethocaine	In error for procaine
Camphor and turpentine ..	In mistake for medicine
Mercury	Instead of myodil
Turpentine	In error

Table CXVII.—Fatal therapeutic misadventures due to overdose of drug, 1954–56, England and Wales

Drug or combination of drugs	Cases		
	Medically administered	Self-administered	Administration not stated
Adrenaline	—	1	—
Alcohol and barbiturate	—	1	—
Amytal	—	1	2
Amytal and soneryl	—	—	1
Aspirin	—	18	7
Aspirin, codeine and phenacetin	—	1	—
Aspro	—	—	1
Arsenic	—	1	—
Barbital	—	3	1
Barbital and doriden	—	1	—
Barbitone	—	4	4
Barbitone sodium	—	—	1
Barbiturate	2	42	48
Barbiturate and aspirin	—	1	—
Barbiturate and carbromal	—	1	—
Barbiturate and chlorpromazine	—	—	1
Barbituric acid	—	2	—
Butobarbitone	—	—	2
Carbrital	—	1	3
Carbromal	—	1	—
Chloral and potassium bromide	—	1	—
Chloral hydrate	—	3	2
Chloroform	—	—	1
Cyclobarbitone	—	—	3
Digitalis	—	—	1
Epanutin	—	1	—
Ethobral	—	—	1
Insulin	2	2	6
Medinal	—	2	2
Morphia	—	1	—
Mepacrine	—	1	—
Morphine	—	2	—
Morphine sulphate	1	—	—
Morphine and phenobarbitone	—	—	1
Nembutal	—	8	9
Nitrous oxide	—	1	—
Paraldehyde	—	2	1
Paraldehyde and sodium amytal	—	1	—
Pethidine hydrochloride	—	1	—
Phenacetin	—	—	1
Phenobarbitone	1	9	7
Phenobarbitone sodium	—	1	—
Phenobarbitone and aspirin	—	—	1
Phenobarbitone and soneryl	—	1	—
Phenobarbitone, sodium amytal and epanutin	—	—	1
Phenobarbiturate	—	1	—
Physeptone	—	1	1
Penicillin	1	—	—
Potassium bromide, chloral and morphia	—	1	—
Protamine zinc insulin	—	—	2
Salicylate	—	1	1
Seconal	—	3	1
Sodium amytal	—	14	8
Sodium amytal and amphetamine	—	1	—
Sodium amytal and barbitone	—	1	—
Sodium amytal and soneryl	—	—	1
Soneryl	—	7	6
Surgical spirit	—	—	1
Thyroid extract	—	1	—
Tuinal	—	—	2
Tuinal, barbitone and seconal	—	1	—
Veronal	—	—	1
Total	**7**	**148**	**132**

Table CXVIII.—Fatal therapeutic misadventures due to accident in technique, 1954–56, England and Wales

Therapeutic misadventure associated with		Nature of misadventure
Air embolism	19 cases	
		Caused by air entering a vein during a blood transfusion operation.
		Cardiac and cerebral air embolism from air introduced into an enlarged liver in the course of a pneumoperitoneum refill.
		Acute heart failure due to sudden interruption of the blood flow due to air embolism caused by air entering a vein in the course of a pneumoperitoneum.
		Due to puncture of liver during artificial pneumoperitoneum for pulmonary tuberculosis.
		Cerebral air embolism, deceased was undergoing chest aspiration for empyema.
		Due to puncture of liver during pneumoperitoneum given for investigation of an abdominal abscess.
		Following puncture of the liver during pneumoperitoneum for carcinoma of the lung.
		Due to intravenous fluid administration for diabetic precoma associated with subacute pyelonephritis.
		Cerebral and coronary air embolism sustained following a puncture of the liver during attempted pneumoperitoneum.
		Due to small tear in inferior vena cava during right nephrectomy for renal calculus.
		During blood transfusion for haemorrhage following vaginal tears during childbirth.
		During transfusion following prostatectomy.
		Puncture of adventitious vessel during the refill of a pneumoperitoneum.
		Introduction of air into peritoneal cavity for treatment of fibrocaseating pulmonary tuberculosis, needle entered liver.
		Chronic lymphatic leukaemia accelerated by air embolism following blood transfusion for medical treatment of chronic lymphatic leukaemia.
		Introduction of air into an abdominal vein during pneumoperitoneum refill.
		Following lobectomy and induction of pneumoperitoneum under general anaesthetic.
		Following pelvic operation.
		Puncture of jugular vein and trachea during venal puncture for blood examination for rhesus grouping.
Anaesthesia	2 cases	
		Asphyxia due to inhalation of throat pack during dental anaesthesia.
		Cardiac arrest due to anaesthetic injected into subarachnoid space accidentally on same day, died under anaesthetic.
Apparatus	5 cases	
		Shock, blast effects of an explosion in anaesthetic machine.
		Reflex or cardiac arrest, rupture of lung and acute pneumothorax, overdistension of lungs, fault in apparatus for administration of anaesthetic.
		Anoxia following obstructed air passage due to a defective (non-patent) Rowbotham tube during administration of an anaesthetic.
		Hyperpyrexia, premature baby placed in an incubator which overheated owing to failure in thermostat control.
		Toxaemia and bronchopneumonia following burning of the mouth, pharynx and air passages due to explosion of an ether air mixture caused by an electric cautery during an operation for removal of adenoids.

Table CXVIII—*continued.*

Therapeutic misadventure associated with		Nature of misadventure
Enema	4 cases	
		Gangrenous prostatitis following faulty enema technique practised by the patient.
		Shock due to extravasation of opaque barium into the broad ligament and retroperitoneal tissues and venous spread of barium to the lungs following barium enema.
		Cardiac failure due to generalised arteriosclerosis accelerated by traumatic perforation of an inflamed diverticulum of sigmoid colon, syringe perforated the diverticulum while being given an enema.
		Peritonitis due to perforation of the rectum occasioned during administration of an enema.
Infection	12 cases	
		Bronchopneumonia, infection of transfusion site.
		Toxaemia caused by septicaemia following the transfusion of glucose infected with B. lactis aerogenes, the evidence being insufficient to determine the actual source of infection.
		Pseudomonas pyocyanea infection of urinary tract due to catheterisation with a catheter infected with Ps.pyocyanea.
		Peripheral circulatory failure, resection of upper and part of lower lobe of left lung for chronic phthisis accelerated by transfusion of infected blood.
		Acute bacterial endocarditis, septicaemia, gastrectomy for haemorrhaging gastric ulcer, infection of cut down infusion site.
		Homologous serum jaundice, routine blood sugar estimations, introduction of infected material when blood was removed.
		Clostridial abscess of thigh following arthrodesis of hip with use of surgical felt, felt used to pad plaster cast.
		Staphylococcal septicaemia following injection of hydrocortisone for rheumatoid arthritis.
		Streptococcal septicaemia, infection of a wound in the course of medical injection, rheumatoid arthritis.
		Toxaemia due to gas gangrene of the right buttock due to clostridium welchii following an injection into the muscle of the right buttock for the relief of chronic asthma.
		Cerebral abscess following ventriculography, infection along track of injecting needle.
		Chronic myocarditis with terminal heart failure and chronic pyelitis accelerated by sepsis and ulceration of skin of right thigh resulting from the application of a poultice which was too hot.
Injection	6 cases	
		Haemopneumothorax, acute shortness of breath following air injection for tuberculosis, haemorrhage had set up in right pleural space.
		Oedema of brain and pontine haemorrhage, both due to injection of Diodone reaching the brain by accident during operation to visualize an aneurysm of the splenic artery.
		Laceration of vaginal wall and injection of barium for possible new growth, into vagina instead of rectum.
		Pulmonary embolism, thrombosis of right arm following intravenous injections for anaemia.
		Shock resulting from adrenalin entering a blood vessel of a person suffering an attack of bronchial asthma.
		Shock and syncope following intravenous injection of Diodone for X-ray purposes, aggravated by chronic emphysema and pulmonary hypertension and tubercular left kidney.
Instruments	26 cases	
Appendicectomy		Asphyxia, haemorrhage into the pericardial sac due to an endotracheal tube which had become dislodged after an operation.

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Table CXVIII—*continued.*

Therapeutic misadventure associated with	Nature of misadventure
Instruments (*contd.*)	
Biopsy	Haemorrhage due to perforation of the pulmonary artery during a biopsy for carcinoma of the bronchus.
	Asphyxia due to haemorrhage following perforation of bronchus and pulmonary vein during biopsy associated with adenocarcinoma of pancreas and metastatic carcinoma of lung.
	Pyopneumothorax following perforation of oesophagus from biopsy of mucous membrane.
Bronchoscopy	Shock and pleurisy, perforation of oesophagus during intubation and bronchoscopy, inhalation of vomit, epileptic type of fit, calcification of brain.
	Asphyxia due to intrabronchial bleeding due to laceration of the trachea by a bronchoscope.
Gastroscopy	Mediastinal haemorrhage and infection due to perforation of oesophagus during gastroscopy. Diverticular colon.
	Pulmonary abscesses and retrooesphageal abscess following accidental perforation of the oesophagus by gastroscope during operation.
Hysterectomy	Paralytic ileus due to passage of urine into peritoneal cavity following accidental damage to left ureter during operation.
Oesophagoscopy	Mediastinitis, oesophagus scratched by tube.
	Mediastinitis, empyema, perforation of oesophagus, an instrument perforated the gullet.
	Emphysema developing after perforation of the oesophagus.
	Surgical emphysema and purulent mediastinitis following instrumentation of the oesophagus during investigation for a carcinoma of the oesophagus, instrument perforated oesophagus allowing access of food particles into mediastinum.
	Cardiac failure due to operative shock due to repair for perforation of the oesophagus during oesophagoscopy, pharyngeal pouch or obstruction.
	Ruptured oesophagus, instrumentation and passage of Souttar's tube, inoperable carcinoma of oesophagus.
Prostatectomy	Haemorrhage due to perforation of prostate gland by instrumentation for dilatation of urethra.
Tonsillectomy	Haemorrhage, anterior pillar of fauces torn, given blood transfusion.
Tracheotomy	Asphyxia due to accidental obstruction by tracheotomy tube in course of treatment for tetanus, contracted after receiving wound from garden fork, end of tube came out of trachea.
	Asphyxia due to laryngeal obstruction by a molar tooth which had become dislodged during the course of the introduction of an intratracheal tube.
	Asphyxia due to difficulty in replacing a tracheotomy tube.
Valvotomy	Loss of blood due to tear of wall of left atrium.
Miscellaneous	Internal haemorrhage, ruptured pulmonary artery during operation for carcinoma of lung, artery was torn during operation.
	Asphyxia due to endotracheal tube being dislodged during anaesthesia for operation on a cleft palate.

Table CXVIII—*continued.*

Therapeutic misadventure associated with	Nature of misadventure
Instruments (*contd.*)	
Miscellaneous (*contd.*)	Acute fecal peritonitis secondary to rupture of the large bowel by doctor with blunt-nosed thermometer for blockage of anus by membrane.
	Peritonitis and diabetic coma following perforation of rectum during introduction of Thiersch wire for rectal prolapse 21 days previously.
	Toxaemia, bowel obstruction, fecal peritonitis, bowel accidentally nicked after difficult closure of burst abdomen, multiple adhesions.
Ligature 6 cases	Intestinal haemorrhage due to slipped ligature following pneumonectomy.
	Shock due to internal haemorrhage due to slipped ligature following operation for removal of ovarian cyst whilst under general anaesthetic.
	Pulmonary oedema and the inhalation of blood from a branch of the pulmonary artery from which a ligature had slipped following a segmental resection of the lung for pulmonary tuberculosis.
	Internal haemorrhage due to slipped ligature following pneumonectomy for carcinoma.
	Ligature slipped off cut end of artery after operation, partial gastrectomy for carcinoma of stomach resulting in massive haemorrhage and shock.
	Rupture of aorta accidentally sustained during a thoracoplasty operation, Brook's clamp to aorta resulted in burst aorta.
Needling 6 cases	Cardiac tamponade, haemorrhage following needling, congestive cardiac failure, mitral stenosis. Cardiac tamponade followed needling for removal of pericardial effusion, post-mortem showed injury to cardiac vein. Old rheumatic fever.
	Haemorrhage into cervical cord following exploratory needling of a degenerated lesion which microscopically appears to be a central glioma, the haemorrhage was set up by needle insertion.
	Haemopericardium, perforation of the wall of right ventricle of the heart by sternal puncture needle, lymphatic leukaemia, needle penetrated too deeply.
	Asphyxia due to bleeding into the air passages due to needle puncture of the lung (aspiration), infected bronchiectasis and necrosis of lung tissue, toxic purpura.
	Congestive cardiac failure, intraperitoneal haemorrhage due to accidental laceration of liver in paracentesis of chest, needle lacerated liver.
	Wasting and pneumonia, operations for perforation of intestinal wall sustained in the course of suprapubic bladder draining, prolonged bleeding haemorrhoids.
Other misadventures 4 cases	Haemorrhage into the bundle of His due to shock during angiocardiography, anaemia and hypertension.
	Patient was prescribed and given two drachms of paraldehyde which had deteriorated and caused corrosive poisoning and died from bronchopneumonia resulting therefrom.
	Shock due to rupture of the bladder due to necrosis caused by a nylon stitch penetrating the bladder which was encased in fatty tissues, during an operation for the repair of a direct hernia.
	Haemorrhage from a tear in the wall of the auricle of the heart due to weakness of the wall from rheumatic disease, following an operation for mitral stenosis.

Live births, stillbirths and stillbirth rates by age and parity of mother and place of confinement

In 1956 there were 716,740 live and still births in England and Wales, 33,100 more than in 1955. Table CXIX (below) gives details of the distribution of these births by place of confinement.

Table CXIX.—Births by place of confinement, 1956, England and Wales

Place of confinement	Live births	Still-births	Total births	Total births per cent by place of confinement*	Stillbirth rate per 1,000 total births*
N.H.S. Hospital	420,536	12,658	433,194	60·4 (60·2)	29·2 (29·3)
Non-N.H.S. Hospital . .	27,659	369	28,028	3·9 (4·1)	13·2 (13·8)
At Home	235,572	3,116	238,688	33·3 (33·4)	13·1 (13·8)
Other	16,568	262	16,830	2·4 (2·3)	15·6 (15·5)
Total	**700,335**	**16,405**	**716,740**	**100·0**	**22·9 (23·2)**

* The figures in brackets are the corresponding figures for 1955.

The distribution of births by place of confinement showed little change from that for 1955. The increased number of births in 1956 was distributed *pro rata* over the different places of confinement with the exception of Non-National Health Service Hospitals (mainly private maternity homes) where the number of births were slightly fewer than in 1955. " Other " places of confinement include homes for unmarried mothers, remand homes, reception centres, private houses (other than the mother's usual residence), etc.

It is encouraging to note that the fall in the stillbirth rate from 23·2 in 1955 to 22·9 in 1956 was due in part to a significant fall in the stillbirth rate following home confinements from 13·8 per 1,000 total births in 1955 to 13·1 in 1956. It is possible that this was the result of slightly better selection of cases for admission to hospital, for the high rate in N.H.S. Hospitals results from their taking a high proportion of cases where difficulties are expected. The other changes in the stillbirth rates were not statistically significant.

Table CXX (page 246) gives the number of live births, Table CXXI (page 247) the number of stillbirths and Table CXXII (page 248) the percentage distribution of births for each place of confinement by age and parity of mother. Parity in this instance means the number of previous liveborn children. In these tables all illegitimate births have been included as firstborn children because, although no information about parity of the mother is obtained at the registration of an illegitimate birth, it can be assumed that the majority are firstborn.

Whatever the age of the mothers, about 80 per cent of them had their first child in either a N.H.S. Hospital or maternity home, whereas by comparison second children were more frequently born at home except in the case of those born to older women. With subsequent pregnancies the delivery of older women takes place at home more often, though not to the same extent as with the younger mother. With the latter just over 60 per cent had domiciliary confinements.

Table CXXIII (page 249) gives details of stillbirth rates per 1,000 total births by age and parity of mother and place of confinement. For all parities and all ages of mother the stillbirth rate for domiciliary confinement was less than for confinements in N.H.S. Hospitals. It has been explained above that this is due, in large part, to the tendency for deliveries where difficulties are expected to be conducted in hospital. The tabular statement below summarises Table CXXIII with respect to births in N.H.S. Hospitals and at home. From this

Parity of Mother (all ages)	Stillbirth rate per 1,000 total births		Ratio of stillbirth rate at home to that in N.H.S. Hospital
	N.H.S. Hospital	At Home	
0	27	20	0·74
1	23	9	0·39
2	35	11	0·31
3	45	12	0·27
4	49	15	0·31
5 and over	61	22	0·36
Total	**29**	**13**	**0·45**

table it is impossible to say what proportion of stillbirths occurring at home would have been prevented by adequate hospital care but the table serves to emphasize the now generally accepted opinion that primiparous women and women of high parity should be confined in hospital wherever possible and especially when there is a risk of complications. The high ratio of the primiparous stillbirth rate at home to that in hospital adds further weight to this, for it suggests that there is considerable difficulty in forecasting during pregnancy the chances of a firstborn child being stillborn when there is no previous obstetric history to guide the medical adviser.

The abnormally high stillbirth rate for babies born to mothers of unstated age suggests that this group is of abnormal constitution.

