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Contributors

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CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

ON THE

Sanitary Condition of the City

DURING THE YEAR

1924.

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Members of Council who served on the

HEALTH COMMITTEE.

Councillor R. W. Simpson, M.B., Ch.B., Chairman.

Councillor David Adams, J.P., Vice-Chairman.

The Lord Mayor (Councillor Walter Lee, J.P.)

Alderman Adam Wilson, J.P., F.R.C.S.

„ J. J. Forster, J.P.

„ A. Scott, J.P.

„ Richard Mayne, J.P.

„ Alex. Wilkie, C.H., J.P.

„ John Proctor, J.P.

„ Thomas Cruddis, J.P.

Councillor	W. A. Allan.	Councillor	W. R. Wallace.
„	G. D. Newton, L.R.C.P.	„	W. V. Longfield.
„	W. H. Woodman.	„	John E. Scanlan, J.P.
„	R. J. Thompson, J.P.	„	John Barker.
„	J. C. Doyle.	„	James Smith.
„	Walter Thompson.	„	John Chapman, J.P.
„	Catherine Auld.	„	Wm. Barker Ellis, J.P.
„	H. Benson, J.P.	„	Edward Middleton.
„	W. C. Percival.	„	Geo. Dixon.

MATERNITY AND CHILD WELFARE COMMITTEE.

---

*Councillor JOHN CHAPMAN, J.P., Chairman.

†Mrs. H. BRACKENBURY, J.P., Vice-Chairman.

*Alderman ADAM WILSON, J.P., F.R.C.S.

*Alderman WALTER LEE, J.P. (Lord Mayor).

‡	Councillor	J. G. NIXON.	*	Councillor	DAVID ADAMS, J.P.
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*	,,	W. H. WOODMAN.	*	,,	EDWARD MIDDLETON.
*	,,	R. W. SIMPSON, M.B., Ch.B.	‡	,,	MARY LAVERICK.
*	,,	J. C. DOYLE.	†	Miss	M. M. BUCHANAN, J.P.
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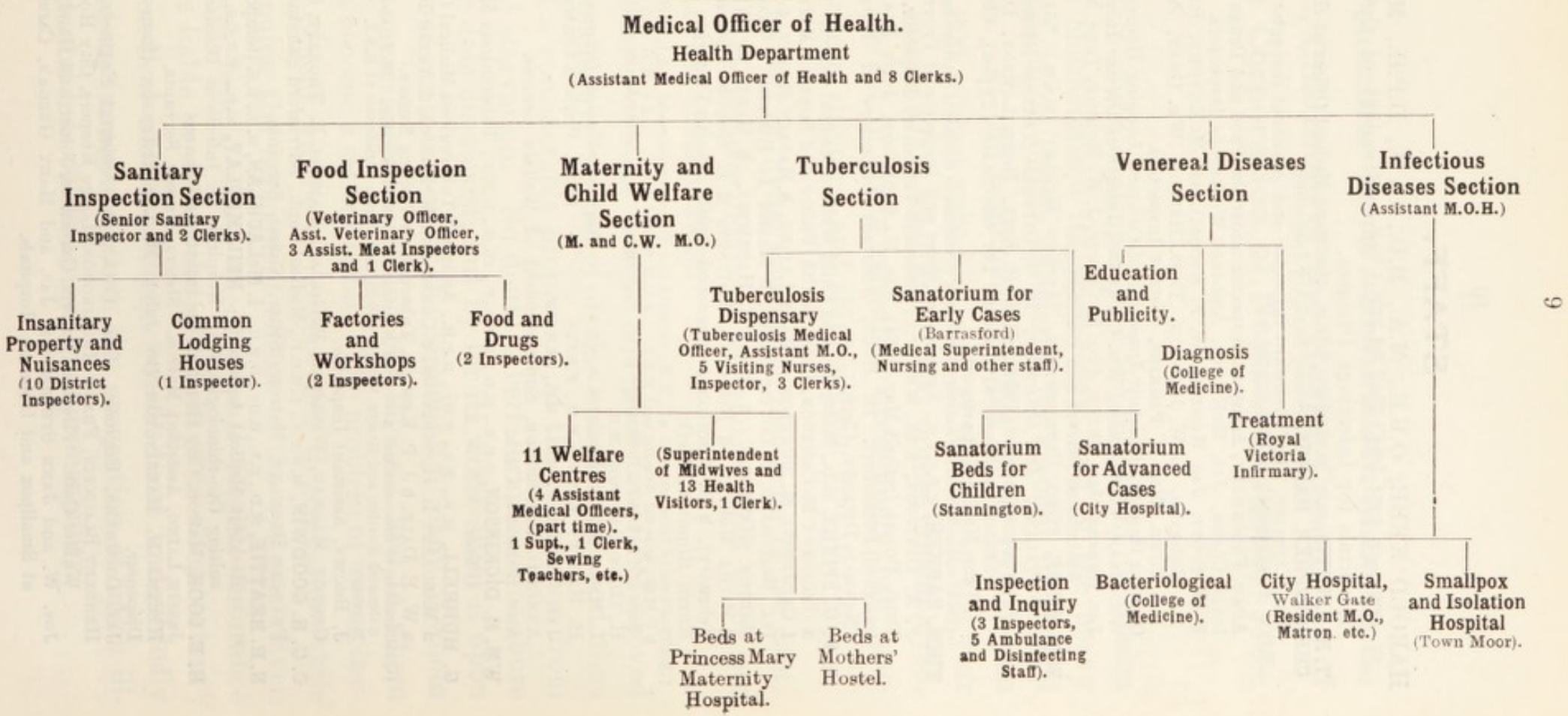
‡	,,	R. S. STEWART.	†	Dr.	R. P. R. LYLE.
*	,,	CATHERINE AULD.	†	Mrs.	J. T. PLATT.
‡	,,	ANTHONY OATES.	†	Miss	G. ROWELL.
‡	,,	CHARLES PILLAR.	†	Dr.	H. L. RUTTER.
‡	,,	H. LOWREY.	†	Mr.	GLADSTONE WALKER.
*	,,	JOHN BARKER.	†	Mrs.	A. J. SHORTT.

* Member of the Health Committee.

† Co-opted member.

‡ Appointed by City Council.

Table showing the various Sections of the Health Committee's work which is under the direct charge of the Medical Officer of Health.



STAFF.

HAROLD KERR, O.B.E., M.A., M.D., Ch.B., D.P.H., Medical Officer of Health and Medical Superintendent of the City Hospitals for Infectious Diseases.

T. N. V. POTTS, M.D., B.S., B.HY., D.P.H., Assistant Medical Officer of Health.

CHRISTOPHER RAIMES, Senior Sanitary Inspector.

WM. CATTLIFF, Chief Assistant Inspector and Assistant Inspector under the Food and Drugs Acts.

ADAM FLOCKHART, Assistant Inspector under the Food and Drugs Acts.

ISAAC CLARK, JAS. MCNICHOL, Assistant Workshops Inspectors.

E. W. SCOTT, JAS. HUNTER, W. F. BACON, JAS. MCKENDRY, RICHARD REDPATH, L. W. JOHNSON, THOS. HESLOP, WM. GRAY, ARTHUR ROWE, WM. E. PERKINS, District Inspectors.

GEORGE HARDIE, Assistant Inspector of Common Lodging Houses.

WM. BEAN, C. R. CRAIG, WM. COCKBURN, Infectious Disease Inspectors.

JAS. ROBSON, JAS. BRUCE, JNO. R. CRAGIE, J. W. ROBSON, THOS. MOORE, Ambulance Drivers and Disinfectors.

WM. MILNE, *GEO. CUTHBERTSON, *ALFRED HEDLEY, M.S.M., *ALEC M. WALKER, JOS. GILHESPY, H. G. OLIVER, TAYLOR RICHARDSON (resigned August, 1924), F. T. H. BELL, ROBT. LAWSON, D. MACPHERSON (commenced August), IVY GOODHALL (Typist), Clerks in the Health Department.

(Those marked * hold the Sanitary Inspectors' Certificate of the Royal Sanitary Institute).

THOS. PARKER, F.R.C.V.S., Veterinary Officer and Inspector of Provisions.

F. A. DAVIDSON, B.SC., M.R.C.V.S., Assistant Veterinary Inspector.

THOS. DODDS (retired May, 1924), JAS. M. ANDERSON, JOHN FLANAGAN (resigned December), D. HOGG, Assistant Inspectors of Provisions.

*NORMAN DICKSON, Clerk.

A. F. G. SPINKS, M.D., Maternity and Child Welfare Medical Officer.

a GEORGINA B. CAMERON, Chief Health Visitor and Supt. of Midwives.

f CATHERINE M. THEXTON, **c** MARY LEVINE, **b** MARIAN MOODY, **c** LIZZIE ISA. PRITCHARD, **c** LOUISE SHELL, **b** MAISIE L. HOPPER, **d** FLORENCE MARTHA HATFIELD, **e** MARY F. HARTWELL, **b** MARY I. WIGHAM, **d** HILDA MORTON, **d** NORAH B. WILLSON, **d** L. GORDON (commenced February), **b** R. JOHNSON (commenced April), Health Visitors.

EDITH RODGERS, Clerk.

(Qualifications of those marked **a** C.M.B., General and Fever Nursing and R.S.I. Certificates. **b** C.M.B., General Nursing and R.S.I. **c** C.M.B. and R.S.I. **d** C.M.B. and General Nursing. **e** C.M.B., General and Fever Nursing. **f** C.M.B., Fever Nursing and R.S.I.)

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a MARGARET L. HUTCHINSON, **c** CONSTANCE M. BAYNE, **d** ANNIE BOOTH, **a** W. E. DALE, **b** J. P. KENMIR, Tuberculosis Visiting Nurses.

(Qualifications of those marked **a** General Nursing. **b** General Nursing, C.M.B. and R.S.I. **c** General Nursing and Health Visitors and School Nurses Certificates of R.S.I. **d** Fever Nursing).

J. BROWN, Assistant Inspector.

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FRANCES BAGULEY, Matron; Sister, Nurses, Servants.

N. R. BEATTIE, M.D., B.S., B.Hy., D.P.H., **I. McLACHLAN,** M.B., B.S. (temporary), Resident Medical Assistants; **NEIL MACLAY,** M.B., F.R.C.S., Consulting Oto-rhinologist, City Hospitals for Infectious Diseases.

H. E. COOK, Matron, City Hospitals for Infectious Diseases.

JESSIE LAING, Assistant Matron. Sisters, Nurses, Servants.

HELENA N. HARRINGTON (to July), M. I. STEPHENSON (from July), Dispenser.

JAS. COCKBURN, Engineer. GEO. COCKBURN, Assistant Engineer.

HERBERT BLACKTIN, FRANK HARRINGTON, Lodge Keepers, City Hospital, Walker Gate. Firemen, Porters, Gardeners, Joiner, and Handyman.

JOS. W. and JANE STEPHENSON, JAS. and MARY GREGAN, Caretakers at Smallpox and Isolation Hospitals.

To Councillor R. W. SIMPSON, M.B., Ch.B., etc., Chairman of the Health Committee of the Corporation of Newcastle-upon-Tyne.

SIR,

1924 saw a continuance of the industrial depression which characterised its predecessor, and of the heavy demands upon public assistance on account of general distress. At the beginning of 1924 about 16,000 men and 1,200 women were idle, and at the end of the year there were 14,000 men and 1,300 women unemployed. The position of trade remained exceedingly bad, particularly in shipping and shipbuilding, and in coal.

The cost of living meanwhile rose from 77 per cent. above the pre-war figure at the end of 1923 to 81 per cent. at the close of 1924.