A set of tables is available for reference at the General Register Office showing numbers of live and still births with a breakdown as in Tables CXX and CXXI for individual county boroughs and administrative counties within England and Wales. A copy of these tables, or of a table for a particular area, can also be obtained from the General Register Office on payment.

Table CXX.—Live births by age and parity* of mother and place of confinement, 1956, England and Wales

Note : Institutions described as Non-N.H.S. Hospitals are mainly Maternity Homes

Age Group	Parity of Mother															
	0				1				2				3			
	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other
All Ages	**230,659**	**12,486**	**44,212**	**8,260**	**106,618**	**9,036**	**77,516**	**5,723**	**43,586**	**3,959**	**52,869**	**1,680**	**18,834**	**1,397**	**29,405**	**511**
Under 20	26,031	1,182	5,395	1,336	1,981	120	1,331	182	126	8	121	16	12	—	7	—
20–	99,100	4,924	19,407	4,411	27,879	1,770	22,641	2,350	6,287	444	8,626	445	1,323	85	2,407	93
25–	65,538	4,015	11,745	1,846	40,097	3,557	31,602	2,270	13,980	1,108	19,877	696	5,018	317	9,871	211
30–	26,968	1,707	5,019	496	24,533	2,524	16,202	702	12,993	1,331	15,714	350	6,021	483	9,846	112
35–	9,910	511	1,926	130	9,689	896	4,880	186	7,682	842	7,105	145	4,555	384	5,806	76
40–	2,554	111	515	19	2,168	153	685	18	2,325	208	1,270	23	1,755	120	1,341	18
45 and over	138	6	42	—	114	8	22	—	117	10	47	2	115	4	55	—
Not stated	420	30	163	22	157	8	153	15	76	8	109	3	35	4	72	1

Age Group	4				5 and over				Total			
	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other
All Ages	**9,352**	**450**	**15,387**	**229**	**11,487**	**331**	**16,183**	**165**	**420,536**	**27,659**	**235,572**	**16,568**
Under 20	1	—	1	1	1	—	—	—	28,152	1,310	6,855	1,535
20–	332	17	655	21	91	5	163	2	135,012	7,245	53,899	7,322
25–	2,144	81	4,281	71	1,386	40	2,488	41	128,163	9,118	79,864	5,135
30–	2,978	159	5,533	64	3,338	92	5,460	65	76,831	6,296	57,774	1,789
35–	2,609	126	3,745	52	3,954	135	5,469	44	38,399	2,894	28,931	633
40–	1,158	59	1,087	18	2,423	48	2,362	10	12,383	699	7,260	106
45 and over	113	8	48	1	262	10	199	3	859	46	413	6
Not stated	17	—	37	1	32	1	42	—	737	51	576	42

* Parity in this instance means the number of previous liveborn children.

(72569)

Table CXXI.—Stillbirths by age and parity* of mother and place of confinement, 1956, England and Wales

Note : Institutions described as Non-N.H.S. Hospitals are mainly Maternity Homes

Age Group	Parity of Mother															
	0				1				2				3			
	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other
All Ages	**6,496**	**215**	**898**	**151**	**2,475**	**75**	**696**	**67**	**1,579**	**48**	**563**	**22**	**880**	**14**	**365**	**12**
Under 20	591	22	106	21	27	—	13	3	2	—	1	—	—	—	—	—
20–	2,303	70	309	47	516	12	158	15	158	2	77	7	48	1	25	—
25–	1,806	54	249	27	831	20	258	28	470	13	194	7	190	1	101	3
30–	1,067	38	113	16	647	23	159	16	477	13	158	5	275	6	115	5
35–	495	23	68	4	355	14	83	4	354	13	101	3	246	4	81	4
40–	147	7	23	—	92	5	22	1	103	7	30	—	106	2	40	—
45 and over	3	—	—	—	3	—	1	—	10	—	2	—	14	—	2	—
Not stated	84	1	30	36	4	1	2	—	5	—	—	—	1	—	1	—

Age Group	4				5 and over				Total			
	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other
All Ages	**483**	**9**	**230**	**6**	**745**	**8**	**364**	**4**	**12,658**	**369**	**3,116**	**262**
Under 20	—	—	—	—	—	—	—	—	620	22	120	24
20–	11	—	9	1	2	—	1	—	3,038	85	579	70
25–	91	1	53	3	59	1	43	—	3,447	90	898	68
30–	137	2	62	1	172	2	82	1	2,775	84	689	44
35–	148	2	75	1	272	3	133	3	1,870	59	541	19
40–	87	4	30	—	204	2	93	—	739	27	238	1
45 and over	7	—	—	—	33	—	10	—	70	—	15	—
Not stated	2	—	1	—	3	—	2	—	99	2	36	36

* Parity in this instance means the number of previous liveborn children.

Table CXXII.—Percentage distribution of births for each place of confinement within each age and parity* group, 1956, England and Wales

Note : Institutions described as Non-N.H.S. Hospitals are mainly Maternity Homes

Age Group	Parity of Mother															
	0				1				2				3			
	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other
All Ages	**78**	**4**	**15**	**3**	**53**	**5**	**39**	**3**	**43**	**4**	**51**	**2**	**38**	**3**	**58**	**1**
Under 20	77	3	16	4	55	3	37	5	47	*3*	44	*6*	*63*	—	*37*	—
20–	78	4	15	3	52	3	41	4	40	3	54	3	35	2	61	2
25–	79	5	14	2	52	5	40	3	40	3	55	2	33	2	64	1
30–	80	5	14	1	56	6	36	2	43	4	52	1	37	3	59	1
35–	80	4	15	1	62	6	31	1	50	5	44	1	43	3	53	1
40–	80	3	16	*1*	72	5	22	*1*	61	5	33	1	54	4	41	*1*
45 and over ..	75	*3*	22	—	79	*5*	16	—	68	*5*	26	*1*	68	*2*	30	—
Not stated	64	4	25	7	47	*3*	46	*4*	40	*4*	55	*1*	32	*4*	63	*1*

Age Group	4				5 and over				Total			
	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other
All Ages	**38**	**2**	**59**	**1**	**42**	**1**	**56**	**1**	**61**	**4**	**33**	**2**
Under 20	*33*	—	*34*	*33*	*100*	—	—	—	75	3	18	4
20–	33	*2*	63	2	35	*2*	62	*1*	66	4	26	4
25–	33	1	65	1	36	1	62	1	58	4	36	2
30–	35	2	62	1	38	1	60	1	55	4	40	1
35–	41	2	56	1	42	1	57	0	55	4	40	1
40–	50	3	46	*1*	51	1	48	*0*	62	3	35	0
45 and over ..	67	*5*	27	*1*	57	*2*	40	*1*	67	3	30	*0*
Not stated	*33*	—	65	*2*	44	*1*	55	—	53	3	39	5

* Parity in this instance means the number of previous liveborn children.

Table CXXIII.—Stillbirth rates per 1,000 total births, by age and parity* of mother and place of confinement, 1956, England and Wales

Note : Institutions described as Non-N.H.S. Hospitals are mainly Maternity Homes

Age Group	Parity of Mother															
	0				1				2				3			
	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other
All Ages	**27**	**17**	**20**	**18**	**23**	**8**	**9**	**12**	**35**	**12**	**11**	**13**	**45**	**10**	**12**	**23**
Under 20	22	18	19	15	13	—	*10*	*16*	*16*	—	*8*	—	—	—	—	—
20–	23	14	16	11	18	*7*	*7*	*6*	25	*4*	9	*15*	35	*12*	10	—
25–	27	13	21	14	20	6	8	12	33	*12*	10	*10*	36	*3*	10	*14*
30–	38	22	22	*31*	26	9	10	*22*	35	*10*	10	*14*	44	*12*	12	*43*
35–	48	43	34	*30*	35	*15*	17	*21*	44	*15*	14	*20*	51	*10*	14	*50*
40 and over ..	53	*56*	40	—	40	*30*	32	*53*	44	*31*	24	—	60	*16*	29	—
Not stated	167	*32*	155	621	*25*	*111*	*13*	—	*62*	—	—	—	*28*	—	*14*	—

Age Group	4				5 and over				Total			
	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other	N.H.S. Hospital	Non-N.H.S. Hospital	At Home	Other
All Ages	**49**	**20**	**15**	**26**	**61**	**24**	**22**	**24**	**29**	**13**	**13**	**16**
Under 20	—	—	—	—	—	—	—	—	22	17	17	15
20–	*32*	—	*14*	*45*	*22*	—	*6*	—	22	12	11	9
25–	41	*12*	12	*41*	41	*24*	17	—	26	10	11	13
30–	44	*12*	11	*15*	49	*21*	15	*15*	35	13	12	24
35–	54	*16*	20	*19*	64	*22*	24	*64*	46	20	18	*29*
40 and over ..	69	*56*	26	—	81	*33*	39	—	58	35	32	*9*
Not stated	*105*	—	*26*	—	*86*	—	*45*	—	118	*38*	59	462

* Parity in this instance means the number of previous liveborn children.

ADVISORY COMMITTEE ON MEDICAL NOMENCLATURE AND STATISTICS

Report (dated August, 1957) on the work of the Committee for 1955 and 1956

Introductory

This is the fourth report on the Committee's work, each report covering a period of two years. There were a number of changes in membership during the period covered by this report. A list of members is given at the end of the report.

The Cancer Sub-committee continues to advise on cancer statistics generally and on the presentation of the results of cancer registration in particular. The Sub-committee on Statistics, whose report on the Measurement of Morbidity was published in 1954, has not met during the period covered by this report, but has since been asked to consider and advise on methods of presentation of mortality rates.

A Sub-committee on Cardiovascular Disease has been set up to consider the terminology and statistical classification of these diseases with the ultimate object of suggesting amendments to the appropriate sections of the International Statistical Classification of Diseases, Injuries and Causes of Death.

Code of Operations

The draft code previously prepared has been further revised, printed and published. A Classification of Radiotherapeutic Procedures and a Classification of Anaesthetic Procedures have been published with the code.

A large number of hospitals in England and Wales are studying ways of using the code. The World Health Organization has taken an interest in it and has circulated copies to member countries.

Seventh Revision of the International Classification

The views of the Committee were obtained on the final list of revision proposals prepared by the World Health Organization for submission to the International Conference for the Seventh Revision convened in Paris in February, 1955.

The Committee considered the effect of the rules of classification whereby deaths were assigned to an infectious disease, stated by the certifying practitioner as the underlying cause, however many years had elapsed since the infection occurred. The Committee thought that this was undesirable, although the General Register Office practice of also showing late deaths separately partly met the difficulty. The Committee thought the problem should be raised at the Revision Conference. The Revision Conference recommended a change in the rule.

Classification of Heat Illnesses

Minor modifications of the International Statistical Classification suggested by the joint Sub-committee with the Medical Research Council's Climatic Physiology Committee were adopted at the International Conference for the Seventh Revision.

Adaptation of the International Classification for use as a Diagnostic Index

The International Conference for the Seventh Revision accepted the suggestion that a note on adapting the Classification for use as a diagnostic index should be incorporated in the new edition of the Classification.

Measurement of Morbidity

The report of the Statistics Sub-committee on the Measurement of Morbidity has been published. It was brought to the attention of delegates to the World Health Organization Revision Conference and found general approval. The Sub-committee have deferred further consideration of the subject until sufficient time had elapsed to permit a judgment as to how far the definitions and standards adopted in the Report had stood the test of practical application and had met the needs of research workers.

Medical Certification of Cause of Death

The Committee has advised on an investigation into the accuracy of diagnosis on medical certificates of cause of death. With the co-operation of a number of hospitals, information has been obtained about the clinical and post-mortem diagnoses of causes of death. The nature and importance of the differences between the two sets of diagnoses are being studied*.

The Committee has also advised on various matters relating to the information about the cause of death in the case of deaths which are certified by coroners or involved post-mortem examination by coroners' pathologists.

Cancer Registration

The Cancer Sub-committee has considered problems connected with the staging of tumours and has advised on the introduction of a scheme for collecting additional information about registered cases of cancer of the breast. It is hoped that the enquiry will provide a basis for determining what significant clinical and pathological manifestations should be used in staging cancer of the breast. A large number of hospitals are co-operating in this enquiry.

Other Morbidity Enquiries

The expected extension of the *Hospital In-patient Enquiry* has taken place and almost all the eligible hospitals, with the exception of those in the Birmingham Hospital Region, are co-operating.

Plans for a more extensive enquiry for deriving statistics from *General Practitioners' Records*, in collaboration with the College of General Practitioners, were completed and the enquiry was held from May 1955 to April 1956. The records are now being analysed.†

Presentation of Medical Statistics

The advice of the Committee was obtained on a number of other points relating to the form or presentation of morbidity and mortality statistics.

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* Details of the investigation and its results are given in the Certification of Cause of Death chapter on pages 182–192.

† First volume now published : *Studies on Medical and Population Subjects No. 14—Morbidity Statistics from General Practice. Volume I, General.* H.M.S.O., price 15*s.* 6*d.* net.

Members of the Committee

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Professor W. Melville Arnott, M.D., F.R.C.P.
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Sir Allen Daley, M.D., F.R.C.P., D.P.H.
Miss Joan M. Faulkner, M.B., D.P.H., (from 5th August, 1955).
Sir Ernest Finch, M.D., M.S., F.R.C.S.
F. H. K. Green, C.B.E., M.D., F.R.C.P., (until 4th August, 1955).
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C. F. Harris, M.D., F.R.C.P.
Professor A. Bradford Hill, C.B.E., D.Sc., Ph.D., F.R.S.
Surgeon Commander J. M. Holford, O.B.E., M.B., F.R.C.P., R.N., (from 18th February, 1955).
T. Lloyd Hughes, M.D., D.P.H.
A. E. Joll.
Professor A. J. Lewis, M.D., F.R.C.P.
W. P. D. Logan, M.D., Ph.D., D.P.H.
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F. F. Main, M.B., F.R.C.P.(Ed.), D.P.H., (from 22nd November, 1956).
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D. Thomson, M.D., D.P.H.
Professor R. E. Tunbridge, O.B.E., M.D., F.R.C.P.
W. S. Walton, G.M., M.D., D.P.H., (from 17th January, 1956).

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GREAT BRITAIN AND IRELAND

Vital Statistics

Table A1 of Part II shows the populations, by sex, for Great Britain and Ireland as a whole and the constituent countries for each census since 1801 and mid-year estimates from 1921.

Home population estimates (that is of people actually in the country), marriage, live birth, death and infant mortality rates for the current year are shown in Table W of Part II. They are repeated with comparative rates for earlier years in Table CXXIV.

Table CXXIV.—Vital statistics : 1938, 1946–1950 and 1952 to 1956, Great Britain and Ireland

	Great Britain and Ireland	England	Wales (*including Monmouthshire*)	Scotland	Northern Ireland	Irish Republic[1]
Estimated mid-year home population (in thousands)						
1956 Males	26,123	20,238	1,279	2,463	681	1,462
1956 Females	27,981	21,821	1,329	2,682	716	1,433
1956 Persons	54,104	42,059	2,608	5,145	1,397	2,895
Marriages[2]						
1956	423,035	332,643	20,301	43,971	9,359	16,761
Persons marrying per 1,000 living						
1938	16·8	17·6	16·2	15·5	13·4	10·1
1946–1950	17·1	17·7	17·4	16·9	13·9	11·0
1952	15·6	15·9	15·9	16·1	13·5	10·8
1953	15·3	15·7	15·4	16·0	13·6	10·8
1954	15·2	15·5	15·1	16·4	13·2	10·8
1955	15·8	16·1	16·3	16·8	13·6	11·3
1956	15·6	15·8	15·6	17·1	13·4	11·6
Live Births[2][3]						
1956	885,877	659,420	40,915	95,313	29,489	60,740
Per 1,000 living						
1938	15·7	15·1	15·3	17·7	20·0	19·4
1946–1950	18·5	18·0	17·9	19·8	22·0	22·2
1952	16·1	15·3	16·0	17·7	20·9	21·9
1953	16·2	15·5	16·0	17·8	20·9	21·2
1954	15·9	15·2	15·5	18·0	20·8	21·3
1955	15·8	15·0	14·9	18·0	20·8	21·1
1956	16·4	15·7	15·7	18·5	21·1	21·0

(1) The Irish Republic rates are based on *home* population throughout.

(2) The marriage and live birth rates for 1938 and 1952 onwards are based on *home* populations. For the 1946–50 aggregate they are based on *total* populations.

(3) England and Wales: occurrences. Remainder: registrations.

Table CXXIV—*continued.*

	Great Britain and Ireland	England	Wales (*including Monmouthshire*)	Scotland	Northern Ireland	Irish Republic[1]
Deaths[4]						
1956	631,891	488,893	32,438	61,792	14,858	33,910
Per 1,000 living						
1931–1938[5] ..	12·4	12·0	12·9	13·3	14·4	14·2
1946–1950	11·9	11·7	12·6	12·5	11·9	13·3
1952	11·4	11·3	12·0	12·0	10·8	11·9
1953	11·4	11·4	12·1	11·5	10·7	11·7
1954	11·4	11·3	12·6	12·0	10·9	12·1
1955	11·7	11·6	13·0	12·0	11·1	12·6
1956	11·7	11·6	12·4	12·0	10·6	11·7
Infant Mortality (deaths of infants under one year of age[6])						
1956	22,292	15,380	1,174	2,726	850	2,162
Per 1,000 live births						
1938	55	53	57	70	75	67
1946–1950	39	36	42	47	48	57
1952	30	27	33	35	39	41
1953	28	27	31	31	38	39
1954	27	25	32	31	33	38
1955	27	25	31	30	32	37
1956	25	23	29	29	29	36

(4) The death rates are based on total deaths and *home* populations except for the years 1946–49 in the 1946–50 aggregate where they are based on civilian deaths and *civilian* populations.