Unemployment benefit and poor law relief proved the mainstay of many of the out-of-work, and thus saved a considerable proportion of the population from actual starvation. No doubt a certain amount of abuse of the dole does exist, but by far its worst effect is upon the younger members of the community, many of whom have never known anything but idleness, and in whom it has become a settled habit. The problem of unemployment benefit will be to prevent this degeneration while continuing the benevolent effects of the system. Even sickness benefit under the National Health Insurance Act is liable to abuse, though perhaps to a less extent; but medical and maternity benefit have undoubtedly played an immense part in the prevention of much ill-health and loss of efficiency through morbidity.

As a whole, the year has been exceptionally healthy. The general death rate was the second lowest on record, that for 1923 being least. The incidence of tuberculosis showed a slight diminution on the previous year, although not yet quite down to that of 1922.

The Registrar General estimated the **POPULATION** at the beginning of the year to be 285,900, as compared with the Census figure (1921) of 278,400.

The number of **MARRIAGES** in the City during the year was 2,329, as compared with 2,159 in 1923.

The **BIRTH RATE** continues to decline, and amounted to 22·2 per 1,000 population, as against 22·4 in 1923, and is the lowest yet recorded.

The **GENERAL DEATH RATE** was 13·5 deaths per 1,000 population in 1924, as compared with 12·9 in 1923, and was the second lowest ever experienced in Newcastle. As compared with the country generally, Newcastle has a relatively (only) high birth rate. The death rate is, as usual, slightly above that (12·3) for the 105 great towns, and this is probably ascribable to the overcrowded housing conditions which prevail.

The *Natural Increase* of population (births minus deaths) amounted to 2,485.

Climatically the summer was unpleasant, with heavy rainfall and low temperatures for the fourth successive year, which, however, hindered bacterial growth and the breeding of flies, which play so active a part in the distribution of disease germs.

There was little sunshine, and as hitherto, less considerably than was experienced in the neighbouring country districts. Sunshine records have been kept by

Armstrong College at the College, and at Cockle Park, a few miles north of Morpeth, and these are made available by the courtesy of Professors H. Stroud and D. A. Gilchrist. During the year 728 hours of sunshine were recorded at Armstrong College, while there were 1,313 at Cockle Park. Our knowledge of the value of sunshine is steadily growing, and each year we appreciate better the stimulating effect it exerts upon growth and development, particularly in children.

Atmospheric pollution, as measured in the court of the Keelman's Hospital, City Road, amounted to a total fall equivalent to 1 ton 1 cwt. per acre, or 690 tons per square mile per annum. Since the close of 1924 two further gauges have been established, one in the Westgate Cemetery, which is situated in a densely populated residential district of the City, and another in the grounds of the Smallpox Hospital on the Town Moor. The records of these for the first half of the present year (1925) indicate that the annual soot falls in the respective areas are equivalent to 1,000, 430, and 170 tons respectively per square mile. With such records it is not difficult to explain the great shortage of sunshine in our City.

A broad analysis of the causes of death indicates a further rise in those conditions affecting the **Circulatory System** (the heart and blood vessels). These diseases are generally associated with old age, prolonged physical strain, and a certain proportion with old venereal disease and alcoholic indulgence, and are generally characteristic of the later ages of life.

Deaths from **Respiratory Diseases,** while below the average for recent years, are higher than in 1923.

Diseases of the Nervous System, those due to worry and anxiety, show a slight increase upon the previous year, although still 25 per cent. below their incidence in the last two years of the Great War.

Digestive Diseases have taken a decreased toll, deaths from these causes being far below the immediate pre-war figures, which suggests that a general shortage of money, with a consequent limited choice of dietary and restrictions to the plainer and more wholesome kinds of foods, has its compensations.

Cancer once more shows an increased number of deaths, and these amount to 358, which is slightly less than one-tenth of all the deaths in the City. In 122 of these the disease affected the stomach or liver, and in 76 the intestines, that is to say, in more than one-half the part affected was the digestive tract. In 79 cases the part involved was the female genital organs or breast, and in 21 cases some part of the mouth. 169 of the deaths occurred in males and 189 in females. The average age at death was 59 for both men and women.

It is thus seen that cancer continues to make a sinister advance. No doubt, as a result of our great saving of life in the earlier ages, a considerably greater proportion of the population survive to the age of cancer incidence. This, however, does not by any means explain the whole of the increase, and intensive research work is being carried out in every country as to the nature and cause of this tissue over-growth. Once we know that we shall be in a position to determine preventive measures. One factor is undoubtedly chronic irritation, the effect of which, however, may not appear for some considerable time after the cessation of the exciting cause. This factor is seen in certain trades where there is irritation of a particular spot of the skin by continued and frequently

repeated pressure upon a petroleum soaked piece of machinery ; also by the continued irritation of the skin of the scrotum by soot, by the irritation of the tongue produced by smoking a short hot pipe, or by the friction of a jagged tooth. Any such may prove an exciting cause, and should be removed whenever noticed. At present the best chance for the patient is by the earliest possible intervention of the surgeon on the very first appearance of a lump in the breast or any other part of the body, or of any unusual discharge, particularly about, or subsequent to, the change of life.

In connection with a Special Committee of the Ministry of Health, which is studying and collating observations of the disease, from every aspect, a close survey of cancer of the breast has been conducted in Newcastle and other great towns. The data for Newcastle unfortunately suggest that operative treatment is not being resorted to as early as it should be, and on the average later than in other big cities.

In view of the introduction of *insulin* for treatment of **Diabetes,** in the latter half of 1923, it is time now to look for some result as reflected in the death rate from the disease, and it is gratifying to note that there has been a definite decline in 1924, as compared with 1923, from 38 to 26.

Since, however, the deaths in 1922 numbered 28, in 1921, 29, and in 1920, 32, it is evident that we are not yet in a position to hail insulin as an established specific. What we do know is that it supplements a defective function of the body, and it requires continuous administration, so that it cannot be regarded as a cure for the cause. We may hope, however, that the drop in the mortality figures for the present year will be continued and increased.

EPIDEMIC AND INFECTIOUS DISEASE incidence was again very low.

There was a moderately severe outbreak of **Influenza** during the months of January and February, with 71 deaths. The symptoms were generally mild and characterised by a short, sharp prostrating attack, lasting two or three days only, but with high temperature, acute catarrhal symptoms, occasional sore throat, headache, various aches and pains in the body and limbs, and sometimes, in children, gastro-intestinal disturbances. All ages and both sexes suffered.

Warnings and suggestions for evasion of infection were inserted in the press, and managers of all places of public entertainment, of restaurants, and of licensed premises were circularised as to other protective measures to be adopted by them—ventilation, and cleansing of drinking vessels, forks, spoons, etc. All notified cases of pneumonia were seen by the Health Visitors, as usual, and a number of cases were admitted to the wards of the City Hospital, Walker Gate.

There were 3,504 cases of **Measles** notified, just about half the number in 1923, and the deaths were only 61 (1·7 per cent. of notified cases), which is an eloquent testimony to the valuable influence of the Health Visitors. Prior to the systematic visitation of infected houses, in 1914 and 1915 there were 212 and 215 deaths respectively.

Whooping Cough, with 29 deaths, shows the lowest incidence since 1919. What proportion this bears to cases we have no means of knowing, but there is reason to believe that here again the value of the Health Visitors is making itself felt.

Typhus was again entirely absent.

Unfortunately there were five cases of **Smallpox** in the City, all of mild type. This was the first appearance of the disease in Newcastle since 1910, when there were three cases in foreigners, and one death. It is a matter for congratulation that Newcastle escaped infection so long, since the disease has been prevalent for a considerable time past in districts within easy reach of the City.

The infection in all five cases in 1924 originated in the Ashington area, and the patients were all either unvaccinated, or adults over 30 years of age who had not been revaccinated since infancy. There is little doubt that infection must have reached the City time and again, but the fact that the great majority of the people are vaccinated, and that the disease in its present day form is of relatively low infectivity, protected us. About the end of 1923 a brisk vaccination campaign was carried out quietly in the business houses of the City, and at least 21,000 individuals are known to have been vaccinated or revaccinated ; as these are the persons most likely to come in contact with visitors from outside, they have undoubtedly served as a valuable first line of protection.

Since the end of 1924 the disease has become endemic in an area on our immediate borders, where it does not appear to have been regarded seriously, at first at least, and from which there have been repeated infections within the adjacent portion of the City. Prompt action, however, in each instance, has prevented spread of the disease, and so far at least it may be safely said that smallpox has not become endemic in the City. Infantile vaccination, which in 1923 amounted to 70 per cent. of all births, fell in 1924 to 61 per cent., a most unfortunate state of affairs under present circumstances.

Typhoid Fever showed something of a revival ; from 7 cases in 1923, the number rose to 28 in 1924. The origin of infection in the first two was unknown, but all of the remainder were traced to the consumption of ice cream at the coast. The ice cream was found by the Medical Officer of Health of Tynemouth, where, at that time, there were no controlling byelaws for ice cream makers, to have been prepared by a man in whose household there was discovered to be a case of the disease. Eight cases in Newcastle occurred in a single family of nine persons, of whom three died. No other deaths in the City resulted from this disease.

Summer Diarrhœa again shows a gratifying diminution, and there were only 81 deaths : the lowest, with the exception of 73 in 1922, yet experienced.

There is no doubt that the strenuous advocacy of breast feeding by mothers, and the great care and attention given to the question of infant feeding by the Maternity and Child Welfare Section of the Department is largely responsible for this.

Diphtheria and **Scarlet Fever** were again of low virulence. The latter showed a considerable increase in the number of cases with a mortality rate of 0·5 per cent., as compared with 10·8 per cent. in the 'eighties. The diphtheria mortality rate was 6·6 per cent., as compared with over 30 per cent. 25 years ago.

Both diseases are usually so mild that their continuance is due to the difficulty in recognising them, and to their spread by persons who are unaware that they have the infection.

There were no cases of **Food Poisoning.**

Two cases of **Acute Poliomyelitis,** or infantile paralysis, occurred, both of whom recovered, but with a degree of permanent paralysis.

There were five cases of **Cerebro-spinal Fever,** two of whom died, and 96 of **Encephalitis Lethargica** (so-called " sleepy sickness,") 15 of whom died. The clinical type of the latter was of greater severity than in preceding years, and the incidence was mainly in the months of April, May and June. 19 cases were of the lethargic type, 14 of the myoclonic, 6 of myoclonic and lethargic, 10 ocular, 9 Parkinsonian, and 8 cerebral.

The cases occurred for the most part in the poorer quarters of the City, and overcrowding, with its resultant ill-health and poor resistance, were important contributory factors in incidence. It is interesting, however, and of some importance, to note that only in three cases was there evidence of direct transmission to a second member of the same family.

There is a strong presumption that these 96 do not include all the actual cases of the disease, since from information (*via* Sanitary Inspectors and Health Visitors) it was apparent that an appreciable number of mild cases were also occurring, and no medical man was called in. These, of course, would only be slightly ill, and would make a perfect recovery.

In addition to the 96 Newcastle residents there were notified 28 other persons belonging to outside areas, for the most part in the Royal Victoria Infirmary, and of the total 124, 66 were admitted to the City Hospital. Among these there were 30 deaths, and an endeavour was made to obtain the subsequent history of all the survivors. Of the 96 cases 46 were found to be suffering, after an average period of eight months, from some mental or

physical impairment, such as eye trouble, symptoms of neurasthenia or melancholia, excitability and insomnia headaches, definite mental impairment, Parkinsonian syndrome, or vicious temperament, and one committed suicide. It is impossible to say how far all these conditions will remain permanent. It is certain, however, that the majority at least of the 19 cases with mental impairment will continue so for the rest of their lives.

The gravity of the consequences of the disease cannot be exaggerated, since for quite a large proportion of survivors death would be preferable to the condition under which they continue to live, a misery to themselves and a burden to their friends. It is fortunate that at present at least the disease does not exhibit a progressive incidence ; we may regard 1924 as having an outstanding number of cases, and in the present summer there are very few.

Reference is made to **Tuberculosis** under a special heading later.

Hospitals for Infectious Diseases.—There were 1,502 fever patients admitted to the *City Hospital for Infectious Diseases, Walker Gate,* as compared with 991 in the previous year, and there were also admitted 304 cases of pulmonary tuberculosis. The accommodation for tuberculosis patients was increased by 30 beds, from 62 to 92, by the occupation of an outlying emergency pavilion on the fever side.

The Smallpox and Isolation Hospitals were in use from 9th April to 6th June for the accommodation of 29 cases of smallpox from the Newbiggin Urban District, and from the 24th July to 16th August, and from 6th December to the end of the year, by cases from Newcastle.

The good work in connection with the complications of scarlet fever has been continued, Dr. Neil Maclay acting as Oto-Rhinologist. In all 17 per cent. of the total scarlet fever admissions, as compared with 12 per cent. in 1923, developed nose or ear infections, and a feature has been the incidence of mastoid involvement, a more advanced complication than that of the ear. Of these nose and ear cases 42 required operation, and in them the stay in Hospital, subsequent to the development of this complication, was only 14 days, as compared with 24 days in the case of those treated by conservative methods. There is little doubt that but for the operative treatment the majority of these cases would have gone to swell the ranks of that very distressing class of case that suffers from chronic "running ear." This creates a serious problem for the Education Department in the first instance, and too frequently develops deafness, and even grave cerebral complications, later. The advantage of this early thorough treatment to such patients is incalculable, since it saves them pain and anxiety, to say nothing of their hearing in after years, while their parents are spared much worry and expense, often fruitless, in endeavouring to rectify that which might have been put right comparatively easily in the beginning.

The experimental work concerned with prophylactic inoculation of scarlet fever patients against septic complications has also been continued on the lines originally adopted by Dr. S. J. Clegg, the object being to render the patient immune against the possible development of nose or ear discharges. Of 705 patients admitted with scarlet fever, 174 received the inoculation ; 11 (or 6·3 per cent.) subsequently developed nose or ear discharge, while of the remaining 531 patients, 112 (or 21 per cent.) developed

one or other of the complications. The vaccines are renewed periodically from cultures prepared from the throats, noses and ears of patients in the wards, so that the ever changing strains of infecting organisms are represented in the vaccines used. The average stay n hospital for all cases is now 32·5 days, as compared with a fixed minimum of 56 days less than 20 years ago.

Bacteriological Examinations. — 4,829 specimens were submitted for examination by the Department of Bacteriology of the College of Medicine. This is a slight increase on the number for the previous year. 2,037 of these were in respect of diphtheria, tuberculosis, or enteric fever ; 2,005 were for venereal disease ; 514 were of milk ; 189 of water ; and the remaining 84 were special investigations of a varied nature, including virulence tests for diphtheria, examinations of excreta for organisms of the enteric group, and a series of dried milks for their freedom trom tuberculosis and other germs.

The *Disinfecting Stations* at Walker Gate and at the Moor Hospital dealt with 43,456 articles from the City and the Hospitals.

The total amount spent by the Health Department on chemical disinfectants (formalin, izal, etc.), only amounted to £82, of which £11 was for the Hospitals, reliance being placed mainly on efficient steam disinfection of bedding, clothing, etc., and on soap and water, " elbow grease," and fresh air.

The work of the **Venereal Disease** Clinic at the Royal Victoria Infirmary, in the hands of Professor R. A. Bolam, Chief Specialist Medical Officer, indicates a decline from the previous year in the number of persons attending the Clinic, but with a steadily increasing number of attendances per individual from 11 in 1922,

14 in 1923, to 16 in 1924. These two facts together constitute a most hopeful sign, since from all sides there is evidence of decrease in venereal disease, while the larger number of attendances per patient is evidence that the patients themselves are regarding their condition more seriously and making a greater effort to ensure a complete cure. Nevertheless, 43 per cent. ceased to attend before treatment was completed, and of these 540 out of 724 defaulted before their first course of injections was completed. Endeavours to get in touch with patients are extremely difficult, owing to the fact that letters may be opened by other members of the family, or may get into the hands of persons for whom they are not intended; and while personal enquiries are well nigh impracticable, since the patient's condition is usually a secret to himself, these efforts have been reluctantly discontinued until some better method is available.

A weakness that still exists in the preventive machinery is due to the lack of hostel accommodation for infected girls and unmarried mothers, whose circumstances render them unable to obtain and continue treatment.

Special attention is given to the question of venereal infections in the Maternity and Child Welfare Centres, and cases discovered are put into touch immediately with the Clinic.

During the last five years there has been a diminution in the number of deaths of infants certified as due to syphilis from 12 in 1920 to 6 in 1924. During the same years there has been a substantial decrease of notified cases of **Ophthalmia Neonatorum,** usually due to gonorrhœal infection from the mother. 116 cases were reported in 1920, and 55 in 1924.

Of the 255 registered blind persons in Newcastle today, 49 are stated to have been blind from birth, but there are only two blind children under five years old. So much for the results of looking after the eyes of the newly-born and of the notification of ophthalmia.

During the year the Medical Officer of Health gave addresses on venereal disease and other public health subjects to various social bodies.

The four Police Women continued to do valuable work. Their service lay mainly as matrons, in patrol duty in public places, and in detective work in connection with charges of abortion and treatment of disease by unqualified persons.

The **MATERNITY AND CHILD WELFARE** Section (under Dr. A. F. G. Spinks) has again effected useful work. The infant mortality rate during 1924 has once again risen to three figures, being just 100 deaths per 1,000 births. This is the highest since 1920. Analysis of the causes of death indicates a substantial increase in the death rate of children from prematurity to more than one in four of all causes (26·7 per 1,000 births), while congenital defects alone accounted for 18·8 deaths per 1,000 births. The two together thus caused nearly one-half of all the infantile deaths. 27·9 deaths per 1,000 births were due to respiratory diseases, excluding whooping cough, which caused 1·9. It is thus seen that with the exception of the respiratory diseases, which have proved a more or less constant factor for this last 20 years, the chief source of mortality is to be found in causes which affect the child before birth. To meet this difficulty, additional ante-natal sessions were begun in Walker and Benwell during the year, bringing the weekly number up to six. The attendance at these is not of

course what it is at the post-natal sessions, but is nevertheless increasing steadily. It is of little use to have any but a skilful medical officer with special experience in the difficulties of pregnant women, and in that respect we are very fortunate. It also depends to some extent upon the personality of the health visitor for the district as to whether expectant mothers will put in an appearance at the centre. In the great need for adequate attention to this particular class of work, a special effort has been made to interest private practitioners in it and in some of the areas this has been most successful. Much yet remains to be done in regard to the months of pregnancy, and very close attention is being paid to that branch of work by the Department.

Generally speaking, poverty and child wastage go together. The heaviest mortality rate is seen in Stephenson (123), Armstrong and St. Anthony's (121), Walker (116), and St. John's (115) Wards, whereas in Arthur's Hill the figure is again exceedingly low, being only 49, while in Jesmond it is 51.

High birth rates and high mortality rates generally run together, though not always. In 1924, however, Walker had the record of 31·8 births per 1,000 population, with an infantile mortality of 116, while Stephenson, with a birth rate of 27, had a mortality rate of 123. Arthur's Hill and Jesmond, with birth rates of 10·1 and 10·9, had mortality rates of 49 and 51 respectively.

The maternal mortality shows a welcome decrease, and amounts to approximately 2·4 maternal deaths in every 1,000 births, but this, of course, takes no account of the amount of injury, disability and subsequent ill-health that results from child bearing.

The work at the *Welfare Centres* has continued satisfactorily. The two new centres, Walker and Scotswood, proved a success, the attendance at them being amongst the highest in the City.

There are 21 medical sessions per week for babies and 5 for expectant mothers at the 11 centres, and the average attendance at each session (children) is over 45—far too large a number for individual interview by the doctor in a satisfactory manner in the course of a single morning or afternoon. In addition to these medical sessions there are 14 sewing and knitting classes each week at the various centres, for which special teachers are engaged. There were 14 Health Visitors (increased to 18 in 1925).

Of the 7,029 (gross) births which were registered in the City 5,048, (71·8 per cent.) were notified to the Medical Officer of Health. Of these something over one-third were attended by the Princess Mary Maternity and other Hospitals, about the same number by midwives, and the remainder, including probably most of the un-notified births, were attended by medical practitioners. Approximately, therefore, the births are about equally divided between the three classes of practice. Two-thirds of the children born were visited and followed up by the Health Visitors, upon whom is also imposed the duty of paying special visits to every notified case of measles, ophthalmia neonatorum, and pneumonia—no small undertaking in epidemic times.

Appreciative reference should be made here to the excellent work of the ladies who give regular voluntary assistance at the centres, both on weighing and doctor's days, and at sewing classes.

The total number of attendances of mothers with their babies at the welfare centres was above 54,000.

As previously emphasised, welfare centres exist not for the purpose of treating an established disease, but for keeping healthy babies well, and it is notable that among children attending the centres regularly the deaths only amount to a fraction of the proportion for the City as a whole. Babies in need of medical treatment are referred to the family doctor or to an appropriate institution.

In conjunction with the welfare centres dried milk has been distributed, under the closest scrutiny as regards its recipients, to mothers who are themselves entirely unable to provide it for the babies. About 15 tons, equivalent to approximately 20,000 gallons of fresh milk, were given free to 1,622 women and babies, and sanctions for about the same amount at cost price were given to 1,428 persons. The former figure is about the same as in 1923, but the latter shows an increase of nearly 7 tons on the previous year.

The *Princess Mary Maternity Hospital* has more than fulfilled expectations since its opening in November, 1923, and is still extending. It is a voluntary institution, and the closest co-ordination exists between its administration and that of the Health Department, the Medical Officer of Health and the Maternity and Child Welfare Medical Officer both being members of the Honorary Staff, as are also most of the part-time officers employed in the Department's welfare centres. The new welfare centre within the Maternity Hospital, in place of that occupied by the Health Department in hired premises in City Road, was opened in November, and has proved of immense advantage. This brings the work of the Health Department into even closer relationship with that of the Hospital than hitherto.

The *Hostel for Unmarried Mothers* and the two *Day Nurseries* in the East and West End of the City have continued their useful functions in co-operation with the Maternity and Child Welfare Section. The West End Day Nursery now caters rather as a hospital for wasting children than as a nursery, and is also training children's nurses.

Midwifery practice is in fairly reliable hands in Newcastle, the handywoman having almost entirely disappeared. Evidence of this is seen in the low maternal mortality of 2·4 deaths per 1,000 births previously referred to. There are 43 practising midwives in the City, and of these there now only remain 6 registered as having been in *bona-fide* practice before the passing of the Midwives Act. Close association continues between the Superintendent of Midwives (Miss G. B. Cameron) and the midwives, and in addition to her routine visiting and inspection, Miss Cameron has a fortnightly meeting for midwives in the Health Department, when discussions take place and midwives are kept in touch with progress in their craft.

Doctors were sent for by midwives on account of complications or emergencies in 187 instances. 71 claims from doctors for fees, amounting to £112 17s. 0d., in respect of calls for assistance to midwives were received, and one claim for payment of a midwife's fee of 17s. 6d., under the Midwives Act, 1918. Each case is the subject of close investigation by the Health Department.