(5) The aggregate 1931–38 is given since crude death rates in 1938 were rather lower than in adjacent years.

(6) England and Wales: deaths per 1,000 related live births. Remainder: deaths per 1,000 births registered in the year.

Population.—The home population of Great Britain and Ireland at mid-1956 was estimated at 54,104,000 : an increase of 1·7 per cent on the 1951 Census figures. The increase in England was 2·2 per cent ; in Wales 0·35 per cent ; in Scotland 1·0 per cent ; and in Northern Ireland 1·9 per cent. The population of the Irish Republic has now fallen below the 1951 Census figure by 2·2 per cent.

Marriage rates.—The marriage rate in Great Britain and Ireland declined from the 1955 figure of 15·8 to 15·6. The marriage rates increased in Scotland and the Irish Republic but in all the other countries the rates declined from the relatively high level of 1955.

Birth rates.—The live birth rate for Great Britain and Ireland increased from the 1955 figure of 15·8 to 16·4. In all the countries this rate declined between 1947 and 1952, thereafter varying little. The rates for 1956, however, show a marked increase in all the countries except the Irish Republic where there has been a slight decline.

Death rates.—For 1956 the death rate in Great Britain and Ireland was unchanged at the 1955 figure of 11·7. The rates were lower in Wales, Northern Ireland and the Irish Republic, that for Northern Ireland being the lowest ever recorded. In England and Scotland the rates were unchanged.

Infant mortality rates.—The death rates of infants under one year of age per thousand live births were lower in 1956 than ever before. The combined rate per 1,000 for the whole of Great Britain and Ireland was 25 ; the individual rates were 23 in England, 29 in Wales, Scotland and Northern Ireland, and 36 in the Irish Republic.

Causes of Death.—Table CXXV gives the numbers of deaths and death rates classified by sex and a short list of causes for Great Britain and Ireland and the constituent countries.

There are large differences between the recorded rates for senility and unknown causes in Ireland, and those for the countries of Great Britain, which probably reflect differences in diagnostic practice. Comparison for other specific causes is affected by these differences, which may partially account for the lower death rates from cancer of the lung and from vascular lesions of the central nervous system which are recorded in Ireland, particularly in the Irish Republic. A similar feature may affect a comparison between the rates for arteriosclerotic heart diseases and for degenerative heart disease in the Irish Republic where the death rates are low for the former and high for the latter.

There are variations among countries in the death rates from tuberculosis of the respiratory system. The rates for males are high in the Irish Republic, Wales, and Scotland, and low in Northern Ireland. For females the death rate is low in England, and high in the Irish Republic. For other forms of tuberculosis the Irish Republic has relatively high rates for both males and females.

Death rates from pneumonia are higher in England than in the other countries; for bronchitis both England and Wales have comparatively high death rates.

Mortality from motor accidents shows little variation between countries, but Scotland has higher death rates from other types of accident than the other countries. The death rates from suicide and self inflicted injury are much lower in Ireland than in Great Britain.

Table CXXV.—Deaths and death rates by cause and sex, 1956, Great Britain and Ireland

Classified in accordance with the Abbreviated (B) List of the International Statistical Classification (Sixth Revision)

Cause of Death (and International Classification Numbers)	Sex	Deaths						Death rates per million living					
		Great Britain and Ireland	England	Wales	Scotland	Northern Ireland	Irish Republic	Great Britain and Ireland	England	Wales	Scotland	Northern Ireland	Irish Republic
All Causes	M.	**325,467**	**250,356**	**17,548**	**31,651**	**7,643**	**18,269**	**12,459**	**12,371**	**13,720**	**12,852**	**11,225**	**12,488**
	F.	**306,424**	**238,537**	**14,890**	**30,141**	**7,215**	**15,641**	**10,951**	**10,932**	**11,204**	**11,239**	**10,081**	**10,897**
Tuberculosis of respiratory system (001–008)	M.	4,460	3,254	280	478	86	362	171	161	219	194	126	247
	F.	1,817	1,203	116	237	61	200	65	55	87	88	85	139
Tuberculosis, other forms (010–019)	M.	396	254	16	47	7	72	15	13	*13*	19	*10*	49
	F.	356	235	17	39	10	55	13	11	*13*	15	*14*	38
Syphilis and its sequelae (020–029)	M.	1,033	869	53	71	28	12	40	43	41	29	41	*8*
	F.	488	435	17	17	18	1	17	20	*13*	*6*	*25*	*1*
Typhoid fever (040)	M.	2	—	—	1	—	1	*0*	—	—	*0*	—	*1*
	F.	5	2	—	1	—	2	*0*	*0*	—	*0*	—	*1*
Cholera (043)	M.	—	—	—	—	—	—	—	—	—	—	—	—
	F.	—	—	—	—	—	—	—	—	—	—	—	—
Dysentery, all forms (045–048)	M.	19	14	3	1	1	—	*1*	*1*	*2*	*0*	*1*	—
	F.	19	15	1	2	1	—	*1*	*1*	*1*	*1*	*1*	—
Scarlet fever and streptococcal sore throat (050,051)	M.	26	22	1	—	—	3	1	1	*1*	—	—	*2*
	F.	23	18	2	2	—	1	1	*1*	*2*	*1*	—	*1*
Diphtheria (055)	M.	11	5	—	1	—	5	*0*	*0*	—	*0*	—	*3*
	F.	14	3	—	1	—	10	*1*	*0*	—	*0*	—	*7*
Whooping cough (056)	M.	82	40	2	7	8	25	3	2	*2*	*3*	*12*	17
	F.	79	48	5	7	5	14	3	2	*4*	*3*	*7*	*10*
Meningococcal infections (057)	M.	144	96	13	17	6	12	6	5	*10*	*7*	*9*	*8*
	F.	102	74	6	10	4	8	4	3	*5*	*4*	*6*	*6*
Plague (058)	M.	—	—	—	—	—	—	—	—	—	—	—	—
	F.	—	—	—	—	—	—	—	—	—	—	—	—
Acute poliomyelitis (080)	M.	89	64	4	8	2	11	3	3	*3*	*3*	*3*	*8*
	F.	59	46	—	1	3	9	2	2	—	*0*	*4*	*6*
Smallpox (084)	M.	—	—	—	—	—	—	—	—	—	—	—	—
	F.	—	—	—	—	—	—	—	—	—	—	—	—
Measles (085)	M.	27	11	4	4	1	7	1	*1*	*3*	*2*	*1*	*5*
	F.	34	15	—	6	—	13	1	*1*	—	*2*	—	*9*

Table CXXV—*continued.*

Cause of Death (and International Classification Numbers)	Sex	Deaths						Death rates per million living					
		Great Britain and Ireland	England	Wales	Scotland	Northern Ireland	Irish Republic	Great Britain and Ireland	England	Wales	Scotland	Northern Ireland	Irish Republic
Typhus and other rickettsial diseases (100–108)	M.	1	—	—	1	—	—	*0*	—	—	*0*	—	—
	F.	—	—	—	—	—	—	—	—	—	—	—	—
Malaria (110–117)	M.	4	3	—	1	—	—	*0*	*0*	—	*0*	—	—
	F.	1	1	—	—	—	—	*0*	*0*	—	—	—	—
All other diseases classified as infective and parasitic (120–138)	M.	574	469	31	3	28	43	22	23	24	*1*	41	29
	F.	572	481	27	6	20	38	20	22	20	*2*	28	26
Malignant neoplasms (140–205)	M.	**58,174**	**46,002**	**2,933**	**5,591**	**1,157**	**2,491**	**2,227**	**2,273**	**2,293**	**2,270**	**1,699**	**1,703**
	F.	**52,141**	**41,205**	**2,570**	**5,163**	**1,124**	**2,079**	**1,863**	**1,888**	**1,934**	**1,925**	**1,570**	**1,448**
Malignant neoplasm of stomach (151)	M.	9,417	7,116	631	912	235	523	360	352	493	370	345	358
	F.	7,637	5,692	514	845	216	370	273	261	387	315	302	258
Malignant neoplasm of trachea, bronchus and lung (162,163)	M.	17,934	14,841	774	1,677	260	382	687	733	605	681	382	261
	F.	3,037	2,488	83	306	72	88	109	114	62	114	101	61
Malignant neoplasm of breast (170)	M.	82	65	4	7	2	4	3	3	*3*	*3*	*3*	*3*
	F.	10,029	8,104	476	896	170	383	358	371	358	334	238	267
Malignant neoplasm of uterus (171–174)	F.	4,673	3,707	239	487	75	165	167	170	180	182	105	115
Leukaemia and aleukaemia (204)	M.	1,469	1,160	69	130	37	73	56	57	54	53	54	50
	F.	1,263	1,044	42	111	16	50	45	48	32	41	*22*	35
Other malignant and lymphatic neoplasms (remainder of 140–205)	M.	29,272	22,820	1,455	2,865	623	1,509	1,121	1,128	1,138	1,163	915	1,032
	F.	25,502	20,170	1,216	2,518	575	1,023	911	924	915	939	803	713
Benign and unspecified neoplasms (210–239)	M.	846	693	47	55	8	43	32	34	37	22	*12*	29
	F.	1,091	864	40	91	20	76	39	40	30	34	28	53
Diabetes mellitus (260)	M.	1,368	1,039	69	129	38	93	52	51	54	52	56	64
	F.	2,643	1,978	156	344	51	114	94	91	117	128	71	79
Anaemias (290–293)	M.	770	522	45	88	23	92	29	26	35	36	34	63
	F.	1,489	1,076	90	157	37	129	53	49	68	59	52	90
Vascular lesions affecting central nervous system (330–334)	M.	37,652	28,952	2,082	4,076	910	1,632	1,441	1,431	1,628	1,655	1,336	1,116
	F.	52,286	40,805	2,648	5,604	1,216	2,013	1,869	1,870	1,992	2,090	1,699	1,402
Nonmeningococcal meningitis (340)	M.	273	202	14	27	3	27	10	10	*11*	11	*4*	18
	F.	214	162	9	18	5	20	8	7	*7*	*7*	*7*	14

Table CXXV—*continued.*

Cause of Death (and International Classification Numbers)	Sex	Deaths						Death rates per million living					
		Great Britain and Ireland	England	Wales	Scotland	Northern Ireland	Irish Republic	Great Britain and Ireland	England	Wales	Scotland	Northern Ireland	Irish Republic
Rheumatic fever (400–402)	M.	172	95	7	29	20	21	7	5	*5*	12	29	14
	F.	166	91	15	19	14	27	6	4	*11*	*7*	*20*	19
Chronic rheumatic heart disease (410–416)	M.	3,625	2,812	237	292	83	201	139	139	185	119	122	137
	F.	6,012	4,802	359	527	119	205	215	220	270	197	166	143
Arteriosclerotic heart diseases including coronary disease (420)	M.	56,236	43,901	3,020	5,819	1,441	2,055	2,153	2,169	2,361	2,363	2,116	1,405
	F.	33,378	26,340	1,529	3,611	810	1,088	1,193	1,207	1,150	1,346	1,132	758
Degenerative heart disease (421, 422)	M.	34,505	25,262	1,821	3,867	808	2,747	1,321	1,248	1,424	1,570	1,187	1,878
	F.	46,807	35,834	2,232	5,145	954	2,642	1,673	1,642	1,679	1,918	1,333	1,841
Other diseases of heart (430–434)	M.	5,464	4,076	196	292	260	640	209	201	153	119	382	437
	F.	5,983	4,544	216	316	273	634	214	208	163	118	381	442
Hypertension with heart disease (440–443)	M.	6,685	5,254	385	545	202	299	256	260	301	221	297	204
	F.	8,421	6,625	426	737	286	347	301	304	321	275	400	242
Hypertension without mention of heart (444–447)	M.	4,344	3,369	290	340	76	269	166	166	227	138	112	184
	F.	4,756	3,748	301	369	79	259	170	172	226	138	110	180
Other circulatory diseases (450–468)	M.	8,843	6,882	490	844	113	514	339	340	383	343	166	351
	F.	10,254	8,280	468	951	130	425	366	379	352	355	182	296
Influenza (480–483)	M.	1,649	1,209	63	106	66	205	63	60	49	43	97	140
	F.	1,800	1,293	61	156	94	196	64	59	46	58	131	137
Pneumonia (490–493)	M.	12,962	10,621	523	1,039	278	501	496	525	409	422	408	342
	F.	12,907	10,856	371	988	232	460	461	498	279	368	324	320
Bronchitis (500–502)	M.	22,198	18,582	1,270	1,423	341	582	850	918	993	578	501	398
	F.	11,019	9,301	517	654	191	356	394	426	389	244	267	248
Other diseases of respiratory system (470–475, 510–527)	M.	4,205	2,991	473	469	76	196	161	148	370	190	112	134
	F.	1,974	1,558	90	125	43	158	71	71	68	47	60	110
Ulcer of stomach and duodenum (540, 541)	M.	4,465	3,574	204	433	71	183	171	177	159	176	104	125
	F.	1,828	1,502	62	175	33	56	65	69	47	65	46	39
Appendicitis (550–553)	M.	613	496	26	63	5	23	23	25	20	26	*7*	16
	F.	379	305	26	28	6	14	14	14	20	10	*8*	*10*
Intestinal obstruction and hernia (560, 561, 570)	M.	1,791	1,401	80	200	36	74	69	69	63	81	53	51
	F.	1,910	1,490	95	203	37	85	68	68	71	76	52	59

Table CXXV—*continued.*

Cause of Death (and International Classification Numbers)	Sex	Deaths						Death rates per million living					
		Great Britain and Ireland	England	Wales	Scotland	Northern Ireland	Irish Republic	Great Britain and Ireland	England	Wales	Scotland	Northern Ireland	Irish Republic
Gastritis, enteritis and diarrhoea except diarrhoea of newborn (543, 571, 572)	M.	1,153	842	41	144	26	100	44	42	32	58	38	68
	F.	1,516	1,171	57	168	46	74	54	54	43	63	64	52
Cirrhosis of liver (581)	M.	817	586	32	128	25	46	31	29	25	52	37	31
	F.	654	505	30	85	11	23	23	23	23	32	*15*	16
Nephritis and nephrosis (590–594)	M.	3,265	2,431	220	264	71	279	125	120	172	107	104	191
	F.	2,749	2,001	194	264	74	216	98	92	146	98	103	150
Hyperplasia of prostate (610) ..	M.	4,621	3,490	362	421	118	230	177	172	283	171	173	157
Complications of pregnancy, childbirth and puerperium (640–689)	F.	519	365	34	51	17	52	19	17	26	19	*24*	36
Congenital malformations (750–759)	M.	3,140	2,257	185	345	135	218	120	112	145	140	198	149
	F.	2,782	1,977	156	317	121	211	99	91	117	118	169	147
Birth injuries, postnatal asphyxia and atelectasis (760–762) ..	M.	3,492	2,462	217	446	124	243	134	122	170	181	182	166
	F.	2,221	1,544	148	281	92	156	79	71	111	105	129	109
Diarrhoea of newborn (764) ..	M.	76	26	1	11	5	33	3	1	*1*	*4*	*7*	23
	F.	52	19	2	4	—	27	2	*1*	*2*	*1*	—	19
Other infections of newborn (763, 765–768)	M.	709	508	24	80	17	80	27	25	19	32	*25*	55
	F.	463	318	18	49	22	56	17	15	*14*	18	31	39
Other diseases of early infancy and immaturity unqualified (769–776)	M.	3,149	2,213	135	356	97	348	121	109	106	145	142	238
	F.	2,300	1,636	102	245	86	231	82	75	77	91	120	161
Senility without mention of psychosis, ill-defined and unknown causes (790–795)	M.	5,118	2,880	328	362	251	1,297	196	142	256	147	369	887
	F.	7,877	5,051	486	516	364	1,460	282	231	366	192	509	1,017
All other diseases (Remainder of 001–795)	M.	10,632	7,438	516	1,148	291	1,239	407	368	403	466	427	848
	F.	13,954	10,266	762	1,499	327	1,100	499	470	573	559	457	766
Motor vehicle accidents (E810–E835)	M.	4,481	3,515	224	431	107	204	172	174	175	175	157	139
	F.	1,505	1,235	62	127	29	52	54	57	47	47	41	36
All other accidents (E800–E802, E840–E962)	M.	7,406	5,451	414	942	159	440	284	269	324	383	234	301
	F.	6,475	5,126	278	707	126	238	231	235	209	264	176	166
Suicide and self-inflicted injury (E963, E970–E979)	M.	3,551	3,038	160	255	33	65	136	150	125	104	48	44
	F.	2,264	2,004	80	148	21	11	81	92	60	55	29	*8*
Homicide and operations of war (E964, E965, E980–E999) ..	M.	215	183	7	17	2	6	8	9	*5*	*7*	*3*	*4*
	F.	111	84	9	15	3	—	4	4	*7*	*6*	*4*	—

INTERNATIONAL CO-OPERATION IN POPULATION AND HEALTH STATISTICS

United Nations

Population Commission

This Commission, which in common with many others meets in alternate years, did not have a session in 1956. The corresponding volume of this Review for 1955 includes an account (pages 227–8) of the Commission's eighth session.