TUBERCULOSIS.—The past year has seen a very slight rise in the death rate from pulmonary tuberculosis, from 1·10 to 1·12 deaths per 1,000 population, and a decline from 0·36 to 0·35 in deaths from other forms of

the disease. The total tuberculosis death rate was 1·47, as against 1·46 in 1923. This is probably explainable, however, by the fact that for statistical purposes the deaths in 53 weeks were included for calculation of the rates for 1924. It may be taken, therefore, that the progress of the past few years has been maintained, since the death rate in 1917 was 2·0 per 1,000 population, and 30 years ago it was 3·5. A striking feature of the year's experience has been that for the first time the notifications of pulmonary tuberculosis in adult females has exceeded those in adult males.

Perhaps the greatest problem in connection with this disease is that of obtaining cases in a sufficiently early stage to offer reasonable hope of cure. Of the early patients found probably fully 25 per cent. are discovered by the Tuberculosis Medical Officers themselves in the course of examining contacts in the households of known cases. It is only by this method of search amongst persons who have not reported sick that early cases are detectable, for when the average person feels sufficiently ill to invoke medical advice the disease has generally become well established or even advanced. This matter has been brought frequently to the notice of the local practitioners, and there is no question that they are very much alive to it, and that they do notify the cases so soon as they are aware of them. Where, in odd instances, notification is not received until shortly before death, enquiry is always made, and almost invariably it is found that the patient had only just called in the doctor. From this arises the difficulty in keeping the beds at Barrasford Sanatorium in full occupation, whereas there is never any lack of candidates for the Advanced Case Hospital at Walker Gate, the beds in which have been increased during the year from 62 to 92 by the

inclusion of an outlying pavilion on the fever side. In regard to this latter institution it should be clearly stated that it is to be regarded by no means as a home for the dying, since patients of all types go there, including cases for diagnosis and observation. It is the purpose of the institution to serve as a place of preparation for all such cases as are not quite suitable at the moment for treatment at Barrasford, and in fact many such proceed to Barrasford from there. In Barrasford Sanatorium the Committee possess an exceedingly good and well-managed institution, and one that will bear comparison with any sanatorium in the kingdom in its results. If in the majority the cure is not permanent, that is often the fault of the patient's subsequent history rather than of the institution itself. In the 17 years since it was opened, of 1,336 patients admitted, 376 were known to be well, working, or fit to work, at the end of 1924; 104 were improved or moderately well, and some of these date back from the earliest years of the institution.

In the Advanced Case Hospital at Walker Gate good results are also obtained, and the least that can be said about the institution is that with rest, nursing, and good food, a large proportion of the patients improve wonderfully, and are rendered fit to resume work for a further period, and so maintain their families until the younger members are so much the nearer wage-earning age.

At both Barrasford and Walker Gate the X-Ray installations have proved invaluable, both for diagnosis and for use in connection with the operation of pneumothorax, which is largely used for obtaining immobility and arrest of disease in a damaged lung.

The *Tuberculosis Dispensary*, under the immediate charge of the Tuberculosis Medical Officer (Dr. W. H. Dickinson), serves as the general clearing-house for tuberculosis, through which all cases pass for classification and record, and for determination of the appropriate treatment to be given. There is the further advantage now that, since the establishment of the Voluntary Tuberculosis Care Council, whose work is administered largely through the Dispensary, the patients are kept in touch, assisted mentally and materially, and generally heartened in their fight against disease. Such an organisation is invaluable, and well merits the subsidy which it receives from the Health Committee. Its Chairman is the Chairman of the Sub-Committee as to Human Tuberculosis, and the Tuberculosis Medical Officer is an active member, taking a principal part in administering its benefits.

Housing still constitutes one of the greatest difficulties in connection with this disease, and as usual the poorest and most congested wards show the highest prevalence of tuberculosis. The death rate from all forms of the disease was 2·51 per 1,000 population in St. John's, and 1·47 for the whole City, while in Dene Ward it was only 0·69, and in Jesmond 0·73. Over a period of 10 years the average tuberculosis death rate for St. Nicholas' was 2·41, and All Saints 2·43 per 1,000 population, whereas the corresponding figures for St. Thomas' and Jesmond were 0·84 and 0·70 respectively.

Tuberculosis, like other ill-health, means greater poverty, and in the allotment of new houses in the tuberculosis scheme the principle that a prospective tenant shall be able to show that he has sufficient means to pay the rent, and gear with which to furnish the

house, practically bars the tuberculous man from applying. The suggestion is therefore well worthy of consideration that the Health Committee should subsidise persons of this class, otherwise suitable, to enable them to obtain tenancy of a Corporation house. These houses are all planned in such a way as to make them fit homes for consumptives, and certainly infinitely superior in that respect to the generality of the houses originally occupied by them. This at least would seem a more reasonable method than the present one of relying upon sanatorium treatment, and then allowing the benefited individual to revert to the sometimes appalling conditions in which he lived before with the resultant inevitable breakdown.

Tuberculous milk accounts for a considerable proportion of the " other forms " of tuberculosis generally affecting children, and great strides have been made in controlling infection of bovine origin. The death rate from this cause fell from 0·36 per 1,000 population in 1923 to 0·35 in 1924, as compared with three times that figure 25 years ago. This is good reason for encouraging farmers to build up herds that will pass the tuberculin test, and so qualify for the higher price for milk which such a guarantee warrants. As will be seen subsequently, the number of samples of milk found to be tuberculous was again lower than in the previous year, and the effect of this will be evidenced in future years.

The 30 beds held by the Health Committee at *Stannington Sanatorium* have been kept fully occupied by tuberculous children throughout the year. The average stay for the boys was 281 days, for the girls 301 days. Of the 41 patients, 12 were much improved, 27 improved, and two did not respond to treatment.

At *Barrasford Sanatorium*, the Corporation's own institution, 36 of the 90 beds have been in constant occupation by Newcastle cases, and out of 201 total admissions 99 were from Newcastle. The average duration of stay for patients who completed treatment was 131·9 days—nearly 19 weeks: two weeks better than last year, but as emphasised by the Medical Superintendent (Dr. C. G. R. Goodwin), entirely insufficient for cure. There is still unwillingness on the part of the average patient to regard his condition with sufficient gravity, and in spite of advice to the contrary, many patients insist upon leaving the Sanatorium before sufficient treatment has been received, because they feel well, all conscious symptoms having disappeared.

The results of treatment of Newcastle cases were—as estimated at the time of the patients' discharge—fit for work 35, improved 21, no improvement 15, worse 13.

304 cases were admitted to the *Advanced Case Hospital* at Walker Gate, and of these 70 were ex-service men. 42 per cent. were females. The average length of stay was 111 days, *i.e.*, 16 weeks. 165 were improved, 17 were transferred to Barrasford Sanatorium after a stay in the wards, 57 left without improvement, and 63 died in Hospital.

The question is at present under consideration by the Health Committee as to whether the establishment of a workshop is practicable near the Advanced Case Hospital, Walker Gate. The idea of this is that patients returning from Sanatorium might find occupation there, doing joinery work, mending furniture, etc., for different Corporation Departments, and for other bodies, and generally learn to be handymen. For the more active

patients in the Advanced Case Hospital the workshop might provide mental occupation as well as physical, and serve as an antidote to idleness and depression.

The Education Committee's *Open Air School* on the Pendower Housing Estate became an established fact during the year. It is admirably planned and contrived, and will prove an undoubted boon of the first magnitude for restoring and preserving the health of children who are badly run down or are actually in a pre-tuberculous, or early tuberculous, state.

The *Dental Clinics* of the Education Committee constitute an extremely valuable line of defence against access of tuberculosis to the young body.

No provision has as yet been undertaken by the Health Committee for surgical tuberculosis, except in regard to a small number of the children admitted to Stannington Sanatorium. Up to the present surgical cases can only obtain treatment in the general hospitals, where they occupy for long periods quite a considerable proportion of the always insufficient beds, and the question as to what can be done for them is becoming every day more acute. The first responsibility for care of tuberculosis is definitely imposed upon the Municipal Authorities, but in this particular is likely to prove no small thing, since the cost of special provision for surgical cases will be exceedingly heavy.

FOOD AND PROVISIONS. Bovine Tuberculosis.—220 samples of milk were examined for the presence of tubercle bacilli, which were found in seven, or 3·2 per cent. of them. This proportion is the lowest recorded since 1918, when it was 2·9 per cent., and it is a definite improvement upon the figure for 1923, which was 4·5

per cent. The highest recorded was 10·4 per cent. in 1912. The continued suspension of the Milk and Dairies (Consolidation) Act, 1915, and of the Tuberculosis Order, 1914, is a considerable handicap, for under these there is provision, otherwise lacking, for compelling all Local Authorities to carry out inspection and control of cattle, with provision for reasonable compensation for innocent possession of tuberculous animals. The Milk and Dairies Act, 1922, is insufficient in its scope, and so far as Newcastle is concerned is chiefly useful in that it has given the Local Authority power to license dairymen and their dairies.

Since the introduction of the Government Graded Milks there has been a definite stimulation of endeavour in the north of England, and we in Newcastle are proud of the fact that we were amongst the earliest and largest purchasers of "Certified" and "Grade A (Tuberculin-Tested)" milk, which, incidentally, the Health Committee has supplied to the City Hospital for Infectious Diseases. There has been a steady advance in public interest, and the Agricultural Department of Armstrong College is now conducting much local teaching on the farms of the northern counties, and is organising clean milk competitions conducted on a bacteriological basis. These are exceedingly valuable, and are undoubtedly having an excellent effect.

The medical profession has been coming gradually to the conclusion that not only is a large proportion of the tuberculosis of childhood of bovine—that is milk—origin, but that the seeds of very much of the tuberculosis of later life are sown in childhood, and probably from the same source. If this proves correct, it makes it more and more important that the children's milk should be pure and free from tubercle bacilli.

As has been seen, we in Newcastle have been doing our utmost towards this end, but up to the present we are not receiving the support in other districts that is essential if this work is to be thorough. The present system of dealing with milks found to be tuberculous is most unsatisfactory. On receipt of an intimation that a sample has proved tuberculous the producer and the retailer are immediately communicated with, in the former case by telegram, instructing them that they are given 24 hours' notice to have the herd examined by a veterinary surgeon, and suspected cows excluded from it. At the end of twenty-four hours, if a certificate has not been given that this has been done, the milk is to cease coming in to Newcastle. There is little trouble as a rule in getting the herd examined, and in getting the defaulting cows excluded, but as to what becomes of these later neither the Newcastle Authority nor the Local Authority in whose area they are has any knowledge, or power to prevent their sale to someone else, as the law stands at present. Hence our anxiety that the Milk and Dairies (Consolidation) Act, 1915, together with the Tuberculosis Order, 1914, shall come into force as promised on 1st September, 1925. In Scotland, however, the County Medical Officers of Health possess powers that their English colleagues have not got, and are able to hold up supplies and clear herds in a way that is unknown in this country.

The Veterinary Officer and Inspector of Provisions (Mr. Thomas Parker, F.R.C.V.S.), reports that the City now contains 22 cow keepers, occupying 34 cowsheds on 23 premises, with 436 milch cows. This number indicates a further decrease of 48 cows since the previous year. Within a city is no place for cow byres and dairies, although under present circumstances there is

no doubt that those so situated are very much better inspected than in the country. During the earlier part of the year an Assistant Veterinary Officer was appointed for the purpose of closer inspection of the City's dairy herds, in addition to other duties, and in spite of the very heavy call upon the energies of the staff through the epidemic of foot-and-mouth disease, this work was carried out much more thoroughly than hitherto.

Slaughtering is at present carried on in 101 separate premises situated in 15 different localities in the City. It is quite impossible for the staff, even with the additional Veterinary Officer, to carry out complete inspection of every animal killed. Consequently they are dependent upon the good will and integrity of the butchers for information as to carcases noticed to be "not right." There is reason to believe that the great majority of the trade do report these things, but there is also little doubt that there must be many diseased carcases in which nothing wrong is noticed by unskilled slaughtermen. The need, therefore, for a public abattoir is as great to-day as ever.

Owing to the foot-and-mouth disease the number of cattle and sheep exposed in the market were 80,000 fewer than in 1923, sheep being 70,000, and cattle more than 10,000 less. On the other hand, there were 10,000 more pigs on sale. 252 carcases with 2½ tons of meat were seized and condemned during 1924, over one-third being for tuberculosis.

184 food carrying vessels came to the Quayside during 1924, as compared with 182 in the previous year. All imported articles were kept under supervision by Mr. Parker and his staff.

Food and Drugs Adulteration Acts.—The Inspector under the Food and Drugs Acts (Mr. C. Raimes), reports the taking of 1,258 samples for analysis, including 1,010 of milk. Of the latter 550 were rough-tested in the Health Department, and appeared to be genuine. Of the remaining 460 the public analyst (Dr. J. T. Dunn), found 72 to be below the minimal limit fixed by the Sale of Milk Regulations, 1901. Of the 248 samples of food and drugs other than milk, 19 were found to be "not genuine."

36 milk cases were taken to Court and convictions were obtained in 23 of them, with fines aggregating £77; cautions were issued in respect of 28, and no proceedings were taken in the remaining eight cases. There were seven prosecutions for offences other than adulteration, and the fines totalled £3 10s. 0d. These latter are not usually such as are likely to serve as deterrents to the dishonest or culpably careless, but it is satisfactory to note that there is a greater inclination on the part of magistrates to regard offences of this nature more seriously than hitherto.

16 samples of condensed milks were taken under the Public Health (Condensed Milk) Regulations, 1923. Three of these (one an informal sample) were reported as deficient in milk fat. In the two formal samples proceedings were taken, and fines of £3 in each case imposed.

191 samples of milk were examined for evidence of excremental pollution, which was found to an undesirable degree in 107 (or 56 per cent.), as compared with 16 per cent. in the previous year, and 32 per cent. in 1922. The great proportion of dirty milks occurred between June and October, when 83 per cent. were found to be

dirty. This was made the subject of a strong appeal to all farmers in the North of England and South of Scotland known to be sending milk in to Newcastle, and was followed by a notable improvement.

The Medical Officer of Health prepared and circulated to Members of Committee, a handy brochure upon "The Constitution of 'Genuine Pure Milk' and notes on some of the Dairy Products."

Of 25,015 empty churns in course of return by rail examined by the Inspectors, only 54 (or 0·2 per cent.), were found unrinsed, as compared with 0·5 per cent. in 1923, and 2·5 per cent. in 1922, when this requirement was first enforced. Cold water rinsing of the churns is now accepted as a routine procedure by all the dealers in the City, and such single churns as are occasionally found unrinsed have been genuinely overlooked. The clean milk competitions organised by the Agricultural Department of Armstrong College attracted many entrants, and are undoubtedly of great service.

The transport of milk remains unsatisfactory. Much has been done by the Passenger Agent of the London and North Eastern Railway to ensure the cleanliness of the milk wagons. These, however, are not of good design, and are distinctly difficult to cleanse. As a result of representations the Company is now considering the adoption of an improved standard.

There are 279 small shops in which milk is sold with other articles. This represents a slight increase upon 1923, when the number was 271. When the control of milk retail businesses was inaugurated in 1918 the number of small shops selling milk was 668. The majority of these were most unsuitable for their purpose,

and the Milk and Dairies Act, 1922, has certainly had the advantage of greatly strengthening the hand of the Sanitary Authority in the institution of annual licences for milk shops and milk retailers. In addition to the foregoing there are 200 shops selling sterilised milk in sealed bottles. These also are under close supervision and control, and although the conditions of permit are not quite so strict as in the case of loose milk, the premises are fairly satisfactory.

Similar supervision has been exercised over the ice cream trade, both manufacturers and retailers, and the risk of omission of this precaution has been amply demonstrated in the widespread outbreak of typhoid fever which originated from an ice cream manufacterer's premises in a neighbouring area, where the power of control had not existed until then.

In September the Departmental Committee appointed by the Ministry of Health issued its Report on Preservatives and Colouring Matters in Food. It is hoped that this may lead to such action as will put an end to much undesirable dosing of foodstuffs with chemical substances that, in the quantities in which they are continuously absorbed, must exert a depressing effect on health in one direction or another.

Margarine warehouses, bakehouses, restaurant kitchens, and fried fish shops, have all been carefully watched. The last-named was scheduled as an " offensive trade " in Newcastle, permits or refusals being dealt with by Committee.

In 189 samples of water examined for excremental pollution eight were classified by the Bacteriologist as satisfactory, 58 were reported as doubtful, and 123 as

unsatisfactory, cogent proof of the need for the addition to the filtering plant, which was in course of completion by the end of the year. This consists of seven rows, each of seven rapid filtration tanks, capable of dealing with about seven million gallons a day, equivalent to about one-third of the daily supply to the City.

THE HOUSE AND THE WORKPLACE.—Nuisance Abatement.—The Senior Sanitary Inspector (MR. C. RAIMES) still reports great difficulty in getting necessary improvements carried out in houses showing remediable defects. In spite of these difficulties, however, although almost 7,000 notices were served, in only 18 cases (against four owners) had summonses to be applied for, and these were withdrawn on the work being done. This is in accordance with Health Department tradition, force always being regarded as a last resource only.

Very many houses, which by pre-war standards are quite unfit for human habitation, are still occupied, and the shortage of alternative accommodation renders it impossible even yet to undertake closures. In spite of the considerable number of new houses completed since the war there will still be insufficiency for a number of years to come. Further, it is impossible at the present time to compel the repair of many houses, since owners frequently desire their closure, and welcome the threat of issue of a closing order, as that would put the responsibility for eviction of the existing tenants upon the Corporation, whereas the owners cannot evict the tenants because they have nowhere else to go.

The Cleansing and Scavenging services (under the City Engineer) have not yet returned to their pre-war scale, owing to the high cost entailed, but in no case is refuse removal carried out at a greater interval than a week.

Rather better progress has been made in the conversion of dry closets to the water carriage system, and 273 pail closets, 187 cell privies, and 4 midden privies (464 in all) have been removed during the year, together with 82 dry ashpits. There still remain 3,846 of these abominations in the City, and it is the cost of conversion which stands in the way of more rapid sanitation in this direction.

Atmospheric Pollution.—518 observations were made of 110 industrial chimneys, and seven of them showed excessive output of smoke on 13 occasions. There were no prosecutions undertaken, but the representations of the Department were all accepted seriously, and a distinct effort made to prevent a recurrence.

Domestic chimneys probably account for at least two-thirds of the smoke and soot over the City, and the gradual substitution of gas or electricity for the dirty and wasteful soft coal fire in the domestic grate is all to the advantage of the public health and of economy.

A suggestion has been made that a small sum should be included in the rentals of Corporation Estate Houses for the purpose of arranging the periodic cleansing of at least the kitchen chimney by a sweep employed by the Municipality, and avoiding that most objectionable and selfish habit of getting rid of the accumulated soot by setting fire to it. This is apparently becoming the prevalent practice, and the Police appear to be unable to prevent it, although they have the power to prosecute

under the Newcastle-upon-Tyne Improvement Act, 1865, Section 102. One such prosecution has been undertaken as the result of urgent representations by the Medical Officer of Health, but only one, and the offender was fined ten shillings.

Housing.—279 new houses were added to the City's accommodation, namely, 268 erected privately, and four built by the Corporation on the Walker Estate and seven on the Pendower Estate. Some hundreds more were in course of construction under the Corporation's schemes at the end of the year. The houses gained in previous years were 511 in 1923, 523 in 1922, and 305 in 1921, when the first additions since the war were realised. In November, 1924, the City Engineer's Census showed 133 empty houses in the City, as against 244 in August, 1914, and 1,305 at the end of 1912. Overcrowding is the rule, and sub-letting is still rife. There is yet no power to control the cases of heartless profiteering on the part of the exploiters of so-called "furnished lodgings."

Appeals for support in the allocation of Corporation houses are received at the Health Department every day. Many of the cases are well known to the staff, and their present circumstances are of the most harrowing description. Nothing can be done, however, in this Department, and they have merely to be passed on elsewhere.

Disease incidence is undoubtedly associated with housing. In 1924 the death rates were 16·8 per 1,000 population in All Saint's and St. Nicholas' Wards, 16·3 in Stephenson, and 16·2 in St. John's Wards, as compared with 9·3 in St. Thomas', 9·8 in Fenham, and 10·5 in Dene Wards. In St. John's Ward the death rate from all forms of tuberculosis was 2·51 per 1,000 popula-

tion, while in Dene it was 0·69. In Stephenson Ward 123 babies under one year of age died to every 1,000 born, in Armstrong and St. Anthony's 121, whereas in Arthur's Hill the rate was only 49, and in Jesmond 51 deaths of infants per 1,000 births. Over a period of 17 years the deaths of babies in one-room, two-room, and three-room houses have been respectively 141, 120, and 101 per 1,000 births.

Three *Unhealthy Areas* were scheduled under Part I. of the Housing of the Working Classes Act, 1890 ; the Ministry of Health enquiry was held, and the finding of the Ministry has amply justified the action of the Committee. Lower Pilgrim Street, Prudhoe Street, and Liverpool Street were the areas in question, and they were approved for demolition almost exactly as scheduled. These areas comprise 151 (with 10 common lodging houses), 183, and 212 dwellings respectively, and populations of 851, 656, and 702.

Compensatory houses are being provided in Barrack Road (block dwellings), and at Cow Gate at the North West extremity of the Town Moor (self-contained houses and flats).

Accommodation in the *Common Lodging Houses* continued to be sufficient. At the end of the year there were 44 such houses as against 46 at the close of 1923. Ten were in the Lower Pilgrim Street condemned area, and the tenants of these are seeking fresh premises elsewhere. There is still great need of accommodation for single women. By order of the Committee no girl under 19 years of age is admissible to any of the common lodging houses unless accompanied by a parent or responsible guardian. There is little doubt, from abundant evidence, that for the most part, homeless girls occupy

" furnished " rooms in temented houses, too often of undesirable repute, and for these they are usually compelled to pay exorbitant rents by people who are well aware of their means of livelihood. This state of affairs is the strongest possible argument for expedition of special byelaws for supervision and control by the Health Authority of sub-let rooms.

Factories and Workshops, Offices, Places of Amusement and Schools.—9,738 inspections of factories and workshops were made, and 419 notices to remedy defects were served. The homes of outworkers were also kept under observation.

Samples of *Rag Flock* were obtained as usual, and the institution of control of this matter has now rendered it unusual to find material of so filthy and polluted a nature as was previously in common use among mattress makers and upholsterers.