Statistical Commission

The Statistical Commission met in New York from the 16th April to the 2nd May, 1956, for its ninth session, at which the United Kingdom was represented by Mr. H. Campion, Director of the Central Statistical Office.

The session opened with the usual review of developments in the statistical field during the previous two years. One outcome of this was the placing of emphasis on improvement in the quality of statistics as an important objective for international organisations and member countries. Another was the Commission's view that regional meetings had proved to be a very valuable means of encouraging the adoption of general standards and of getting, within those standards, agreement on specific adjustments required to meet the needs of countries broadly similar in character. The Commission was also faced with the problem of advising on how to overcome the difficulty of recruiting consultants needed *ad hoc* for technical assistance projects, particularly those of short duration. It recommended that the possibility of establishing a field service of statisticians for work in the regions might be considered and this suggestion was later accepted by the Economic and Social Council (see below).

Population censuses were the subject of the only draft Resolution proposed in the Commission's report[1] for adoption by the Economic and Social Council. The following is the text of the Resolution[3], which the Council adopted unanimously :

The Economic and Social Council,

Recognizing the importance of population censuses as a means of obtaining essential information for programmes of economic and social development,

Noting with satisfaction the progress made throughout the world during the period around 1950 in carrying out enumerations of population, and the present interest shown by countries in various regional meetings in making early preparations for their next censuses,

Having regard to the recommendations of the Statistical Commission on this subject at its ninth session[2] and to the recommendation of the Population Commission at its eighth session that countries be encouraged to undertake censuses and to report the basic information obtained from census enumerations[4],

1. *Recommends* that the Governments of States Members of the United Nations conduct a population census during the ten-year period 1956 to 1965 and preferably around 1960 ;

2. *Recommends* that such censuses, which are primarily designed to serve national needs, should take into account as far as possible the wishes expressed in international and regional census recommendations,

When discussing *population censuses* the Commission noted that during the decade 1945–54 more than 150 countries or areas, with a total population exceeding 2,000 million, had been enumerated. In the aggregate these censuses, taken in all parts of the world, represented a considerable advance, the statistics derived from them surpassing, both in areal coverage and degree of comparability, what had been achieved before. The Commission regarded the progress that had been made as a significant pointer to the positive recognition by governments of the value of demographic statistics to administration and of the need to take account of them when planning improvements in social and economic conditions. Progress in the elaboration of a draft set of *General Principles for a Population Census* was reported to the Commission ; it was noted that the draft was being considered at a series of regional meetings, after which it would be referred to the Population and Statistical Commissions again. The aim was to have these *General Principles* settled in time for the guidance of member countries proposing to take a census in or around 1960.

In the matter of *vital statistics* the Commission noted with interest that attention was being given to means of assisting countries to make the best use of fragmentary and inadequate data and that experimental work was being done on methods of collecting vital statistics in under-developed countries, especially in those lacking an efficient *registration system.* In this latter connection the Commission considered several possible approaches, including the use of sampling techniques. It was emphasised, however, that sampling surveys were not to be considered as alternatives to registration methods, but as a complementary tool useful for collecting data needed for economic and social analysis.

The Commission indicated its continued interest in the critical evaluation of *population registers*—already maintained by some countries and proposed in others—and suggested that the Secretariat of United Nations could gather available information about them, with particular reference to the quality of data obtained from such registers.

In continuing a review of *housing statistics* begun at its previous session the Commission considered the results of a study of definitions and procedures used in housing censuses during the decade 1946–54[5]. In the Commission's view the fact that both the terminology and the basic concepts used in housing statistics differed widely from country to country, even within the same region, made further study both imperative and urgent.

A note from the International Labour Office gave the Commission a report on the *International Standard Classification of Occupations* which was put before the Ninth International Conference of Labour Statisticians in 1957.

At the request of the Population Commission the Secretary-General drew the Commission's attention to some of the matters arising from reports on the *World Population Conference*[6] and to the reports of the committee of experts appointed to advise on gaps in existing knowledge of the *relationships between population trends and economic and social factors*[7].

Economic and Social Council

The Council held two sessions during 1956 : the twenty-first at New York from the 17th April to 4th May and the twenty-second in Geneva from the 9th July to 9th August (resumed 17th–21st December). In an opening speech at the first of these the Under-Secretary for Economic and Social Affairs took the view that many countries were hampered in their economic and social development by the lack of adequate statistics, particularly those necessary to enable a comprehensive view to be taken of the economic, social and demographic

factors affecting their development. Although much help had been given, he thought that in this connection technical assistance was perhaps too thinly spread[8]. The caution implicit in his words was very relevant to the policy advocated by delegations of under-developed countries which pressed for more to be done by way of fostering the process of their *industrialisation. Growth of world population,* which is estimated[10] to have increased by 42·6 million between 1951 and 1955, was one of the considerations that led to a Resolution[9] on studies of new sources of energy as a factor in economic development.

At the later session the Council considered the report on the ninth session of the Statistical Commission. While unanimously adopting the draft resolution on population censuses (see text above)[3] recommended in the Commission's report, the Council was not at one when the proposal to provide for a statistical field service came up for discussion, although a Resolution[11] embodying most of the Commission's suggestions was adopted. It took the form of a recommendation to the General Assembly " to approve, in the regular budget of the United Nations for the year 1957, the allocation of the funds necessary to increase the number of experts of the Statistical Office of the United Nations in order that statistical assistance be strengthened and systematized and be available, at the request of Governments of Member States " for various purposes specified in the Resolution.

Conference of European Statisticians

At the fourth plenary session of the Conference, held in Geneva from the 25th to the 30th June, 1956, the United Kingdom delegation was led by Mr. H. Campion, who was also in the Chair. Among the reports before the Conference was one[12] by an Expert Group on classification of persons by status which had met in the previous February and of which Mr. B. Benjamin of the General Register Office was a member. The Conference took note that this report would be considered by the Working Group on Censuses of Population and it invited France, Hungary and Yugoslavia to provide *rapporteurs* to prepare proposals for a socio-economic classification which the Working Group could consider at the same time.

The Conference decided[13] to extend the functions of the Working Group on Censuses of Population to cover housing censuses, with particular reference to the kind of information recommended for collection, to definitions, and to the relationship of a housing census to a population census. In the matter of definitions the Conference referred proposals made by the ECE Housing Committee's Working Party on Housing and Building Statistics for the consideration of the Working Group.

European Working Group on Censuses of Population and Housing

This Working Group met for the second time from the 19th to the 24th November, 1956, in Geneva. An account of the first meeting will be found on page 229 of the 1955 Commentary Volume. As on the previous occasion the United Kingdom was represented by Mr. B. Benjamin and Mr. W. J. Littlewood of the General Register Office. Mr. Benjamin was re-elected Chairman.

The report on this session[14] is divided into three main parts. The first of these is concerned mainly with the outcome of the Working Group's examination of the first revised edition of draft *General Principles for a Population Census*[15] and of its consideration of the reports of the Expert Group on classification by status[12] and of the *Rapporteurs* on classification by socio-professional groups[16]. The second part presents the results of discussion based on another draft prepared by the Secretariat of United Nations, namely *General Principles for a*

Housing Census[17], which also took account of standard definitions for housing statistics proposed by the Working Party on Housing and Building Statistics of the ECE Housing Committee. The third main subject of discussion was the *use of sampling in censuses of population and housing.*

The time taken by detailed consideration of all the factors that have to be taken into account when proposing principles for guidance in the taking of censuses of population and housing precluded the Working Group from looking in detail at the proposed classification by socio-professional groups which had not been available for distribution before the meeting. (This classification was considered more fully at a later meeting in December, 1957.)

World Health Organization

Executive Board

The report of the Conference for the Seventh Decennial Revision of the International Lists of Diseases and Causes of Death came before the Executive Board at the seventeenth session, held in Geneva from the 17th January to the 2nd February, 1956[18]. After noting with appreciation the work accomplished by the Conference (see page 230 of the 1955 Commentary Volume), the Board transmitted the report to the Ninth World Health Assembly, drawing particular attention to three recommendations of the Conference, namely that : (*a*) WHO Regulations No. 1, i.e. Nomenclature Regulations 1948, be amended with a view to relaxing the obligations imposed by certain articles ; (*b*) the Seventh Revision be applied as from the 1st January 1958 ; and (*c*) the World Health Organization should study various methods of obtaining and presenting information on health conditions in areas where facilities for precise diagnosis are lacking. The Board also noted that arrangements were being made for revising the *Manual of the International Classification of Diseases, Injuries and Causes of Death.*

The Ninth World Health Assembly

The Assembly was held in Geneva from the 8th–25th May, 1956, and Mr. A. E. Joll of the General Register Office was a member of the United Kingdom delegation.

Arising out of the Director-General's report on work done in the previous year, reference was made to the *Latin-American Centre for the Classification of Diseases* set up in Caracas and to the importance of adequate liaison with the WHO Centre in the United Kingdom so as to avoid any lack of uniformity in methods.

The Director-General reported a growing appreciation of the value of modern statistical methods in planning the Organization's field work and in analysing and evaluating its results and that this had increased the work of the statistical services within the Organization.

In the course of discussion on *reports on the world health situation*, the United Kingdom delegation urged the importance of making them factual and objective (not merely the expression of opinions and hopes) ; as such they would be an informative contribution to the general report on the world social situation prepared for the consideration of the Economic and Social Council of United Nations. While, as the Director-General had pointed out, the reports from Member States of the World Health Organization should not be regarded as statistical exercises, a few hard facts on such matters as reduction of infant mortality or the incidence of diseases would be worth a mass of hopes and theories or descriptions of legislative and administrative blueprints.

The Assembly resolved[19] to adopt the Additional Regulations of the 21 May 1956, amending the *Nomenclature Regulations 1948*, together with two annexes : one providing for the changes to the International Lists of Diseases and Causes of Death proposed by the Seventh Revision Conference, the other concerning rules for mortality classification. The Assembly also requested the Director-General to give effect to the revision by issuing new editions of both volumes of the *Manual of the International Statistical Classification of Diseases, Injuries and Causes of Death.*

The Expert Committee on Health Statistics

The Committee's fifth session was held in Geneva from the 10th–14th December 1956. Dr. W. P. D. Logan, General Register Office, was elected *Rapporteur.*

The Committee's business covered a wide range. In the field of *morbidity statistics* the Committee reviewed the extent to which effect had been given to previous recommendations, with particular reference to *sickness surveys, general practitioners' records* and the exchange of information on vital and health statistics between countries. On the last of these the Committee recommended that information about developments in *morbidity statistics* should be made available in greater detail and that the World Health Organization should continue to act as a clearing house for information on the concepts and techniques used in national morbidity studies. The Committee considered the definition of some terms and rates used in morbidity statistics and made a few preliminary recommendations[20].

The Committee, noting that thirty-three *national committees on vital and health statistics* had been established, restated the purposes which these committees or equivalent bodies could usefully fulfil and recommended that regional or inter-regional conferences of such committees should be held periodically.

The Committee's review of the *collection of health statistics in under-developed areas* took account of the report of the *African Seminar on Vital and Health Statistics*[21], of the activities of the *Latin-American Centre for the Classification of Diseases* and of statistical work in the Eastern Mediterranean and American regions. After discussing the types of health statistics needed in countries at different stages of development, the Committee stressed that the quality of statistical material should be a primary concern and that regularity in publication, although always desirable, should not be allowed to impair quality.

The examination of the role of the World Health Organization in the *training of statistical workers* resulted in recommendations on the types of worker needed in areas at different stages of development and on methods of training, including fellowships, training courses and training handbooks.

In the matter of *cancer statistics and registers* the Committee urged that the Organization should : (*a*) expand the publication of statistical studies of different types of cancer ; (*b*) increase the distribution of available information to interested bodies, particularly on statistical methodology applicable to the field ; and (*c*) continue its efforts, in co-operation with the appropriate professional organizations, to improve the classification of tumours. It was recommended that different systems and methods of cancer registration should be kept under constant review so as to ascertain the best organizational structure for this purpose. The Committee recommended subjects which it considered appropriate for inclusion on the agenda paper for the *Sub-Committee on Cancer Statistics* arranged for 1957.

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Design of forms, definition of terms and rates and the use of hospital morbidity records as a measure of morbidity in a community were the subject of the Committee's recommendations on *hospital morbidity statistics.*

Among other matters considered were the kind of indicators which health statistics provide as a component in the measurement of *standards and levels of living*. The Committee's view was that for this special purpose the proportional mortality ratio, i.e., the percentage of deaths at ages 50 years and over to total deaths, be employed as a comprehensive health indicator on an experimental basis until its usefulness can be better judged in the light of experience gathered.

Prevention of Accidents in Childhood

The WHO Regional Office for Europe convened an Advisory Group on the Prevention of Accidents in Childhood from the 4th–8th June, 1956, in Geneva. Dr. W. P. D. Logan of the General Register Officer was a member of the Group and Chairman of its Statistical Sub-Group.

The Advisory Group's report [22], after pointing to the fact that in European countries accidents to children outrank any other source of mortality in children over one year of age, recommended the study of prevention of accidents in childhood as one that should receive high priority in the public health programmes. The Advisory Group emphasised that fact finding is an essential basis for the development of accident prevention measures and that—with suitable grouping, more rapid reporting and the speedier processing of data—mortality statistics, which are available in most countries, provide a useful basis for preventive measures. Morbidity studies are also necessary because significant accident problems masked by low mortality can be revealed by adequate case-finding measures.

WHO Centre for the Classification of Diseases

Under the direction of Dr. W. P. D. Logan, assisted by Mr. H. G. Corbett, the Centre co-operated with the WHO Secretariat in Geneva in the final stages of editing the first volume of the revised *Manual of the International Statistical Classification of Diseases, Injuries and Causes of Death* and in preparing material for the second (Index) volume. The Centre was also engaged in a comparison of cause of death coding assignments carried out jointly with the General Register Office, the Canadian Dominion Bureau of Statistics, and the United States National Office of Vital Statistics. Other activities of the Centre included work on multiple cause analysis.

Fourth Conference of British Commonwealth Statisticians

From the 17th–28th September, 1956, London was again the venue of the Conference of British Commonwealth Statisticians. The first Conference was held here in 1920, the second was convened in Ottawa in 1935 and the third met in Canberra in 1951. For the first time in the history of the Conference invitations, previously reserved to the larger commonwealth countries, were extended to all colonial governments which had statistical departments. Mr. A. E. Joll was a member of the United Kingdom delegation whose leader, Mr. H. Campion, was elected Chairman of the Conference.

Population statistics were among the matters discussed by the Conference and, as the report [23] shows, the emphasis was on various aspects of census taking. Discussion ranged widely on such matters as the respective merits of *de facto* and *de jure* enumerations, the list and kind of questions to be included in a census, alternative methods of getting the Schedules completed (i.e., by the head

of the household or by the enumerator) and the practical problems involved in the use of mark-sensing and similar methods of recording information. The Conference considered the usefulness of pilot censuses, the application of sampling techniques to census taking and the use of the census enumeration to provide a sampling frame for other surveys or enquiries. The Conference agreed that the use of sampling was particularly relevant in under-developed countries where certain data, such as those on employment and unemployment, on income and fertility, were found in practice to be unsuited to a full census and could best be collected by sample surveys made by specially trained staff.

Visitors from Overseas

There were thirty-five visitors to the General Register Office during 1956 and they came from eighteen countries. These were: Australia, Burma, British Honduras, Canada, Ceylon, Egypt, Finland, Italy, Jamaica, Japan, Malaya, Malta, Netherlands, Nigeria, Panama, Union of South Africa, United States of America and Yugoslavia. Twenty-five of the visitors came for training under fellowship schemes administered by United Nations, the World Health Organization and other specialized agencies or in fulfilment of awards granted under the Colombo Plan or similar arrangements.

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THE REGISTRATION SERVICE

Searches and certificates

Table T 1 shows the growth in the registers of births, marriages and deaths since 1866 and the extent to which the registers and indexes have been used in a series of years since then.

The number of searches paid for by the public in 1956 was, at 214,654, slightly lower than in the previous two years ; but the number of searches undertaken for Government departments, mainly to verify ages of applicants for retirement pensions, increased for the first time since 1951. The reason for this increase was the verification of over 60,000 births of certain people who did not enter national insurance until 1948 and who could only qualify for retirement pension ten years later. Apart from this special group, the number of searches for Government departments declined by a further 20,000 cases.

The number of certified copies of entries in the registers issued to the public in 1956, at 295,279, was also the highest since 1951. Table T 2 shows that this increase applied to birth, marriage and adoption certificates, but not death certificates. The proportion of short birth certificates to all birth certificates issued by the General Register Office remained practically the same as in 1955, at 47·0 per cent.

Re-registration of births of legitimated persons

If the parents of a child marry after the child's birth, the marriage will in certain circumstances legitimate the child. In these cases the birth should be re-registered to show the child as a legitimate child of its parents ; but the date when the parents apply for re-registration may be determined more by the need to produce a birth certificate, e.g. for entry to school, than by the date of the marriage which legitimated the child.