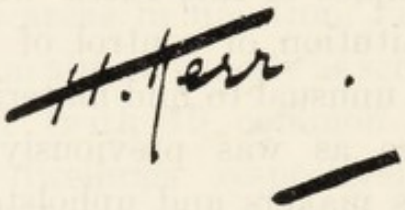
The Temperance Festival was held in June on the Town Moor, in fine weather, and attracted an enormous concourse of people. The sanitary arrangements provided proved grossly inadequate. They consisted of five blocks of pail closets and three trough urinals, also fitted with pails. The containers in every instance were filled almost as soon as the crowd arrived on the ground, and were usually upset at an early stage of the proceedings, so that the soil in their vicinity became grossly polluted. The arrangements in future are to be subject to the approval of the Health Department. Further difficulty at the Festival has been the letting of sites to retailers of food, including milk and ice cream, who frequently came from outside areas, where they were under no control. In future they also are to be under the supervision of the Health Department.

Acknowledgments.—Of the work of all the members of the staff I desire to record my warm appreciation. Each one has done his or her duty to the full, and it is only with such colleagues that one can look for success in one's endeavours.

To yourself, Sir, and to the Members of the Committee, I would record my gratitude for much kindness, and for your eagerness to forward whatever is for the well-being of the community.

I have the honour to be, Sir,

Your obedient Servant,



M.D.,
Medical Officer of Health.

Health Department,
Town Hall,
Newcastle-upon-Tyne,
11*th June*, 1925.

CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

Health Report, 1924.

I.—GENERAL.

MORTALITY TABLES,
SOCIAL CONDITIONS, CLIMATOLOGY,
WATER SUPPLY, DISPOSAL OF REFUSE.

Population, Birth Rate, and Special Mortality Rates during the period of the Notification of Infectious Diseases.

Year	Population	Birth Rate	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

GENERAL STATISTICS.

POPULATION.—As estimated by the Registrar General at the middle of the year 1924—**285,900.**

RETURN SHEWING THE ESTIMATED POPULATION OF THE DIFFERENT WARDS IN THE CITY, ACREAGE, POPULATION PER ACRE, ETC.

Ward.	Population	Gross Area in acres	Less for Open Spaces in acres.	Nett Area in acres.	Population per acre, gross.	Nett.
St. Nicholas'	3,582	127	1	126	28	28
St. Thomas'	14,849	1,636	1,115	521	9	28
St. John's.....	15,925	169	1	168	94	94
Stephenson	19,934	215	..	215	93	93
Armstrong	16,483	178	31	147	93	112
Elswick.....	13,062	253	17	236	52	55
Westgate	16,103	90	1	89	179	181
Arthur's Hill	10,080	142	6	136	71	74
Benwell	20,375	550	29	521	37	39
Fenham	12,262	1,189	..	1,189	10	10
All Saints'	18,102	176	2	174	103	104
St. Andrew's	13,111	173	3	170	76	77
Jesmond	10,857	441	33	408	24	27
Dene	12,970	818	88	730	16	18
Heaton	14,914	225	27	198	66	75
Byker	18,215	140	..	140	130	130
St. Lawrence	20,481	181	7	174	113	118
St. Anthony's	17,484	601	..	601	29	29
Walker	17,111	1,149	34	1,115	15	15
CITY	285,900	8,453	1,395	7,058	34	40

INHABITED HOUSES.—60,607 inhabited houses, which, on the estimated population, shows an average of 4·7 persons per dwelling.

RATEABLE VALUE.— £1,989,481. A penny rate produced £7,703.

SOCIAL CONDITIONS.—The principal **Trades and Occupations** are of a healthy nature, being generally engineering and machine making; conveyance of men, goods, and messages; building and works of construction, *e.g.*, ship building; and connected with ships and

boats, sea-faring and harbour work; food, tobacco, drink, and lodging; coal and shale mines; and commercial or business occupations.

The amount of **Poor Law Relief** granted during the year ended 31st March, 1924, was £333,982 for outdoor relief, and £37,877 for indoor maintenance, making a total of **£371,859,** as compared with **£428,921** in the previous year.

The number of registered unemployed fell from 17,469 at the beginning of the year, to 15,697 at its close.

The City contains many **Hospitals** and other medical charities, but since wide surrounding districts are also served by them, figures as to patients treated are not of local value.

MARRIAGES.—2,329 marriages took place during the year, as compared with 2,159 in 1923, and 2,234 in 1922.

BIRTHS.—6,335, equivalent to a rate of 22·2 per 1,000 population.

DEATHS.—(All causes)—4,607, equivalent to an uncorrected rate of 16·1 per 1,000 population, and, after deduction of the deaths of 929 non-citizens, and addition of 172 Newcastle residents who died elsewhere, to a corrected rate of 13·5 per 1,000 population, the second lowest on record. In 1923 the death rate was 12·9.

15 deaths were uncertified (cancer, 1; apoplexy, 1; paralysis, 1; valvular disease of the heart, 2; hæmorrhage from lungs, 1; jaundice, 1; premature birth, 2; debility from birth, 1; old age, 3; heart failure, 2.)

13 *Orders for Burial* (Newcastle-upon-Tyne Improvement Act, 1882, Sec. 47) were given, 4 being in respect of bodies lying in inhabited rooms, and 9 being cases from hospital.

TOTAL DEATHS DURING RECENT YEARS FROM CERTAIN CLASSES OF DISEASE.

Classification in Table III. of Ministry of Health.

	II. Nervous System.	III. Circulatory.	IV. Respiratory.	V. Digestive.	XIII. External Causes.
1912	410	435	603	204	152
1913	457	453	722	332	114
1914	448	505	863	465	142
1915	470	635	873	361	163
1916	477	448	856	281	117
1917	497	478	864	268	135
1918	498	503	957	252	135
1919	439	497	1,040	272	133
1920	384	534	861	275	124
1921	347	581	726	297	113
1922	363	689	913	181	92
1923	363	623	623	219	112
1924	376	667	749	206	110

INFANTILE MORTALITY.—632 infants died before completing the first year of life, representing a rate of **100** deaths per 1,000 births.

ZYMOTIC DEATH RATE.—There were 195 deaths from the " Chief Zymotic Diseases "—smallpox, measles, scarlet fever, diphtheria, whooping cough, fever (typhus, simple continued, and enteric) and diarrhœa (all ages)—equivalent to 0·68 deaths per 1,000 population.

TUBERCULOSIS.—421 persons died from various forms of tuberculosis, 322 being from pulmonary, and 99 from other forms. The equivalent death rates are *All Forms* 1·47, *Pulmonary*, 1·12, and *Other Forms than Pulmonary* 0·35 per 1,000 population.

For comparison of death rates with previous years see large table page 48A.

For particulars of deaths, as to site of disease, age, etc., see table, page 58A.

GEOLOGY.—The geological formation of the area consists of heavy clay on the top of hard sandstone, which overlies coal seams.

CLIMATOLOGY.—The following information is supplied by the courtesy of the "North Mail and Chronicle":—

The mean barometer reading was 29·72 in.

The mean maximum temperature was 67·0° F.; and the mean minimum 31·1° F.

There was again a confusion of the seasons. The winter was not in any way severe, but there was practically no summer, and generally in what are called the summer months of the year the conditions were cold and wet.

The feature of the year was the heavy rainfall. Rain fell on no fewer than 170 days; and the total rainfall for the year reached 33·92 inches, against an average of 27·98 inches, showing an extraordinary excess of 6·03 inches for the twelve months. It was one of the wettest years in Newcastle, for it passed all records for thirty years.

The wettest month was July, with a total rainfall of 6·15 inches, against an average of 3·52 inches, showing a surplus of 2·63 inches. But July was closely followed by May, with a total rainfall of 5·02 inches. As its average (1·75 inches) was exceeded by 3·27, May had a greater excess than July. The wettest day was June 1st, when 2·16 inches of rain fell. The day before, May 31st, the rain gauge recorded a fall of 1·83 inches, so that on these two days the extraordinary quantity of 3·99 inches of rain descended on the City, causing serious floods.

The driest month was March, with a rainfall of only 0·93 inches, showing a deficiency of 1·70 inches, as compared with the average.

As usual, westerly winds were prevalent, and the following table shows the frequency of the directions :—

W.	on 91	days.
N.W.	on 29	,,
S.W.	on 67	,,
N.	on 14	,,
E.	on 34	,,
S.E.	on 29	,,
N.E.	on 15	,,
S.	on 32	,,

Cockle Park and Armstrong College.

Sunshine records have been available by the courtesy of Professors H. Stroud and D. A. Gilchrist, of Armstrong College. The observations are taken at Cockle Park Farm (some miles north of the City, and in a rural area), and at the College itself. During the year 728 hours of sunshine were registered in the City, as compared with 1,313 at Cockle Park.

WATER SUPPLY.—The City is served by the Newcastle and Gateshead Water Company with a plentiful supply of pure upland surface water, collected from large catchment areas at Catcleugh, close to the Cheviots, and in lower Northumberland.

It is stored in large impounding reservoirs at Catcleugh, Hallington, and Whittle Dene, and passes through sand filters at Whittle Dene and Throckley.

In the vast majority of cases the household taps are served directly from the mains without intervening cisterns.

A separate trade supply is piped to some of the great riverside works from a point above the filters.

The bacteriological reports upon the water are given on page 126.

For a number of years past these have been by no means satisfactory, owing to the fact that the consumption of water has exceeded the capacity of the filters for adequate purification. During the year under report the Water Company completed a scheme for supplementing its existing filter beds by a great battery of forty-nine rapid filtration drums, sufficient to deal with seven million gallons of water per diem. These will relieve the pressure upon the present filters, since they will account for approximately one-third of the total daily consumption, and should be adequate for some time to come.

SEWERAGE.—There are 292 miles and 844 yards of sewers discharging directly into the Tyne, which is tidal, at various points along the seven miles of river frontage.

CLEANSING AND SCAVENGING.—With the exception of certain areas, the ashbins are now only emptied once per week instead of twice. With the prevailing high costs it is improbable that the frequency of removal can be increased.

There are 54,742 dry ashtubs and galvanised iron bins, and 54,148 water closets and 3,846 conservancy system closets in the City. Conversion of the latter was proceeding steadily up to the outbreak of war, at the rate of 600 to 700 per annum. During 1924, 273 pail-closets, 187 cell privies and 4 midden privies were removed and water closets substituted. All the schools are served by the water-carriage system.

ADOPTIVE AND LOCAL ACTS IN FORCE.

Adopted Acts.—Infectious Disease (Prevention) Act, 1890. Section 4.

Public Health Acts Amendment Act, 1890.—Part III—Whole of; Part IV.—Whole of.

Public Health Acts Amendment Act, 1907.—Part II.—Sections 20, 22, 23, 26, 27, 28, 29, 30, 31, and 33; Part III.—Sections 34, 35, 36, 37, 38, 43, 45, 48, 49, 50 and 51; Part IV.—Sections 52, 53, 56, 58, 59, 61, 62, 63, 64, 65 and 68; Part X.—Whole of.

Local Acts.—Newcastle-upon-Tyne Improvement Act, 1837.
,, ,, 1846.
,, ,, 1853.
,, ,, 1865.
,, ,, 1870.
,, ,, 1882.
,, ,, 1892.
Newcastle-upon-Tyne Tramways and Improvement Act .. .. 1899.
Newcastle-upon-Tyne Corporation Act .. 1911.

VITAL STATISTICS, YEAR 1924.

COMPARISON WITH OTHER DISTRICTS.

DISTRICT	Birth Rate.	General Death Rate.	Infantile Mortality Rate.	Death Rate per 1,000 from Enteric Fever, Smallpox, Scarlet Fever, Measles, Whooping Cough, and Diphtheria	Tuberculosis (all causes) Death Rate.
England and Wales	18·8	12·2	75	0·31	†
105 Great Towns (includ. London)	19·4	12·3	80	0·42	†
NEWCASTLE-UPON-TYNE	**22·2**	**13·5**	**100**	**0·39**	**1·47**
Hull	22·5	13·5	86	0·40	1·30
Leeds.....	18·1	14·3	108	0·39	1·40
Bradford	17·0	14·6	96	0·34	0·97
Sheffield	18·7	11·7	88	0·36	1·01
Manchester	19·1	13·9	100	0·77	1·48
Salford	19·3	14·7	123	0·94	1·54
Liverpool	24·6	13·6	103	0·55	1·50
Nottingham	19·3	13·0	84	0·21	1·17
Leicester	18·1	12·1	79	0·24	1·43
Stoke-on-Trent	23·7	13·5	101	0·80	1·10
Birmingham	19·2	11·6	83	0·41	1·10
Cardiff	21·6	12·1	78	0·40	1·52
Bristol	18·7	12·8	72	0·25	1·16
Portsmouth	20·4	12·5	66	0·36	1·18
London (County).....	18·6	12·2	69	0·56	1·16
Gateshead.....	24·6	14·2	103	0·34	1·80
South Shields	24·3	14·5	102	0·29	1·62
Tynemouth	23·1	13·6	86	0·10	1·65
Sunderland	25·9	15·0	101	0·26	1·42
Middlesbrough	26·5	16·8	135	0·93	1·75
*County of Northumberland	22·1	12·0	82	0·23	1·13
*County of Durham	25·6	12·5	95	0·37	1·18

* Administrative County. † Not available.

TABLE I. OF MINISTRY OF HEALTH.

Vital Statistics of Whole District during 1924 and previous Years.

Year.	Population estimated to Middle of each Year.	Births.			Total Deaths Registered in the District.		Transferable Deaths		Nett Deaths belonging to the District.			
			Nett.						Under 1 Year of Age.		At all Ages.	
		Uncorrected Number	Number	Rate.	Number	Rate.	of Non-residents registered in the District.	of Residents not registered in the District.	Number	Rate per 1,000 Nett Births	Number	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1906	257,113	8,210	..	..	4,831	18·8	..	..	..	..	..	..
1907	259,082	8,093	..	..	4,594	17·7	..	..	..	..	..	..
1908	261,065	8,382	..	..	4,801	18·4	..	..	..	..	..	..
1909	263,064	7,682	..	..	4,459	16·9	..	..	..	..	..	..
1910	265,077	7,543	..	..	4,252	16·0	..	..	..	..	..	..
1911	267,261	7,089	7,082	26·5	4,667	17·5	448	165	973	137	4,384	16·4
1912	269,193	7,219	7,194	26·7	4,221	15·7	529	146	727	101	3,838	14·5
1913	271,295	7,480	7,460	27·5	4,611	17·0	560	141	908	122	4,192	15·5
1914	271,523	7,564	7,538	27·8	5,069	18·7	546	138	1,029	137	4,660	17·2
1915	278,107	7,575	7,545	27·8†	5,257	18·9	693	207	1,007	133	4,771*	17·2*
1916	278,107	7,332	7,248	26·2	4,875	17·5	680	232	899	123	4,427*	15.9*
1917	278,107	6,548	6,495	23·4	4,646	16·7	718	246	732	113	4,174*	15·0*
1918	278,107	6,555	6,468	23·3	5,380	19·3	872	308	692	107	4,816*	17·3*
1919	275,099	6,793	6,674	23·3§	5,358	19·5	737	234	806	120	4,855*	17·6*
1920	286,061	8,433	8,070	28·0‡	4,609	16·1	779	195	817	101	4,025	14·0
1921	278,400	7,720	7,284	26·2	4,602	16·5	817	142	699	96	3,927	14·1
1922	281,600	7,432	6,987	24·8	4,698	16·7	831	145	646	92	4,012	14·2
1923	283,800	6,961	6,367	22·4	4,298	15·1	789	150	623	98	3,659	12·9
1924	285,900	7,029	6,335	22·2	4,607	16·1	929	172	632	100	3,850	13·5

Area of District in acres (exclusive of area covered by water) 8,453.

Total population at all ages at census 1921, 278,400.

† In accordance with the instructions of the Supt. of Statistics, General Register Office, Somerset House, this rate is calculated on the population for 1914. * Civilians only.

§ Calculated on a population of 286,571. ‡ Calculated on a population of 287,255.

Corrected Death Rates in different Wards, 1924.

St. Nicholas'.	St. Thomas'.	St. John's.	Stephenson.	Armstrong.	Elswick.	Westgate.	Arthur's Hill.	Benwell.	Fenham.	All Saints'.	St. Andrew's.	Jesmond.	Dene.	Heaton.	Byker.	St. Lawrence.	St. Anthony's.	Walker.
16·8	* 9·3	16·2	16·3	14·1	13·9	12·1	* 10·5	9·7	9·8	* 16·8	15·0	12·0	10·5	12·5	16·4	14·4	12·8	* 15·4

* All deaths occurring in Public Institutions have been allotted to the Wards to which they properly belong

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TABLE II. OF MINISTRY OF HEALTH.

(*See under* **INFECTIOUS DISEASES,** *page 91*).

TABLE IV. OF MINISTRY OF HEALTH.

See under **INFANTILE MORTALITY** *page 62a*).

TABLE III. OF THE MINISTRY OF HEALTH.

Returns of Deaths from "All Causes" during the 53 Weeks ended 3rd January, 1925.