Table T 3 shows that the number of births re-registered was fairly constant in the six years 1951–56, but was consistently lower than in any preceding year since provision for re-registration was introduced in 1926. In the first four years after 1926 the number of re-registrations was inflated by the fact that the Legitimacy Act of 1926 affected people whose parents had already married before the Act as well as those whose parents married subsequently. The result was that the number of re-registrations declined from 5,495 in 1927 to 2,968 in 1933. For the six years 1933 to 1938 the numbers remained fairly constant averaging a little below three thousand a year. The numbers jumped to 3,529 in 1939 and 4,354 in 1940 and then reverted to the 1933–38 level for the next four years. As was stated in the Civil Text Volume for 1940–1945, the high figures in 1939 and 1940 were probably connected with the requirements for claiming service allowances. Re-registrations jumped again to 3,741 in 1945, no doubt as a consequence of marriages which had had to be postponed because of war-time circumstances.* Such marriages appear to have continued to affect re-registrations noticeably until 1950, since when the numbers have been fairly stable some 400 below the pre-1939 figure.

* See the Civil Text Volume of the *Statistical Review* for the years 1940–1945, pages 78–83.

Adopted children

The number of entries made in the Adopted Children Register since 1927 (the Adoption of Children Act, 1926 having been the first provision for such a register to be kept) are shown in Table T 4. The numbers increased fairly continuously from under 3,000 in 1927 to nearly 7,000 in 1939 and over 21,000 in 1946, when war-time conditions and service regulations undoubtedly had some influence. The numbers then declined to under 13,000 in 1950. Since then they have varied little from year to year and the figure for 1956 was 13,201. Table T5 shows that of the children concerned in this total 43 per cent were adopted by relatives, the mother and her husband in the great majority of cases.

NATIONAL HEALTH SERVICE CENTRAL REGISTER

During the year 1956, the National Health Service Central Register (which is maintained by the General Register Office on an agency basis) received notifications of 1,500,077 persons who were reported as having registered with doctors for the first time. It was found from the register that 179,410 of these were already on doctors' lists.

The Central Register notified Executive Councils of the names of 993,835 persons for removal from doctors' lists by reason of death (510,732), enlistment (225,489), embarkation (254,499), or becoming long-term patients in mental hospitals (3,115). In addition, 1,321,896 persons were notified as having changed their doctor on removal from the area of one Executive Council to another.

PARLIAMENTARY AND LOCAL GOVERNMENT ELECTORS

Electoral registers

As required by the Electoral Registers Act, 1949, and the Representation of the People Act, 1949, a local register based on a canvass is prepared in the autumn of each year, distinguishing between those who are parliamentary and local government electors by virtue of residence on the qualifying date, and local government electors who on the qualifying date had a non-resident qualification by occupying as owner or tenant any rateable land or premises of not less than £10 rateable value per occupier. There is also a service register for any members of the Armed Forces and other persons employed in the service of the Crown in a post outside the United Kingdom, and for their wives if with them.

A person not of full age on the qualifying date but of full age on the following 15th June is to be included on the register though there is no entitlement to vote in any election before the 2nd October. Such persons are shown separately as " Young Electors " in Table CXXVI ; the 1951 register was the first to be affected in this way.

The qualifying date is 10th October in England and Wales and the registers must be used for elections falling within the twelve months beginning on 16th February of the following year.

Total electorate

The particulars recorded in Tables U and V for 1956 have been taken from statements furnished to the Registrar General by Electoral Registration Officers and Clerks to local authorities and relate to the register which came into force on 16th February, 1956.

Table U refers to parliamentary and Table V to local government electors and elections. From these tables has been extracted the summary in Table CXXVI.

Table CXXVI.—Parliamentary and local government electors, 1952 to 1956, England and Wales

Register (Qualifying date in brackets)	Parliamentary Register				Local Government Register
	Total at qualifying date	Services Register (included in col. 2)	" Young Electors " (not included in cols. 2 and 3)		
			Total	Services (included in col. 4)	
1	2	3	4	5	6
1952 (20th Nov. 1951) ..	30,472,288	272,264	238,150	10,732	30,584,434
1953 (20th Nov. 1952) ..	30,491,691	274,646	225,429	11,145	30,606,472
1954 (20th Nov. 1953) ..	30,525,190	276,156	212,229	15,001	30,640,141
1955 (10th Oct. 1954) ..	30,590,931	285,376	242,907	19,578	30,707,251
1956 (10th Oct. 1955) ..	30,679,509	289,615	248,420	18,259	30,795,617

The number of parliamentary electors registered in England and Wales corresponds almost exactly with the estimated *total* population aged 21 and over excluding aliens resident here and those categories not qualified to vote. This indicates that the discrepancies in different constituencies, due mostly to time lags in adding names to the registers or removing them, largely cancel out when aggregated for England and Wales as a whole. The percentages which the total parliamentary electorate represented of the estimated *total* population in the years 1952 to 1956 were :

1952	1953	1954	1955	1956
69·0	68·8	68·6	68·6	68·4

The proportion of the *total* population included in the local government register was 68·7 per cent in 1956. This is a slightly higher proportion than the parliamentary register mainly because of the local government electors with non-resident qualifications. There are about 116 thousand of these in England and Wales.

Electors in parliamentary constituencies

Table CXXVII shows the distribution of parliamentary constituencies according to whether they are county or borough constituencies and by the number of parliamentary electors as shown in Table U. The county constituencies range in size from Merioneth with 27,083 electors to the Epping division of Essex with 72,355, the average number of electors in a county constituency being 54,448. The borough constituencies range from the Rhondda West division with 35,527 electors to Hornchurch with 80,253 electors the average number of electors in a borough constituency being 57,446. The tendency for borough constituencies to have more electors than county constituencies is demonstrated by the two distributions in Table CXXVII. Among the borough constituencies only 48 (16 per cent) have fewer than 50,000 electors, compared with 71 (29 per cent) of the county constituencies ; on the other hand 55 (18 per cent) of the borough constituencies have 65,000 or more electors, compared with 22 (9 per cent) of the county constituencies.

Table CXXVII.—Total number of electors in parliamentary constituencies, distinguishing county and borough constituencies, England and Wales

Total number of electors at qualifying date (10th October, 1955)	Number of constituencies	
	County	Borough
Under 30,000	1	—
30,000–	1	—
35,000–	5	6
40,000–	21	13
45,000–	43	29
50,000–	56	72
55,000–	61	76
60,000–	38	48
65,000–	17	29
70,000–	5	22
75,000–	—	3
80,000 and over	—	1
Total	**248**	**299**

Local Council Elections

A summary of the local council elections based on the registers of 1954 to 1956 is given in Table CXXVIII, which shows the percentage of councillors returned unopposed and the percentage of electors voting in contested elections by district, for England and Wales and each of the standard regions (modified for the county council elections). It should be noted in connection with Table CXXVIII that the great majority of rural district elections were held in 1955 and also that triennial elections in the metropolitan boroughs occurred in 1956.

The percentage of councillors returned unopposed in England and Wales was lowest in the county boroughs, being in general a little under 20 per cent ; for municipal boroughs, metropolitan boroughs and urban districts the proportion was higher at around 30 per cent, while in rural districts the proportion was more than 70 per cent in all three years under review. The proportion of councillors returned unopposed for county councils in England and Wales is very much nearer to the proportion in rural districts than that in the smaller urban areas. This is not an unexpected result since the county councils are the concern of the electorates of the rural districts and the smaller urban areas, and the county authority being more remote the incidence of non-contested elections should be higher for county councils than the average of the incidences in these two groups of smaller authorities (weighted for the distribution of the county councillors between the two groups).

Among the figures for county boroughs by standard region (nearly all of which are based on fewer than 50 councillors), the proportion of councillors returned unopposed was below average in the North Midland, North Western and Southern regions and higher than average in the Northern and South Western regions of England, and in Wales. For the municipal boroughs, metropolitan boroughs, and urban districts, the London and South Eastern and Eastern regions had lower than average percentages of unopposed councillors, while the Northern region and Wales had higher than average percentages. The pattern for rural districts, where there is less variation between the regions, showed the London and South Eastern and East and West Ridings regions to have lower than average percentages and the North Western region and Wales to have higher than average percentages.

The second section of Table CXXVIII showing the percentage of electors voting in contested elections indicates considerably less variation between types of area than there was for the percentages of councillors returned unopposed. The proportion voting in contested county council elections in England and Wales (36·5 per cent) was lower than for any other type of area, while the highest percentage was that in rural districts in 1955 (48·2 per cent), the difference between these extremes being 11·7 compared with a range of 63·3 for the percentage of councillors returned unopposed. There was a tendency for rural districts to have a slightly higher percentage than boroughs and urban districts, which in turn had a slightly higher percentage than county boroughs. It is of interest that rural districts have both the highest incidence of uncontested elections and the highest proportion voting in contested elections, i.e. in the less frequent occasions when a choice is offered, there is greater amount of interest than elsewhere. Perhaps the latter is a condition for the former.

Among the county boroughs the proportion of electors voting was a little higher than average in the Southern and South Western regions of England, and in Wales, and lower than average in the London and South Eastern, Midland, Northern and East and West Ridings regions. The boroughs and

Table CXXVIII.—Proportion of councillors unopposed and electors voting in local government elections 1954–56, England and Wales

District	Year	Standard Regions										England and Wales
		Northern	East and West Ridings	North Midland	Eastern	London and South Eastern	Southern	South Western	Wales	Midland	North Western	
		Percentage of councillors returned unopposed(2)										
Counties(1)	1955	71·2	62·2	65·7	48·8	20·3	69·4	73·8	81·1	62·3	47·6	60·7
County Boroughs	1954	29·9	12·4	12·0	22·8	18·0	5·8	28·0	32·7	23·3	10·2	16·8
	1955	42·0	16·8	4·8	18·5	22·0	17·5	33·3	29·8	16·1	9·9	18·5
	1956	43·6	18·8	12·8	25·0	23·3	17·5	27·0	45·3	8·2	13·9	20·1
Municipal and Metropolitan Boroughs(3), Urban Districts ..	1954	44·0	37·2	32·7	11·7	17·0	23·6	40·2	51·5	29·7	35·0	30·3
	1955	50·4	41·8	26·5	22·4	14·5	27·4	34·9	42·0	22·2	32·9	31·5
	1956	59·2	38·9	42·6	17·7	10·9	32·7	38·0	59·0	28·2	37·2	27·6
Rural Districts	1954	—	64·7	83·3	74·0	61·0	77·0	80·0	90·0	79·2	78·4	75·1
	1955	73·0	69·7	75·9	72·8	69·6	71·8	74·9	67·4	70·0	80·0	72·7
	1956	—	68·9	80·7	82·3	67·0	83·2	77·6	96·9	83·8	92·0	80·1
		Percentage of electors voting in contested elections(2)										
Counties(1)	1955	41·2	35·5	40·5	39·5	33·9	36·4	35·4	54·7	35·0	38·3	36·5
County Boroughs	1954	41·7	41·3	43·3	43·1	37·3	47·6	47·8	46·4	39·0	44·8	42·8
	1955	41·1	42·9	45·6	46·1	35·7	49·7	48·3	47·9	41·7	44·7	43·8
	1956	35·1	35·4	40·0	39·2	32·2	41·8	42·5	41·1	35·7	38·9	37·6
Municipal and Metropolitan Boroughs(3), Urban Districts ..	1954	46·3	51·8	46·9	45·3	42·0	45·3	46·2	54·8	43·4	53·1	45·7
	1955	47·4	51·7	46·0	45·0	40·5	45·5	46·8	57·6	44·3	50·0	45·0
	1956	38·8	48·9	43·1	41·8	35·4	42·4	41·7	49·3	40·3	47·0	39·4
Rural Districts	1954	—	54·6	53·2	48·3	43·7	46·9	45·7	62·5	42·7	49·7	47·1
	1955	49·5	42·8	46·1	44·4	45·5	37·7	45·1	65·4	50·0	48·9	48·2
	1956	—	42·8	43·9	37·2	40·0	42·2	38·3	92·3	42·6	54·0	41·3

(1) For the counties the standard regions are modified :—(*a*) All Derbyshire included in North Midland region.
(*b*) All Hertfordshire and Essex included in the Eastern region.

(2) Percentages based on less than 50 councillors or 1,000 electors are underlined.

(3) Elections for Metropolitan Borough Councils were only held in 1956.

urban districts had higher than average percentages voting in Wales and in the East and West Ridings and North Western regions, with lower than average percentages in the London and South Eastern region. In the rural districts, areas with higher than average percentages of electors voting were Wales and the North Western region, while the Southern, London and South Eastern and South Western regions had lower than average percentages.

It will be noticed also that, as in the experience of uncontested elections, the proportion voting in county council elections is not an average between the proportions voting in smaller urban area and rural district elections. It is in fact appreciably lower than both ; a result, perhaps here also, of the relative remoteness of the county authority.

Central Index of Service Voters

During 1956, the Central Index of Service Voters (which is maintained by the General Register Office on an agency basis) received from Electoral Registration Officers 73,059 declarations by persons qualified to be included in the electoral registers as service voters. A further 56,658 declarations were received in respect of persons under the age of 21 years. The Central Index notified Electoral Registration Officers of 27,005 persons who had made declarations before reaching the age of 21 years, but who, during 1956, attained that age. Altogether 100,064 new service voters were added to the electoral registers.

In the same period Electoral Registration Officers were notified of 86,161 names of persons whose declarations ceased to be in force because of death, release from the forces, return from abroad of wives, government servants, etc., and 21,241 declarations by persons under full age were cancelled because they ceased to have a service qualification before attaining full age.

APPENDICES

APPENDIX A

FERTILITY RATES BY BIRTH ORDER, ENGLAND AND WALES, 1952–1956

Live births per woman married once only, irrespective of parity

Note.—Figures are rounded and may not add to totals

1952

Calendar Year of Marriage	Age at marriage: All ages under 45 — Number of previous children						Under 20						20–24						25–29						Calendar Year of Marriage
	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	
1952	·096	·095	·001	·000	·000	·000	·188	·187	·001	·000	—	—	·083	·082	·001	·000	—	—	·068	·066	·001	·000	·000	·000	1952
1951	·311	·296	·015	·001	·000	·000	·402	·373	·029	·001	·000	·000	·307	·294	·012	·000	·000	·000	·296	·283	·012	·001	·000	·000	1951
1950	·242	·157	·078	·006	·000	·000	·297	·149	·138	·010	·000	·000	·242	·164	·073	·005	·000	·000	·233	·166	·060	·006	·001	·000	1950
1949	·205	·085	·096	·021	·002	·000	·264	·072	·145	·044	·003	·001	·210	·093	·096	·019	·002	·000	·186	·091	·079	·014	·002	·001	1949
1948	·186	·054	·091	·033	·007	·001	·231	·041	·113	·062	·013	·002	·191	·060	·093	·031	·006	·001	·185	·063	·090	·026	·005	·002	1948
1947	·159	·033	·076	·036	·011	·003	·195	·025	·086	·057	·022	·005	·166	·036	·080	·036	·011	·003	·167	·038	·083	·034	·009	·003	1947
1946	·137	·020	·059	·037	·015	·006	·181	·018	·066	·058	·029	·011	·150	·023	·067	·039	·015	·006	·122	·022	·056	·030	·010	·004	1946
1945	·115	·014	·046	·033	·015	·007	·164	·015	·056	·051	·028	·014	·119	·015	·050	·033	·014	·007	·107	·015	·046	·030	·011	·005	1945
1944	·096	·009	·034	·029	·014	·010	·123	·008	·037	·038	·023	·018	·105	·010	·040	·031	·014	·009	·085	·009	·031	·025	·012	·008	1944
1943	·082	·007	·026	·025	·013	·010	·123	·008	·033	·037	·024	·021	·089	·008	·030	·027	·014	·010	·061	·007	·020	·018	·009	·006	1943
1942	·074	·006	·022	·022	·012	·011	·107	·006	·026	·033	·021	·021	·082	·007	·027	·025	·013	·011	·057	·006	·019	·017	·008	·007	1942
1941	·061	·005	·017	·018	·011	·011	·104	·005	·022	·030	·022	·025	·067	·005	·020	·020	·011	·010	·045	·004	·014	·013	·007	·006	1941
1940	·051	·003	·013	·015	·010	·010	·088	·003	·016	·023	·020	·026	·058	·004	·016	·018	·010	·011	·036	·003	·011	·010	·006	·006	1940
1939	·042	·002	·008	·012	·009	·012	·084	·002	·011	·020	·018	·033	·049	·003	·011	·014	·010	·012	·028	·002	·007	·008	·005	·006	1939
1938	·034	·001	·006	·008	·007	·012	·071	·001	·006	·014	·016	·034	·041	·002	·007	·010	·008	·014	·021	·001	·005	·005	·004	·005	1938
1937	·028	·001	·004	·006	·006	·011	·073	·001	·006	·012	·015	·040	·035	·001	·005	·008	·007	·013	·014	·001	·002	·003	·003	·004	1937
1936	·024	·001	·003	·005	·004	·011	·061	·001	·004	·009	·012	·035	·031	·001	·004	·006	·006	·014	·010	·001	·002	·003	·002	·004	1936
1935	·020	·001	·002	·004	·004	·010	·056	·001	·003	·008	·010	·034	·026	·001	·003	·005	·005	·012	·007	·000	·001	·002	·001	·003	1935
1934	·015	·000	·001	·002	·003	·008	·049	·000	·003	·007	·008	·031	·020	·000	·002	·004	·004	·010	·004	·000	·001	·001	·001	·002	1934
1933	·012	·000	·001	·002	·002	·007	·041	·000	·001	·004	·006	·029	·015	·000	·001	·002	·003	·009	·002	·000	·000	·000	·000	·001	1933
1932	·011	·000	·001	·001	·002	·007	·040	·000	·001	·004	·005	·030	·013	·000	·001	·002	·002	·008	·001	·000	·000	·000	·000	·001	1932
1931	·008	·000	·000	·001	·001	·005	·033	·000	·001	·002	·004	·025	·008	·000	·000	·001	·001	·005							1931
1930	·006	·000	·000	·001	·001	·004	·028	·000	·001	·002	·003	·021	·006	·000	·000	·001	·001	·004							1930
1929	·004	·000	·000	·000	·000	·003	·019	·000	·000	·001	·002	·015	·004	·000	·000	·000	·000	·003							1929
1928	·002	·000	·000	·000	·000	·002	·014	·000	·000	·001	·001	·011	·002	·000	·000	·000	·000	·001							1928
1927	·001	·000	·000	·000	·000	·001	·011	·000	·000	·001	·001	·009	·001	·000	·000	·000	·000	·001							1927

1952—*continued*

Calendar Year of Marriage	Age at marriage: 30–34 — Number of previous children						35–39						40–44						Calendar Year of Marriage
	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	
1952	·067	·064	·002	·001	·000	·000	·048	·045	·001	·000	·000	·001	·015	·014	·000	·000	·000	·001	1952
1951	·268	·256	·011	·001	·000	·000	·172	·164	·006	·001	·000	·000	·045	·043	·002	·001	·000	·000	1951
1950	·224	·159	·057	·006	·001	·000	·134	·098	·031	·002	·001	·001	·030	·025	·004	·001	·000	·000	1950
1949	·171	·076	·076	·015	·002	·002	·092	·046	·038	·006	·001	·001	·013	·008	·004	·000	·000	·000	1949
1948	·144	·044	·073	·020	·005	·002	·066	·023	·031	·009	·002	·001	·005	·002	·002	·000	·000	—	1948
1947	·109	·026	·053	·024	·005	·002	·041	·013	·018	·008	·002	·000	·004	·001	·002	·001	·000	·000	1947
1946	·092	·016	·040	·024	·009	·004	·028	·006	·012	·007	·002	·001							1946
1945	·065	·009	·025	·019	·008	·004	·012	·003	·005	·002	·001	·000							1945
1944	·044	·007	·014	·013	·006	·005	·008	·001	·002	·003	·002	·001							1944
1943	·030	·004	·009	·009	·005	·004	·005	·001	·001	·001	·001	·001							1943
1942	·023	·003	·006	·007	·004	·003	·002	·001	·000	·000	·000	·000							1942
1941	·013	·002	·004	·004	·002	·002													1941
1940	·011	·001	·003	·002	·002	·002													1940
1939	·006	·000	·001	·002	·001	·002													1939
1938	·004	·000	·001	·001	·000	·001													1938
1937	·002	·000	·000	·000	·000	·000													1937

APPENDIX A—*continued*

Live births per woman married once only, irrespective of parity

1953

Calendar Year of Marriage	Age at marriage: All ages under 45 — Number of previous children						Under 20						20–24						25–29						Calendar Year of Marriage
	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	
1953	·098	·097	·001	·000	·000	·000	·195	·194	·001	—	—	—	·082	·081	·001	·000	·000	·000	·067	·065	·002	·000	·000	·000	1953
1952	·319	·302	·016	·001	·000	·000	·414	·384	·030	·000	·000	—	·314	·300	·013	·001	·000	·000	·297	·283	·012	·001	·000	·000	1952
1951	·234	·153	·075	·005	·000	·000	·299	·154	·137	·008	·000	·000	·233	·160	·068	·004	·000	·000	·221	·158	·057	·005	·001	·000	1951
1950	·220	·095	·102	·021	·002	·000	·276	·080	·152	·041	·003	·000	·224	·105	·100	·018	·002	·000	·211	·102	·091	·015	·002	·000	1950
1949	·193	·058	·094	·033	·007	·001	·246	·045	·121	·065	·014	·001	·198	·066	·096	·030	·006	·001	·182	·062	·089	·024	·005	·001	1949
1948	·168	·037	·080	·036	·012	·003	·216	·029	·094	·062	·025	·006	·177	·043	·085	·036	·011	·003	·159	·039	·081	·028	·008	·002	1948
1947	·143	·023	·063	·036	·015	·005	·185	·018	·068	·058	·029	·011	·152	·026	·070	·037	·014	·005	·138	·026	·065	·033	·011	·004	1947
1946	·119	·015	·046	·034	·015	·009	·167	·013	·052	·052	·031	·018	·128	·016	·052	·036	·015	·008	·111	·016	·046	·031	·012	·006	1946
1945	·100	·010	·036	·030	·015	·009	·139	·009	·041	·042	·026	·020	·106	·011	·040	·032	·014	·009	·091	·011	·034	·027	·012	·006	1945
1944	·082	·007	·026	·025	·014	·011	·114	·006	·029	·034	·023	·022	·088	·008	·029	·027	·014	·010	·071	·007	·023	·022	·011	·008	1944
1943	·074	·005	·021	·022	·013	·012	·108	·006	·025	·032	·022	·022	·080	·006	·024	·024	·014	·012	·060	·005	·019	·018	·010	·008	1943
1942	·065	·004	·018	·020	·012	·012	·103	·005	·022	·029	·022	·025	·071	·005	·021	·022	·012	·011	·048	·005	·014	·015	·008	·007	1942
1941	·053	·003	·013	·015	·010	·011	·092	·004	·017	·025	·020	·027	·059	·004	·016	·018	·011	·011	·035	·003	·010	·010	·006	·006	1941
1940	·043	·002	·009	·012	·008	·010	·080	·002	·013	·021	·018	·026	·048	·003	·011	·014	·010	·010	·030	·003	·008	·009	·005	·005	1940
1939	·036	·002	·006	·010	·008	·011	·076	·002	·009	·018	·016	·032	·042	·002	·008	·012	·009	·012	·021	·001	·004	·006	·004	·005	1939
1938	·028	·001	·003	·007	·006	·011	·065	·001	·005	·012	·013	·035	·034	·001	·005	·009	·007	·012	·014	·001	·002	·004	·003	·004	1938
1937	·024	·001	·002	·005	·005	·010	·065	·001	·004	·010	·012	·038	·030	·001	·004	·006	·007	·012	·010	·001	·001	·002	·002	·003	1937
1936	·019	·000	·002	·004	·004	·009	·056	·001	·003	·008	·010	·034	·025	·001	·003	·005	·005	·012	·007	·000	·001	·002	·001	·003	1936
1935	·015	·000	·001	·003	·003	·008	·048	·000	·002	·007	·008	·030	·020	·000	·002	·004	·004	·010	·004	·000	·000	·001	·001	·002	1935
1934	·012	·000	·001	·002	·002	·007	·041	·000	·001	·005	·006	·028	·015	·000	·001	·002	·003	·008	·002	·000	·000	·000	·000	·001	1934
1933	·010	·000	·001	·001	·002	·007	·037	·000	·001	·003	·005	·027	·013	·000	·001	·002	·002	·008	·001	·000	·000	·000	·000	·000	1933
1932	·008	·000	·000	·001	·001	·006	·033	·000	·001	·002	·005	·024	·009	·000	·001	·001	·001	·006							1932
1931	·005	·000	·000	·000	·001	·004	·025	·000	·001	·002	·003	·020	·006	·000	·000	·001	·001	·004							1931
1930	·004	·000	·000	·000	·000	·003	·020	·000	·001	·001	·002	·016	·004	·000	·000	·000	·000	·003							1930
1929	·002	·000	·000	·000	·000	·002	·013	·000	·000	·001	·001	·011	·002	—	·000	·000	·000	·002							1929
1928	·002	·000	·000	·000	·000	·001	·011	·000	·000	·000	·001	·009	·001	—	·000	·000	·000	·001							1928

1953—*continued*

Calendar Year of Marriage	Age at marriage: 30–34 — Number of previous children						35–39						40–44						Calendar Year of Marriage
	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	
1953	·065	·061	·002	·001	·000	·000	·050	·046	·001	·001	·000	·001	·014	·013	·001	—	—	·000	1953
1952	·283	·267	·013	·002	·001	·001	·169	·160	·008	·001	·000	·000	·043	·041	·001	·001	·000	·000	1952
1951	·204	·145	·052	·006	·001	·001	·120	·090	·026	·003	·000	·000	·025	·020	·004	·001	—	·000	1951
1950	·175	·078	·080	·015	·002	·000	·096	·047	·042	·006	·001	·000	·016	·008	·007	·001	·000	·000	1950
1949	·146	·047	·071	·022	·004	·002	·067	·021	·032	·010	·001	·002	·007	·004	·002	·000	·000	·000	1949
1948	·118	·029	·056	·023	·007	·003	·039	·011	·019	·006	·002	·001	·005	·002	·002	·000	·000	—	1948
1947	·090	·016	·040	·023	·008	·003	·026	·005	·011	·007	·002	·001							1947
1946	·068	·011	·026	·020	·007	·004	·016	·003	·006	·004	·001	·001							1946
1945	·048	·006	·018	·013	·006	·004	·008	·002	·002	·003	·001	·001							1945
1944	·032	·003	·010	·009	·006	·004	·004	·001	·002	·001	·000	·000							1944
1943	·024	·003	·007	·006	·004	·004	·002	·000	·001	·000	·000	·000							1943
1942	·014	·001	·004	·004	·002	·003													1942
1941	·010	·001	·002	·002	·002	·002													1941
1940	·005	·000	·001	·001	·001	·001													1940
1939	·003	·000	·001	·001	·001	·001													1939
1938	·002	·000	·000	·000	·000	·001													1938

APPENDIX A—*continued*

Live births per woman married once only, irrespective of parity

1954

Calendar Year of Marriage	Age at marriage: All ages under 45 — Number of previous children						Under 20						20–24						25–29						Calendar Year of Marriage
	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	
1954	·099	·097	·001	·000	·000	·000	·190	·189	·001	·000	—	—	·082	·081	·001	·000	·000	·000	·066	·064	·002	·000	·000	·000	1954
1953	·318	·301	·016	·001	·000	·000	·415	·384	·030	·001	—	·000	·308	·294	·013	·000	·000	·000	·295	·282	·012	·001	·000	·000	1953
1952	·231	·148	·077	·005	·000	·000	·289	·144	·137	·008	·000	·000	·230	·155	·070	·004	·000	·000	·222	·156	·060	·005	·001	·000	1952
1951	·209	·091	·097	·019	·002	·000	·266	·081	·144	·038	·002	·000	·211	·099	·094	·016	·001	·000	·199	·098	·085	·013	·002	·000	1951
1950	·200	·061	·098	·034	·007	·001	·248	·047	·123	·062	·014	·001	·207	·068	·101	·031	·006	·001	·190	·066	·093	·026	·004	·001	1950
1949	·168	·038	·078	·037	·012	·003	·215	·028	·091	·065	·025	·006	·175	·044	·082	·036	·011	·002	·159	·041	·078	·030	·008	·002	1949
1948	·143	·025	·062	·036	·015	·006	·190	·020	·067	·059	·030	·013	·151	·029	·068	·036	·014	·005	·134	·028	·062	·030	·010	·004	1948
1947	·119	·016	·046	·033	·016	·009	·159	·013	·049	·050	·029	·018	·128	·018	·051	·035	·015	·009	·113	·018	·048	·029	·012	·006	1947
1946	·101	·011	·034	·029	·016	·011	·144	·010	·038	·042	·030	·023	·110	·012	·039	·032	·016	·010	·092	·011	·034	·027	·012	·008	1946
1945	·082	·007	·025	·025	·014	·011	·117	·007	·029	·034	·024	·023	·088	·009	·028	·026	·014	·011	·073	·007	·025	·022	·011	·008	1945
1944	·071	·005	·019	·022	·013	·013	·104	·005	·022	·030	·022	·025	·076	·006	·022	·024	·014	·012	·061	·006	·016	·019	·010	·010	1944
1943	·061	·004	·015	·017	·012	·013	·093	·005	·018	·025	·020	·025	·067	·004	·018	·020	·013	·013	·046	·003	·013	·014	·008	·008	1943
1942	·053	·003	·012	·015	·010	·012	·085	·004	·016	·023	·018	·023	·059	·004	·015	·017	·011	·012	·035	·003	·009	·009	·007	·007	1942
1941	·044	·002	·009	·013	·009	·011	·075	·002	·012	·019	·017	·024	·051	·003	·012	·015	·010	·011	·027	·002	·006	·008	·005	·005	1941
1940	·035	·002	·007	·010	·007	·010	·070	·002	·010	·017	·016	·026	·041	·002	·008	·012	·008	·010	·021	·001	·005	·006	·004	·005	1940
1939	·028	·001	·004	·007	·006	·010	·065	·001	·006	·014	·014	·031	·033	·001	·005	·009	·007	·010	·015	·001	·003	·004	·003	·004	1939
1938	·023	·000	·003	·005	·005	·010	·060	·001	·004	·010	·012	·033	·029	·001	·004	·007	·006	·011	·010	·000	·002	·003	·002	·003	1938
1937	·019	·000	·002	·004	·004	·009	·062	·001	·003	·009	·011	·039	·023	·001	·003	·005	·005	·010	·006	·000	·001	·001	·001	·002	1937
1936	·015	·000	·001	·003	·003	·008	·047	·001	·002	·006	·008	·029	·020	·000	·002	·004	·004	·010	·004	·000	·000	·001	·001	·002	1936
1935	·011	·000	·001	·002	·002	·007	·041	·000	·002	·004	·006	·028	·015	·000	·001	·002	·003	·008	·002	·000	·000	·000	·000	·001	1935
1934	·010	·000	·001	·001	·002	·006	·037	·000	·002	·004	·006	·026	·012	·000	·001	·002	·002	·007	·002	·000	·000	·000	·000	·001	1934
1933	·007	·000	·000	·001	·001	·005	·031	·000	·001	·003	·004	·023	·008	·000	·000	·001	·001	·005							1933
1932	·006	·000	·000	·001	·001	·004	·028	·000	·001	·002	·004	·020	·006	·000	·000	·001	·001	·004							1932
1931	·004	·000	·000	·000	·000	·003	·020	·000	·001	·001	·002	·016	·003	·000	·000	·000	·000	·002							1931
1930	·002	·000	·000	·000	·000	·002	·014	·000	·001	·001	·001	·011	·002	·000	·000	·000	·000	·002							1930
1929	·001	·000	·000	·000	·000	·001	·010	·000	·000	·001	·001	·008	·001	·000	·000	·000	·000	·001							1929

1954—*continued*

Calendar Year of Marriage	Age at marriage: 30–34 — Number of previous children						35–39						40–44						Calendar Year of Marriage
	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	
1954	·069	·066	·002	·001	·000	·000	·052	·050	·001	·000	·000	·000	·015	·014	·000	—	·000	—	1954
1953	·277	·262	·012	·001	·001	·001	·191	·180	·008	·002	·000	·001	·047	·043	·002	·000	·000	·001	1953
1952	·200	·137	·055	·006	·001	·001	·115	·081	·030	·002	·001	·000	·029	·023	·006	·001	—	—	1952
1951	·161	·073	·070	·014	·002	·001	·090	·043	·040	·006	·001	·000	·013	·009	·003	·000	·000	—	1951
1950	·158	·050	·078	·024	·004	·002	·067	·023	·032	·010	·001	·000	·007	·004	·002	·000	—	·000	1950
1949	·119	·029	·057	·023	·007	·002	·043	·012	·020	·009	·002	·001	·004	·001	·002	·001	—	·000	1949
1948	·090	·016	·040	·022	·008	·004	·028	·008	·012	·006	·002	·001							1948
1947	·066	·010	·025	·018	·008	·004	·019	·004	·008	·005	·002	·001							1947
1946	·049	·006	·016	·014	·008	·006	·009	·002	·002	·004	·001	·000							1946
1945	·033	·004	·010	·010	·005	·004	·004	·000	·002	·001	·000	·000							1945
1944	·021	·002	·006	·006	·004	·003	·002	·000	·000	·000	·000	·000							1944
1943	·016	·001	·003	·004	·004	·003													1943
1942	·010	·001	·002	·003	·002	·002													1942
1941	·006	·001	·001	·002	·001	·002													1941
1940	·003	·001	·000	·001	·000	·001													1940
1939	·002	·000	·000	·000	·000	·001													1939

APPENDIX A—*continued*

Live births per woman married once only, irrespective of parity

1955

Calendar Year of Marriage	Age at marriage																							Calendar Year of Marriage
	All ages under 45						Under 20						20–24						25–29					
	Number of previous children																							
	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	
1955	·098	·096	·001	·000	·000	·000	·179	·178	·001	·000	—	—	·080	·079	·001	·000	·000	·000	·071	·068	·002	·000	·000	·000	1955
1954	·318	·301	·017	·001	·000	·000	·402	·371	·030	·001	·000	—	·308	·294	·014	·001	·000	·000	·303	·288	·013	·001	·000	·000	1954
1953	·230	·146	·079	·005	·000	·000	·284	·137	·138	·008	·000	·000	·227	·152	·070	·004	·000	·000	·223	·155	·062	·005	·001	·000	1953
1952	·211	·088	·100	·020	·002	·000	·266	·076	·147	·040	·002	·000	·212	·096	·098	·017	·002	·000	·200	·098	·085	·015	·002	·001	1952
1951	·192	·060	·094	·032	·006	·001	·243	·049	·122	·060	·012	·001	·197	·067	·096	·029	·005	·001	·181	·063	·088	·024	·004	·001	1951
1950	·181	·041	·085	·040	·012	·003	·224	·030	·095	·067	·026	·005	·191	·048	·092	·038	·011	·002	·166	·044	·080	·032	·008	·003	1950
1949	·144	·026	·062	·036	·015	·006	·187	·020	·066	·058	·030	·013	·152	·030	·069	·035	·014	·005	·132	·027	·061	·030	·010	·004	1949
1948	·118	·017	·046	·031	·015	·009	·160	·012	·050	·047	·030	·020	·126	·020	·051	·032	·014	·008	·108	·019	·045	·028	·011	·006	1948
1947	·100	·011	·034	·028	·015	·011	·141	·010	·036	·042	·028	·025	·107	·012	·038	·030	·015	·011	·092	·012	·034	·025	·013	·008	1947
1946	·081	·007	·024	·024	·014	·012	·120	·007	·027	·034	·026	·027	·089	·008	·027	·027	·015	·012	·072	·008	·024	·022	·011	·008	1946
1945	·069	·005	·018	·020	·012	·012	·104	·006	·023	·028	·021	·026	·074	·006	·021	·022	·013	·012	·058	·006	·016	·018	·010	·009	1945
1944	·059	·004	·013	·017	·012	·013	·091	·004	·016	·023	·020	·027	·063	·004	·015	·019	·012	·013	·045	·004	·012	·013	·008	·008	1944
1943	·050	·003	·011	·014	·010	·013	·079	·003	·013	·020	·017	·026	·055	·003	·012	·016	·011	·013	·036	·003	·009	·010	·006	·008	1943
1942	·043	·002	·009	·012	·009	·012	·074	·003	·012	·018	·017	·025	·048	·003	·010	·014	·010	·012	·025	·002	·006	·007	·004	·006	1942
1941	·036	·002	·006	·010	·007	·011	·064	·002	·009	·016	·014	·024	·042	·002	·008	·012	·008	·012	·018	·001	·004	·005	·004	·004	1941
1940	·029	·001	·005	·008	·006	·010	·062	·002	·007	·014	·013	·026	·034	·001	·006	·009	·007	·010	·014	·001	·003	·004	·003	·004	1940
1939	·024	·001	·003	·006	·005	·010	·058	·001	·005	·010	·012	·030	·029	·001	·004	·007	·006	·011	·010	·000	·002	·003	·002	·003	1939
1938	·018	·000	·002	·003	·004	·009	·051	·001	·003	·008	·009	·031	·023	·001	·002	·005	·005	·010	·006	·000	·001	·001	·001	·002	1938
1937	·015	·000	·001	·002	·003	·008	·050	·000	·002	·008	·009	·031	·018	·000	·002	·003	·004	·009	·004	·000	·000	·001	·001	·002	1937
1936	·011	·000	·001	·002	·002	·006	·041	·001	·002	·005	·006	·028	·014	·000	·001	·002	·003	·008	·002	·000	·000	·001	·000	·001	1936
1935	·009	·000	·001	·001	·001	·006	·037	·000	·002	·004	·005	·026	·012	·000	·001	·002	·002	·007	·001	·000	·000	·000	·000	·000	1935
1934	·006	·000	·000	·001	·001	·004	·028	·000	·001	·003	·004	·020	·008	·000	·000	·001	·001	·005							1934
1933	·005	·000	·000	·000	·001	·003	·024	·000	·000	·002	·003	·018	·005	·000	·000	·001	·001	·004							1933
1932	·003	·000	·000	·000	·000	·002	·017	·000	·001	·001	·002	·013	·003	·000	·000	·000	·000	·002							1932
1931	·002	·000	·000	·000	·000	·002	·014	·000	·000	·001	·001	·011	·002	—	·000	·000	·000	·002							1931
1930	·001	—	·000	·000	·000	·001	·010	—	·000	·000	·001	·008	·001	—	·000	·000	·000	·001							1930

1955—*continued*

Calendar Year of Marriage	Age at marriage																		Calendar Year of Marriage
	30–34						35–39						40–44						
	Number of previous children																		
	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	
1955	·068	·064	·002	·000	·001	·000	·048	·046	·001	·000	·000	·000	·015	·015	—	—	·000	·000	1955
1954	·282	·266	·013	·002	·001	·000	·186	·178	·007	·001	·000	·000	·047	·045	·001	·000	—	·001	1954
1953	·203	·138	·057	·006	·001	·001	·117	·084	·030	·002	·001	·000	·028	·020	·007	·000	—	·000	1953
1952	·172	·077	·078	·013	·002	·001	·083	·034	·041	·006	·002	·000	·015	·009	·005	·000	·000	·000	1952
1951	·145	·048	·070	·019	·005	·002	·062	·022	·028	·010	·002	·000	·007	·004	·002	·001	·000	—	1951
1950	·133	·034	·063	·026	·008	·003	·050	·014	·022	·010	·003	·001	·004	·001	·002	·000			1950
1949	·095	·019	·041	·023	·008	·003	·029	·006	·012	·007	·003	·001							1949
1948	·067	·012	·024	·019	·008	·005	·015	·003	·005	·004	·002	·001							1948
1947	·047	·007	·016	·012	·007	·005	·010	·002	·003	·002	·002	·001							1947
1946	·034	·004	·010	·010	·006	·004	·004	·000	·001	·002	·001	·000							1946
1945	·024	·003	·007	·007	·004	·004	·002	·000	·001	·001	·000	·000							1945
1944	·015	·001	·004	·004	·002	·003													1944
1943	·009	·001	·002	·003	·002	·002													1943
1942	·006	·001	·001	·002	·001	·002													1942
1941	·002	·000	·000	·001	·001	·000													1941
1940	·002	·000	·000	·000	·000	·001													1940

APPENDIX A—*continued*

Live births per woman married once only, irrespective of parity

1956

Calendar Year of Marriage	Age at marriage																							Calendar Year of Marriage
	All ages under 45						Under 20						20–24						25–29					
	Number of previous children																							
	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	
1956	·102	·100	·001	·000	·000	·000	·185	·184	·001	·000	—	—	·081	·080	·001	·000	·000	·000	·069	·066	·002	·000	·000	·000	1956
1955	·329	·311	·017	·001	·000	·000	·412	·382	·030	·001	·000	·000	·316	·302	·014	·001	·000	·000	·313	·298	·013	·001	·000	·000	1955
1954	·239	·151	·082	·005	·000	·000	·296	·148	·140	·008	·000	·000	·233	·156	·072	·005	·000	·000	·232	·162	·063	·006	·001	·000	1954
1953	·222	·094	·105	·020	·002	·000	·277	·081	·154	·040	·002	·000	·224	·103	·101	·017	·001	·000	·212	·102	·091	·016	·002	·000	1953
1952	·204	·063	·100	·034	·006	·001	·256	·050	·128	·063	·012	·001	·209	·071	·102	·031	·005	·001	·190	·066	·092	·025	·005	·001	1952
1951	·179	·044	·084	·037	·012	·003	·225	·034	·098	·063	·024	·005	·186	·050	·089	·035	·010	·002	·167	·046	·081	·029	·008	·002	1951
1950	·165	·031	·070	·041	·016	·006	·214	·024	·077	·067	·032	·014	·174	·036	·078	·040	·015	·005	·149	·032	·067	·032	·012	·005	1950
1949	·124	·018	·048	·033	·016	·009	·166	·015	·050	·049	·031	·020	·132	·021	·054	·034	·015	·008	·111	·019	·047	·028	·012	·006	1949
1948	·106	·013	·036	·030	·016	·012	·149	·011	·038	·043	·030	·027	·115	·016	·042	·032	·015	·011	·093	·014	·036	·025	·011	·008	1948
1947	·086	·008	·026	·024	·014	·013	·129	·007	·030	·036	·027	·028	·093	·010	·030	·026	·015	·012	·076	·009	·025	·021	·010	·009	1947
1946	·073	·006	·019	·021	·013	·014	·119	·006	·023	·031	·025	·033	·079	·006	·022	·023	·014	·014	·062	·006	·018	·018	·011	·010	1946
1945	·061	·004	·014	·017	·012	·014	·098	·005	·018	·025	·020	·030	·066	·005	·016	·019	·012	·013	·048	·004	·012	·014	·009	·009	1945
1944	·052	·003	·010	·014	·011	·014	·084	·003	·013	·021	·018	·029	·056	·004	·012	·016	·011	·014	·039	·003	·008	·010	·008	·010	1944
1943	·044	·002	·008	·011	·009	·013	·070	·003	·011	·016	·015	·026	·049	·003	·010	·014	·010	·013	·026	·002	·006	·007	·005	·007	1943
1942	·038	·002	·007	·010	·008	·012	·067	·002	·008	·017	·014	·026	·043	·002	·008	·012	·009	·012	·019	·001	·004	·005	·004	·005	1942
1941	·030	·001	·005	·008	·006	·010	·060	·002	·007	·013	·013	·026	·035	·001	·006	·010	·007	·011	·014	·001	·003	·003	·003	·004	1941
1940	·024	·001	·003	·006	·005	·009	·055	·001	·005	·012	·011	·025	·028	·001	·004	·008	·006	·009	·010	·000	·001	·003	·002	·003	1940
1939	·020	·000	·002	·004	·004	·009	·052	·001	·003	·010	·010	·028	·024	·001	·003	·006	·005	·010	·007	·000	·001	·002	·002	·002	1939
1938	·014	·000	·001	·002	·003	·008	·047	·000	·002	·006	·009	·029	·018	·000	·002	·003	·004	·008	·004	·000	·000	·001	·001	·002	1938
1937	·011	·000	·001	·002	·002	·006	·044	·000	·002	·006	·006	·029	·014	·000	·001	·002	·003	·007	·002	·000	·000	·000	·000	·001	1937
1936	·009	·000	·000	·001	·002	·005	·038	·001	·002	·004	·005	·027	·010	·000	·001	·002	·002	·006	·001	·000	·000	·000	·000	·000	1936
1935	·006	·000	·000	·001	·001	·004	·027	·000	·001	·003	·004	·020	·007	·000	·000	·001	·001	·005							1935
1934	·005	·000	·000	·000	·001	·003	·021	·000	·001	·002	·003	·016	·005	·000	·000	·001	·001	·004							1934
1933	·003	·000	·000	·000	·000	·002	·018	·000	·001	·001	·001	·014	·003	·000	·000	·000	·000	·002							1933
1932	·002	·000	·000	·000	·000	·002	·013	·000	·000	·001	·001	·011	·002	—	·000	·000	·000	·001							1932
1931	·001	·000	·000	·000	·000	·001	·008	·000	·000	·001	·001	·007	·001	·000	·000	·000	·000	·001							1931

1956—*continued*

Calendar Year of Marriage	Age at marriage																		Calendar Year of Marriage
	30–34						35–39						40–44						
	Number of previous children																		
	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	Total	0	1	2	3	4 or more	
1956	·074	·071	·002	·000	·000	·000	·049	·046	·001	·001	·001	·000	·021	·020	·000	—	—	·000	1956
1955	·287	·271	·013	·002	·001	·000	·191	·183	·007	·001	·000	·000	·046	·044	·002	·000	·000	—	1955
1954	·204	·135	·060	·007	·001	·001	·137	·103	·029	·004	·000	·001	·030	·026	·004	·000	—	—	1954
1953	·166	·072	·076	·014	·002	·001	·091	·042	·042	·005	·001	·001	·016	·012	·004	·000	—	·000	1953
1952	·154	·052	·073	·022	·005	·002	·058	·019	·027	·008	·002	·001	·007	·002	·004	·001	·000	—	1952
1951	·123	·033	·057	·022	·008	·002	·042	·012	·018	·008	·003	·001	·002	·001	·001	·000	—	—	1951
1950	·104	·020	·041	·029	·009	·004	·028	·007	·013	·006	·002	·002							1950
1949	·068	·010	·025	·018	·009	·005	·015	·003	·005	·004	·002	·000							1949
1948	·050	·006	·017	·014	·007	·005	·008	·001	·002	·002	·001	·001							1948
1947	·033	·004	·010	·008	·006	·004	·004	·001	·001	·001	·001	·000							1947
1946	·025	·002	·007	·007	·004	·005	·003	·000	·001	·001	·000	·000							1946
1945	·016	·001	·004	·005	·003	·003													1945
1944	·010	·001	·002	·003	·002	·003													1944
1943	·006	·001	·001	·002	·001	·002													1943
1942	·003	·000	·001	·001	·000	·001													1942
1941	·001	·000	·000	·000	·000	·000													1941

APPENDIX B

AGE FERTILITY RATES IN REGIONS, CONURBATIONS AND URBAN/RURAL AGGREGATES, 1956

Table 1.—All live births per 1,000 women

Area	Age of mother at maternity						
	15–44	15–	20–	25–	30–	35–	40–44
ENGLAND AND WALES	**77·0**	**27·3**	**146·8**	**150·6**	**88·2**	**45·5**	**13·2**
Regions and Conurbations :							
Northern	**85·9**	**24·3**	**159·6**	**164·3**	**98·1**	**55·1**	**15·3**
Tyneside Conurbation	84·2	23·2	153·6	160·9	95·1	56·3	15·5
Remainder of Northern	86·5	24·6	161·9	165·6	99·4	54·7	15·2
East and West Ridings	**78·8**	**27·6**	**157·1**	**153·1**	**87·7**	**45·6**	**13·0**
West Yorkshire Conurbation	77·2	28·5	153·5	152·6	87·6	42·5	12·0
Remainder of East and West Ridings	79·9	27·0	159·4	153·4	87·8	47·9	13·8
North Western	**79·8**	**27·7**	**151·5**	**156·4**	**94·0**	**48·1**	**13·6**
South East Lancashire Conurbation	77·9	29·6	151·8	150·9	91·6	45·7	12·3
Merseyside Conurbation	91·5	26·9	163·7	174·9	110·3	59·3	19·4
Remainder of North Western	75·0	26·6	143·6	151·1	87·4	44·4	12·0
North Midland	**79·3**	**29·1**	**152·7**	**154·1**	**88·3**	**46·1**	**13·2**
Midland	**78·0**	**27·3**	**142·9**	**146·8**	**89·7**	**49·2**	**15·2**
West Midlands Conurbation	76·0	26·9	136·4	139·9	87·3	50·2	15·8
Remainder of Midland	80·2	27·7	149·8	154·1	92·2	48·2	14·6
Eastern	**82·1**	**28·9**	**156·0**	**168·7**	**94·5**	**44·9**	**13·2**
London and South Eastern	**67·8**	**26·0**	**126·4**	**135·1**	**78·6**	**39·2**	**11·4**
Greater London	66·4	26·6	122·0	129·7	76·9	38·3	11·2
Remainder of South Eastern	72·8	24·2	142·1	155·0	84·8	42·5	12·0
Southern	**82·5**	**30·8**	**164·4**	**163·3**	**90·9**	**45·9**	**14·2**
South Western	**78·1**	**27·0**	**153·2**	**156·8**	**88·4**	**44·5**	**12·7**
Wales (including Monmouthshire)	**78·3**	**27·5**	**152·4**	**142·9**	**91·2**	**50·3**	**14·2**
Wales I (South East)	78·4	29·1	157·6	138·7	88·2	49·5	13·7
Wales II (Remainder)	78·1	23·3	138·3	155·1	99·8	52·3	15·5
Urban/Rural Aggregates :							
Conurbations	73·3	27·1	136·3	141·4	84·9	43·7	12·8
Areas outside Conurbations :							
Urban areas with populations of 100,000 and over	77·3	29·2	151·5	145·2	85·9	45·7	13·3
Urban areas with populations of 50,000 and under 100,000	76·6	29·0	146·0	150·8	86·3	45·3	12·2
Urban areas with populations under 50,000	79·3	27·4	154·1	157·7	89·9	45·9	13·3
Rural Districts	82·4	25·6	158·1	166·5	95·9	48·8	14·1

Table 2.—Legitimate live births per 1,000 married women

Area	Age of mother at maternity						
	15–44	15–	20–	25–	30–	35–	40–44
ENGLAND AND WALES	**108·3**	**411·0**	**258·4**	**181·0**	**98·1**	**50·5**	**14·6**
Regions and Conurbations :							
Northern	**123·3**	**432·1**	**284·8**	**195·3**	**108·2**	**60·8**	**17·1**
Tyneside Conurbation	121·8	437·7	283·3	193·8	105·8	62·6	17·5
Remainder of Northern	123·8	430·3	285·4	195·9	109·2	60·1	17·0
East and West Ridings	**108·2**	**409·3**	**258·8**	**177·2**	**95·3**	**49·4**	**14·1**
West Yorkshire Conurbation	106·0	436·8	258·7	178·1	95·4	46·5	13·2
Remainder of East and West Ridings	109·7	393·3	258·9	176·6	95·3	51·5	14·8
North Western	**113·5**	**461·9**	**276·8**	**189·6**	**105·3**	**53·6**	**15·2**
South East Lancashire Conurbation	107·2	437·0	262·9	178·5	101·0	50·0	13·6
Merseyside Conurbation	139·7	511·8	331·2	221·9	127·2	68·0	22·3
Remainder of North Western	105·9	459·2	260·2	182·7	97·7	49·5	13·4
North Midland	**107·1**	**359·5**	**243·9**	**176·6**	**95·4**	**49·2**	**14·3**
Midland	**107·5**	**424·0**	**244·3**	**172·4**	**97·8**	**53·7**	**16·3**
West Midlands Conurbation	104·3	433·1	236·1	163·5	94·9	54·4	16·9
Remainder of Midland	110·9	415·4	252·8	181·9	100·9	52·9	15·6
Eastern	**114·1**	**403·6**	**267·2**	**201·8**	**104·4**	**49·3**	**14·4**
London and South Eastern	**96·4**	**391·9**	**233·9**	**168·5**	**89·5**	**44·6**	**12·9**
Greater London	93·9	400·2	227·3	162·0	87·6	43·4	12·7
Remainder of South Eastern	105·3	367·0	256·5	192·4	96·0	48·7	13·6
Southern	**115·8**	**400·7**	**279·5**	**195·7**	**100·9**	**51·3**	**15·7**
South Western	**111·0**	**407·5**	**272·8**	**188·0**	**98·6**	**49·8**	**14·2**
Wales (including Monmouthshire)	**112·8**	**437·7**	**276·5**	**173·8**	**102·4**	**56·4**	**16·0**
Wales I (South East)	111·2	444·7	275·8	165·6	98·0	54·9	15·3
Wales II (Remainder)	117·5	414·5	278·7	200·1	115·3	60·5	17·8
Urban/Rural Aggregates :							
Conurbations	103·3	424·8	248·0	172·5	95·2	48·9	14·4
Areas outside Conurbations :							
Urban areas with populations of 100,000 and over	106·7	418·5	254·5	169·4	93·7	49·9	14·3
Urban areas with populations of 50,000 and under 100,000	107·2	421·8	248·7	179·1	95·6	50·1	13·5
Urban areas with populations under 50,000	111·1	401·0	263·6	187·4	99·2	50·8	14·8
Rural Districts	117·1	385·0	280·4	201·2	107·2	54·1	15·6

APPENDIX B—*continued*

Table 3.—Illegitimate live births per 1,000 unmarried* women

Area	Age of mother at maternity						
	15–44	15–	20–	25–	30–	35–	40–44
ENGLAND AND WALES	**11·43**	**4·79**	**15·82**	**24·34**	**24·61**	**15·43**	**5·25**
Regions and Conurbations :							
Northern	**9·87**	**3·69**	**12·30**	**23·74**	**26·03**	**17·96**	**4·13**
Tyneside Conurbation	9·77	3·70	11·53	21·93	24·42	18·78	4·13
Remainder of Northern	9·91	3·68	12·61	24·49	26·73	17·60	4·13
East and West Ridings	**11·56**	**3·92**	**15·74**	**28·82**	**29·53**	**19·28**	**6·06**
West Yorkshire Conurbation	13·07	4·19	16·88	34·23	34·34	18·21	5·35
Remainder of East and West Ridings	10·49	3·76	14·94	24·60	25·68	20·21	6·70
North Western	**11·42**	**5·09**	**15·10**	**23·37**	**24·68**	**16·46**	**5·22**
South East Lancashire Conurbation	13·57	5·52	17·65	30·13	30·85	20·00	5·53
Merseyside Conurbation	10·71	5·26	14·55	19·46	21·11	14·81	5·80
Remainder of North Western	9·91	4·57	13·19	19·82	21·26	14·09	4·58
North Midland	**12·63**	**5·07**	**17·39**	**30·00**	**29·33**	**22·66**	**5·80**
Midland	**11·92**	**4·23**	**15·89**	**27·45**	**28·73**	**17·56**	**8·01**
West Midlands Conurbation	12·78	4·30	17·06	30·00	29·90	19·90	8·29
Remainder of Midland	11·01	4·16	14·58	24·74	27·47	15·15	7·71
Eastern	**11·93**	**5·95**	**16·73**	**23·30**	**24·66**	**15·72**	**5·77**
London and South Eastern	**11·63**	**5·37**	**16·68**	**22·62**	**21·34**	**12·37**	**4·35**
Greater London	12·05	5·52	16·93	23·53	21·39	12·52	4·37
Remainder of South Eastern	10·22	4·92	15·71	18·95	21·17	11·83	4·28
Southern	**13·35**	**5·67**	**21·00**	**27·32**	**27·94**	**14·71**	**6·62**
South Western	**10·40**	**4·38**	**13·55**	**25·38**	**23·26**	**13·31**	**4·57**
Wales (including Monmouthshire)	**8·50**	**3·45**	**12·65**	**16·19**	**19·05**	**12·33**	**4·23**
Wales I (South East)	8·07	3·19	12·12	15·53	18·84	12·75	3·91
Wales II (Remainder)	9·50	4·11	13·83	17·59	19·50	11·50	4·89
Urban/Rural Aggregates :							
Conurbations	12·19	5·09	16·53	25·46	24·70	15·23	5·11
Areas outside Conurbations :							
Urban areas with populations of 100,000 and over	13·16	4·78	19·09	29·68	30·30	19·20	7·25
Urban areas with populations of 50,000 and under 100,000	11·81	5·30	16·45	26·31	23·88	16·55	5·05
Urban areas with populations under 50,000	10·27	4·46	14·10	22·12	24·42	14·59	4·75
Rural Districts	9·69	4·41	13·57	19·72	20·81	13·72	4·80

* Single, widowed and divorced.

APPENDIX C

Table 1.—Net nuptiality table for males under age 50, 1951–55, England and Wales

Age	Survivors of 105,900 liveborn boys					Marriages		Deaths					Widowhoods		Divorces	
	All conditions	Single	Married once only	Married more than once	Widowed or divorced	First marriages	Re-marriages	All conditions	Single	Married once only	Married more than once	Widowed or divorced	Married once only	Married more than once	Married once only	Married more than once
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
15	101,241	101,241														
16	101,167	101,167	0	0	0	30	0	82	82	0	0	0	0	0	0	0
17	101,085	101,055	30	0	0	253	0	92	92	0	0	0	0	0	0	0
18	100,993	100,710	283	0	0	991	0	107	107	0	0	0	0	0	0	0
19	100,886	99,612	1,274	0	0	2,077	0	121	119	2	0	0	1	0	0	0
20	100,765	97,416	3,348	0	1	4,995	0	130	126	4	0	0	2	0	1	0
21	100,635	92,295	8,336	0	4	10,212	1	136	125	11	0	0	4	0	6	0
22	100,499	81,958	18,527	1	13	11,378	3	137	112	25	0	0	11	0	22	0
23	100,362	70,468	29,847	4	43	11,858	11	137	96	41	0	0	18	0	46	0
24	100,225	58,514	41,600	15	96	10,561	28	140	82	58	0	0	25	0	92	0
25	100,085	47,871	51,986	43	185	8,533	57	141	67	74	0	0	36	0	165	0
26	99 944	39,271	60,244	100	329	6,641	106	143	56	87	0	0	42	0	235	0
27	99,801	32,574	66,521	206	500	5,083	169	146	48	97	0	1	53	0	296	0
28	99,655	27,443	71,158	375	679	3,942	226	148	41	105	1	1	57	0	342	0
29	99,507	23,460	74,596	600	851	3,085	237	152	36	114	1	1	67	1	380	0
30	99,355	20,339	77,120	835	1,061	2,447	321	155	32	120	1	2	69	1	404	0
31	99,200	17,860	78,974	1,154	1,212	1,955	356	161	29	128	2	2	79	1	422	1
32	99,039	15,876	80,300	1,506	1,357	1,581	385	168	27	136	3	2	80	2	440	2
33	98,871	14,268	81,225	1,884	1,494	1,279	405	174	25	143	3	3	81	2	443	3
34	98,697	12,964	81,837	2,281	1,615	1,044	421	184	24	153	4	3	90	3	434	5
35	98,513	11,896	82,204	2,690	1,723	864	428	193	23	162	5	3	90	3	419	5
36	98,320	11,009	82,397	3,105	1,809	722	427	207	23	173	7	4	99	4	401	6
37	98,113	10,264	82,446	3,515	1,888	611	423	221	23	186	8	4	107	5	383	7
38	97,892	9,630	82,381	3,918	1,963	519	414	239	23	201	10	5	115	5	356	8
39	97,653	9,088	82,228	4,309	2,028	438	403	259	24	219	11	5	123	6	336	9
40	97,394	8,626	81,988	4,686	2,094	372	391	283	25	238	14	6	139	8	321	10
41	97,111	8,229	81,662	5,045	2,175	318	383	309	26	260	16	7	147	9	307	11
42	96,802	7,885	81,266	5,392	2,259	272	377	341	28	286	19	8	163	11	292	11
43	96,461	7,585	80,797	5,728	2,351	234	376	377	30	316	22	9	178	13	279	12
44	96,084	7,321	80,258	6,057	2,448	203	373	418	32	349	26	11	185	14	272	13
45	95,666	7,086	79,655	6,377	2,548	178	371	465	34	388	31	12	199	16	260	14
46	95,201	6,874	78,986	6,687	2,654	159	372	517	37	430	36	14	213	18	251	15
47	94,684	6,678	78,251	6,990	2,765	141	374	575	41	475	42	17	235	21	236	14
48	94,109	6,496	77,446	7,287	2,880	127	374	640	44	526	50	20	263	25	230	15
49	93,469	6,325	76,554	7,571	3,019	117	379	710	48	581	58	23	299	30	218	17
50	92,759	6,160	75,573	7,845	3,181											

APPENDIX C—*continued*

Table 2.—Net nuptiality table for females under age 50, 1951–55, England and Wales

Age	Survivors of 100,000 liveborn girls					Marriages		Deaths					Widowhoods		Divorces	
	All conditions	Single	Married once only	Married more than once	Widowed or divorced	First marriages	Re-marriages	All conditions	Single	Married once only	Married more than once	Widowed or divorced	Married once only	Married more than once	Married once only	Married more than once
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
15	96,608	96,608						48	48							
16	96,560	96,560	0	0	0	632	0	56	56	0	0	0	0	0	0	0
17	96,504	95,872	632	0	0	2,458	0	62	62	0	0	0	0	0	0	0
18	96,442	93,352	3,090	0	0	6,340	0	69	67	2	0	0	2	0	0	0
19	96,373	86,945	9,426	0	2	11,237	0	73	66	7	0	0	6	0	1	0
20	96,300	75,642	20,649	0	9	12,761	2	80	63	17	0	0	12	0	23	0
21	96,220	62,818	33,358	2	42	14,568	14	84	55	29	0	0	23	0	62	0
22	96,136	48,195	47,812	16	113	10,905	41	89	45	44	0	0	33	0	137	0
23	96,047	37,245	58,503	57	242	8,227	91	91	35	56	0	0	47	0	223	0
24	95,956	28,983	66,404	148	421	5,877	156	96	29	67	0	0	60	0	332	0
25	95,860	23,077	71,822	304	657	4,096	236	102	24	77	0	1	65	0	427	0
26	95,758	18,957	75,349	540	912	3,007	314	105	21	82	1	1	75	1	483	0
27	95,653	15,929	77,716	852	1,156	2,220	367	111	18	91	1	1	85	1	526	0
28	95,542	13,691	79,234	1,217	1,400	1,669	391	114	16	95	1	2	95	1	545	0
29	95,428	12,006	80,168	1,606	1,648	1,283	411	117	15	98	2	2	104	2	552	1
30	95,311	10,708	80,697	2,012	1,894	1,019	416	121	14	102	3	2	113	3	529	3
31	95,190	9,675	80,972	2,419	2,124	801	414	126	13	107	3	3	121	4	485	4
32	95,064	8,861	81,060	2,822	2,321	631	398	131	12	112	4	3	130	5	455	5
33	94,933	8,218	80,994	3,206	2,515	513	393	138	12	117	5	4	146	6	438	6
34	94,795	7,693	80,806	3,582	2,714	418	380	145	12	124	5	4	154	7	434	7
35	94,650	7,263	80,512	3,943	2,932	350	373	153	12	130	6	5	169	8	429	8
36	94,497	6,901	80,134	4,294	3,168	293	364	163	12	139	7	5	184	10	416	9
37	94,334	6,596	79,688	4,632	3,418	249	356	173	12	147	8	6	207	12	401	9
38	94,161	6,335	79,182	4,959	3,685	208	347	185	12	156	10	7	230	14	376	10
39	93,976	6,115	78,628	5,272	3,961	174	340	198	13	166	11	8	252	17	360	11
40	93,778	5,928	78,024	5,573	4,253	146	338	213	13	177	13	10	273	20	348	12
41	93,565	5,769	77,372	5,866	4,558	128	329	230	14	191	14	11	302	23	325	13
42	93,335	5,627	76,682	6,145	4,881	117	316	248	15	204	16	13	337	27	314	13
43	93,087	5,495	75,944	6,405	5,243	100	305	269	16	219	19	15	372	31	280	14
44	92,818	5,379	75,173	6,646	5,620	93	295	291	17	235	21	18	406	36	251	15
45	92,527	5,269	74,374	6,869	6,015	78	287	316	18	254	23	21	446	41	228	15
46	92,211	5,173	73,524	7,077	6,437	72	276	342	19	273	26	24	485	47	199	16
47	91,869	5,082	72,639	7,264	6,884	63	275	371	21	293	29	28	538	54	180	16
48	91,498	4,998	71,691	7,440	7,369	59	270	404	22	317	33	32	595	62	158	12
49	91,094	4,917	70,680	7,603	7,894	56	270	438	24	339	37	38	664	71	142	13
50	90,656	4,837	69,591	7,752	8,476											

APPENDIX D

STATISTICS DIVISION OF THE GENERAL REGISTER OFFICE, 1st JANUARY, 1958

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F. A. Rooke-Matthews

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M. A. Heasman, M.R.C.S., L.R.C.P., D.P.H.
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APPENDIX E

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British Journal of Preventive and Social Medicine :
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  Working Group on Censuses of Population and Housing
Industrial Classification :
  Interdepartmental Committee on Industrial Classification, and
  Working Party on 1954 Review of the Standard Industrial Classification
Medical Nomenclature and Statistics Committee, and
  Sub-Committee on Cancer Registration, and
  Sub-Committee on Classification of Cardiovascular Disease, and
  Sub-Committee on Statistics
Medical Research Council :
  Committee for Research on Social and Environmental Health, and
  Statistics Committee
Ministry of Health :
  Study Group on Preventive Medicine
Ministry of Labour and National Service :
  Industrial Health Advisory Committee, and
  Sub-Committee on Surveys and Statistics
National Coal Board :
  Advisory Panel on Epidemiology
Population Investigation Committee
Social and Economic Research :
  Interdepartmental Committee, and
  Sub-Committee on the Ministry of Food
Society of Medical Officers of Health :
  Advisory Committee on Research
World Health Organization :
  Expert Committee on Health Statistics, and
  Regional Committee for Europe—Advisory Group on Prevention of Accidents in Childhood

APPENDIX F

ARTICLES BY OFFICERS OF THE GENERAL REGISTER OFFICE PUBLISHED DURING 1956

Brooke, E. M.	Too Much Barbiturate? *The Lancet*, Vol. I, No. 6908, page 150, 1956.
Logan, W. P. D.	Tuberculosis in Europe. *National Association for the Prevention of Tuberculosis, Bulletin*, page 16, February, 1956.
Logan, W. P. D.	Mortality from Fog in London. *British Medical Journal*, Vol. I, No. 4969, page 722, 1956.
Logan, W. P. D.	Patients in Mental Hospitals. *Proceedings of the Royal Society of Medicine*, Vol. 49, page 495, 1956.
Loy, R. M.	A Code of Surgical Operations. *The Medical Record*, Vol. 4, No. 1, page 28, 1956.
McKenzie, A.	Duration of Symptoms, Clinical Staging and Survival in Cancer of Certain Sites. *British Journal of Cancer*, Vol. X, No. 3, page 401, 1956.
McKenzie, A.	Diagnosis of Cancer of Lung and Stomach. *British Medical Journal*, Vol. II, No. 4986, page 204, 1956.
Schneider, J. R. L. ..	Local Population Projections in England and Wales. *Population Studies*, Vol. X, No. 1, page 95, 1956.
Benjamin, B., with Cox, P.R., and Menzler, F.A.A.	Modern Population Trends and Problems. *Journal of Institute of Actuaries*, Vol. 82, Part III, No. 362, page 279, 1956.

APPENDIX G

PAPERS WRITTEN BY OFFICERS OF THE GENERAL REGISTER OFFICE FOR THE WORLD POPULATION CONFERENCE, ROME, 1954

(*Proceedings of the Conference published* 1955–57)

Benjamin, B., and Carrier, N. H. ..	An Evaluation of the Quality of Demographic Statistics in England and Wales. Vol. IV, page 37.
Feery, L. M.	Conurbations in England and Wales. Vol. IV, page 615.
Logan, W. P. D.	Social Class Variations in Mortality. Vol. I, page 185.
Schneider, J. R. L.	Alternative Population Concepts. Vol. IV, page 857.

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