Cause of Death.	Age Periods. Gross. Under 1 year.	1 year and under 2.	2 years and under 5.	5 years and under 15.	15 years and under 25.	25 years and under 45.	45 years and under 65.	65 years and above.	Total (Gross).	Net. Under 1 year.	1 year and under 2.	2 years and under 5.	5 years and under 15.	15 years and under 25.	25 years and under 45.	45 years and under 65.	65 years and above.	Total (Net).	Wards—Net Deaths. St. Nicholas'.	St. Thomas'.	St. John's.	Stephenson.	Armstrong.	Elswick.	Westgate.	Arthur's Hill.	Benwell.	Fenham.	All Saints'.	St. Andrew's.	Jesmond.	Dene.	Heaton.	Byker.	St. Lawrence.	St. Anthony's.	Walker.	Transferable Deaths. Inward.	Outward.	Deaths in the Institutions in the City of "Residents" or "Non-Residents."
I.—GENERAL DISEASES.																																								
Enteric Fever	..	..	..	1	1	1	..	..	3	..	..	..	1	1	1	..	..	3	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
Malaria	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	1	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Measles	7	25	25	2	..	..	..	..	59	7	25	26	3	..	..	..	..	61	1	..	9	5	1	..	1	..	1	2	17	2	..	..	1	6	9	4	2	2	..	13
Scarlet Fever	..	1	..	2	1	1	..	..	5	..	1	..	1	1	1	..	..	4	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	..	..	..	1	5
Whooping Cough	11	10	6	2	..	..	..	..	29	12	9	6	2	..	..	..	..	29	1	..	1	2	2	1	3	1	1	1	4	3	..	..	1	2	3	..	3	1	1	5
Diphtheria	..	4	11	5	..	..	1	..	21	..	3	9	4	..	..	1	..	17	..	1	2	3	2	..	1	1	2	..	..	1	..	..	..	1	1	1	1	..	4	18
Croup	1	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Influenza	9	11	4	6	6	13	28	33	110	9	11	4	6	5	12	27	31	105	1	8	5	13	5	8	1	1	4	3	8	7	5	5	8	6	4	6	7	..	5	7
Erysipelas	2	..	..	..	1	..	..	2	5	..	..	..	..	1	..	..	2	3	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	2	4
Pyaemia, Septicaemia	1	..	..	..	..	..	1	..	2	1	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Actinomycosis	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Pulmonary Tuberculosis (not acute)	1	2	4	16	49	122	56	7	257	1	2	3	14	51	120	54	6	251	3	8	16	24	13	16	12	7	13	11	20	10	4	7	10	18	25	16	18	10	16	107
Phthisis (not defined as Tuberculosis)	..	..	..	..	8	34	20	3	65	..	..	..	..	9	31	20	3	63	..	2	12	2	4	2	2	3	2	2	4	4	2	1	2	3	5	5	6	1	3	21
Acute Phthisis	..	..	..	1	2	5	1	..	9	..	..	..	1	2	4	1	..	8	..	..	..	2	1	..	2	..	1	..	..	..	..	..	1	..	1	..	..	..	1	1
Acute Miliary Tuberculosis	..	1	1	5	1	5	..	..	13	..	1	..	5	1	1	..	..	8	..	2	..	1	..	1	..	..	..	..	..	..	1	1	..	..	..	..	2	..	5	9
Tuberculous Meningitis	7	7	12	21	6	4	..	..	57	6	3	5	15	2	..	..	..	31	..	..	5	2	2	1	2	1	..	1	3	2	..	..	..	5	2	5	..	..	26	44
Tuberculosis of Peritoneum and Intestines	5	4	7	6	10	5	3	..	40	3	3	5	6	7	2	3	..	29	..	..	4	2	3	1	3	1	1	1	2	1	..	..	1	1	2	1	5	1	12	19
Tuberculosis of Spinal Column	..	..	..	1	1	..	3	..	5	..	..	..	1	..	..	2	..	3	..	1	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	4
Tuberculosis of Joints	..	..	..	2	3	..	2	..	7	..	..	..	2	2	..	1	..	5	..	..	1	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	2	..	2	4
Tuberculosis of other Organs	..	1	..	2	2	2	1	..	8	..	..	..	1	2	1	1	..	5	1	..	1	..	1	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	3	6
Disseminated Tuberculosis	..	1	4	6	5	3	3	..	22	..	1	3	6	5	1	2	..	18	..	..	..	3	1	2	1	..	2	..	..	..	1	..	..	4	1	2	1	1	5	15
Total Tuberculosis	13	16	28	60	87	180	89	10	483	10	10	16	51	81	160	84	9	421	4	13	40	37	25	24	22	12	21	15	29	19	8	9	14	31	36	30	34	13	75	230
Rickets, Softening of Bones	3	3	1	..	..	..	..	..	7	3	3	1	..	..	..	..	..	7	..	..	2	1	..	..	2	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..
Syphilis	7	..	..	..	..	8	7	1	23	6	..	..	..	..	3	3	1	13	..	..	2	1	..	1	..	2	3	..	1	1	..	..	..	1	..	1	..	..	10	16
Cancer of the Buccal Cavity	..	..	1	..	1	1	11	8	22	..	..	1	..	1	1	10	8	21	1	..	..	1	2	1	3	..	..	..	1	1	1	..	1	4	2	..	3	1	2	8
Cancer of the Stomach, Liver, etc.	..	..	..	..	3	22	88	48	161	..	..	..	..	2	14	62	44	122	3	4	5	6	10	3	12	5	3	5	3	8	4	4	9	14	8	6	10	3	42	59
Cancer of the Peritoneum, Intestines and Rectum	..	..	..	..	1	10	58	40	109	..	..	..	..	1	7	36	32	76	2	3	4	3	3	3	2	3	5	5	9	6	3	5	7	6	3	2	2	1	34	57
Cancer of the Female Genital Organs	..	..	..	..	..	5	34	7	46	..	..	..	..	..	4	36	6	46	..	..	3	4	2	2	1	4	6	1	5	..	3	1	3	1	3	5	2	4	4	13
Cancer of the Breast	..	..	..	..	..	6	20	11	37	..	..	..	..	..	6	17	10	33	..	1	..	1	1	1	..	1	..	4	2	2	..	6	3	2	3	2	4	..	4	11
Cancer of the Skin	..	..	1	..	..	..	2	1	4	..	..	1	..	..	..	2	1	4	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	2	..	..	..	..	..	2
Cancer of other or unspecified Organs	..	..	..	..	1	6	37	20	64	..	..	..	..	2	6	31	17	56	..	1	1	4	5	2	1	3	2	3	2	7	2	2	4	5	5	4	3	2	10	34
Other Tumours (situation undefined)	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1
Rheumatic Fever	..	..	1	7	1	5	1	2	17	..	..	1	4	1	4	1	2	13	..	..	2	1	..	1	..	1	1	1	..	..	1	1	1	1	..	1	1	..	4	6
Chronic Rheumatism, Osteo-Arthritis	..	..	..	1	..	..	..	1	2	..	..	..	..	..	..	..	1	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Diabetes	..	..	..	..	..	11	12	16	39	..	..	..	..	..	6	7	13	26	..	..	3	..	1	2	2	..	3	1	..	1	1	2	3	2	3	1	1	1	14	22
Exophthalmic Goitre	..	..	..	..	3	3	2	..	8	..	..	..	..	..	1	2	..	3	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	1	..	..	5	5
Addison's Disease	..	..	..	..	..	1	1	..	2	..	..	..	..	..	..	1	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Leucocythaemia, Lymphadenoma	1	..	2	1	3	8	..	2	17	1	..	2	..	1	4	..	2	10	..	..	..	2	1	..	1	..	1	..	1	1	1	1	..	..	..	..	1	..	7	10
Anaemia, Chlorosis	..	2	1	1	2	7	9	1	23	..	2	1	..	1	6	6	1	17	1	..	1	1	1	1	2	..	2	..	2	1	2	..	..	1	1	..	1	..	6	10
Other General Diseases	2	1	..	3	1	1	..	..	8	2	..	..	3	..	..	..	..	5	2	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	3	3
Alcoholism	..	..	..	..	..	1	..	1	2	..	..	..	..	..	1	..	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..
II.—DISEASES OF NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.																																								
Encephalitis	1	..	4	3	8	7	5	..	28	1	..	3	1	5	4	2	..	16	..	1	..	..	1	1	4	..	1	..	..	1	2	1	..	..	2	2	..	1	13	23
Cerebro-Spinal Fever	..	..	..	..	..	1	1	..	2	..	..	..	..	..	1	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	1
Meningitis, other forms or undefined	10	1	1	5	3	2	3	..	25	8	1	1	4	2	2	2	..	20	1	1	2	2	2	..	1	..	1	..	2	..	1	1	..	..	1	2	3	1	6	9
Locomotor Ataxy	..	..	..	..	..	3	6	2	11	..	..	..	..	..	2	6	2	10	1	1	1	1	1	..	..	..	..	..	..	1	1	..	..	1	2	..	..	..	1	7
Other Diseases of the Spinal Cord	..	..	..	..	2	8	11	6	27	..	..	..	..	..	5	11	6	22	..	..	2	3	1	1	..	..	3	..	..	..	1	..	3	..	4	2	1	..	5	14
Cerebral Haemorrhage, Apoplexy	..	..	..	..	1	4	72	99	176	..	..	..	..	1	2	71	96	170	1	8	7	18	11	13	1	10	9	4	11	12	12	10	7	13	10	8	5	3	9	50
Softening of the Brain	..	..	..	1	..	1	1	7	10	..	..	..	..	..	..	1	9	10	..	..	1	2	2	3	..	..	..	..	..	..	1	..	1	..	..	..	..	2	2	3
Hemiplegia	..	..	..	..	..	..	2	7	9	..	..	..	..	..	..	2	7	9	..	..	..	2	..	..	..	..	1	..	..	..	..	..	1	..	1	..	4	..	..	..
Paraplegia	..	..	..	1	..	..	..	..	1	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1
Other Forms of Paralysis	..	..	..	..	..	1	..	2	3	..	..	..	..	..	1	..	3	4	..	..	..	..	..	..	1	..	1	..	..	..	1	..	1	..	..	..	..	1	..	..
General Paralysis of the Insane	..	..	..	..	..	..	..	1	1	..	..	..	..	1	8	12	2	23	..	2	1	4	..	..	5	1	1	2	2	..	..	1	..	2	1	..	1	22	..	..
Other forms of Mental Alienation	..	..	..	..	..	3	2	..	5	..	..	..	..	..	3	2	..	5	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	1	1	1	..	..	..	4
Epilepsy	..	..	1	1	4	3	..	1	10	..	..	1	2	4	4	2	1	14	..	1	3	2	..	1	..	1	..	1	1	..	..	..	1	..	1	1	1	5	1	3
Convulsions (5 years and over)	..	..	..	2	..	..	..	..	2	..	..	..	2	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..
Convulsions with Teething (under 5 years)	4	2	1	..	..	..	..	..	7	4	2	1	..	..	..	..	..	7	..	1	1	1	..	..	..	..	..	1	1	..	..	..	..	..	1	1	..	..	..	..
Other Infantile Convulsions (under 5 years)	26	1	1	..	..	..	..	..	28	26	..	1	..	..	..	..	..	27	..	1	1	1	5	..	..	1	3	..	4	..	..	..	2	..	2	1	6	1	1	2
Chorea	..	..	..	..	1	1	..	..	2	..	..	..	..	1	1	..	..	2	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	2
Hysteria, Neuralgia and Neuritis	..	..	..	..	..	..	2	2	4	..	..	..	..	..	..	2	2	4	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	1	..	1	..	..	..
Other Diseases of the Nervous System	4	2	1	5	2	4	5	..	23	4	1	..	3	2	2	5	..	17	..	1	..	3	1	..	2	..	..	..	3	2	2	2	..	1	..	..	..	5	11	15
Mastoid Disease	..	1	..	3	3	1	1	..	9	..	1	..	3	2	1	1	..	8	..	2	..	..	..	..	..	1	1	..	1	1	1	..	1	..	..	..	..	..	1	5
Other Diseases of the Ears	2	1	1	5	4	2	1	..	16	1	..	..	1	1	..	..	..	3	..	..	..	..	..	..	1	..	..	..	2	..	..	..	..	..	..	..	..	..	13	15
III.—DISEASES OF CIRCULATORY SYSTEM.																																								
Pericarditis	..	..	..	..	..	1	2	..	3	..	..	..	..	..	1	2	..	3	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..
Acute Endocarditis	..	..	..	..	3	16	11	1	31	..	..	..	..	2	6	10	1	19	..	..	..	2	1	1	1	..	1	..	2	2	1	1	1	1	2	1	2	1	13	21
Valvular Disease of the Heart	..	1	..	2	10	40	84	86	223	..	1	..	1	9	34	80	87	212	1	7	14	10	10	11	13	9	9	2	19	10	11	11	17	21	19	12	6	5	16	47
Fatty Degeneration of the Heart	..	..	..	..	..	1	3	3	7	..	..	..	..	..	..	1	2	3	..	..	..	..	..	1	..	..	1	..	..	..	..	..	1	..	..	..	..	..	4	3
Other Organic Disease of the Heart	..	..	..	1	1	10	41	92	145	..	..	..	1	..	10	44	101	156	2	11	4	13	7	9	8	5	9	3	10	10	9	7	4	12	11	4	18	21	10	29
Angina Pectoris	..	..	..	..	..	1	9	4	14	..	..	..	..	..	1	9	4	14	..	..	2	1	..	1	1	..	1	..	..	1	2	..	2	1	1	..	1	..	..	3
Aneurysm	..	..	..	..	..	1	10	..	11	..	..	..	..	..	1	7	..	8	..	1	1	..	..	..	..	1	..	..	..	1	..	..	..	..	1	1	2	1	4	5
Arterial Sclerosis	..	..	..	..	..	1	39	189	229	..	..	..	..	..	..	40	177	217	12	8	21	16	8	25	10	8	13	8	23	10	11	4	8	16	8	4	4	7	19	144
Other Diseases of Arteries	..	..	..	..	..	1	4	..	5	..	..	..	..	..	1	4	..	5	..	..	..	2	..	..	..	..	..	..	1	..	..	..	..	1	..	1	..	..	..	..
Cerebral Embolism and Thrombosis	..	..	..	..	2	1	8	11	22	..	..	..	..	2	1	5	10	18	..	1	..	2	3	1	2	2	1	1	..	..	..	1	2	..	1	..	1	..	4	10
Other Embolism and Thrombosis	..	..	..	..	..	2	4	..	6	..	..	..	..	..	1	2	..	3	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	1	..	3	4
Diseases of the Veins (Varices, Haemorrhoids, Phlebitis, etc.)	..	..	..	..	1	..	3	..	4	..	..	..	..	..	1	3	..	4	..	..	..	..	1	..	..	..	..	1	..	..	..	..	2	..	..	..	..	1	1	1
Diseases of the Lymphatic System	3	..	..	1	..	..	1	..	5	2	..	..	1	..	..	..	..	3	..	1	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2
Haemorrhage	..	..	..	..	1	..	1	1	3	..	..	..	..	..	..	1	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	1	2
IV.—DISEASES OF RESPIRATORY SYSTEM.																																								
Diseases of the Larynx	2	..	1	..	..	..	..	..	3	1	..	1	..	..	..	..	..	2	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	1
Diseases of the Thyroid Body	..	..	..	..	1	1	4	1	7	..	..	..	..	..	1	3	1	5	..	1	..	..	1	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	2	5
Bronchitis	54	17	5	5	1	12	62	139	295	53	17	5	4	1	8	63	142	293	3	8	26	22	25	15	13	8	10	12	31	11	4	10	14	22	23	22	14	7	9	32
Broncho-Pneumonia	110	59	41	9	2	16	7	19	263	107	58	39	8	2	14	5	18	251	3	7	17	21	19	5	20	..	9	9	13	13	2	4	7	26	23	21	32	2	14	49
Lobar Pneumonia	7	2	6	4	16	29	26	6	96	3	1	4	4	12	27	26	6	83	1	2	6	3	5	1	1	1	3	4	9	6	1	3	4	11	10	5	7	2	15	54
Pneumonia (type not stated)	13	11	8	4	3	18	16	12	85	13	11	8	3	1	17	16	12	81	2	4	4	11	..	3	5	1	7	2	18	4	..	1	1	5	3	7	3	..	4	19
Pleurisy	..	1	3	..	3	4	4	1	16	..	..	..	..	3	3	2	1	9	..	1	3	2	..	..	2	..	..	..	..	..	..	..	1	..	..	..	..	..	7	11
Pulmonary Congestion, Pulmonary Apoplexy	..	1	..	..	..	..	..	2	3	..	1	..	..	..	..	..	1	2	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2
Asthma	..	1	..	..	..	3	8	6	18	..	1	..	..	..	3	9	5	18	..	1	..	1	..	2	..	..	2	1	1	..	..	2	..	3	1	2	2	1	1	..
Pulmonary Emphysema	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Other Diseases of the Respiratory System	..	..	..	1	1	..	3	..	5	..	..	..	1	1	..	2	..	4	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	1	3
Carried forward	293	174	155	144	186	489	865	905	3211	275	159	132	115	150	403	782	879	2895	45	103	201	240	169	144	148	84	142	94	241	146	96	97	138	229	220	166	192	117	432	1147

TABLE III. OF THE MINISTRY OF HEALTH.—*Continued.*

Return of Deaths from "All Causes" during the 53 Weeks ended 3rd January, 1925.

Age Periods.

Cause of Death.	Gross: under 1 year.	Gross: 1 year and under 2.	Gross: 2 years and under 5.	Gross: 5 years and under 15.	Gross: 15 years and under 25.	Gross: 25 years and under 45.	Gross: 45 years and under 65.	Gross: 65 years and above.	Total (Gross).	Net: Under 1 year.	Net: 1 year and under 2.	Net: 2 years and under 5.	Net: 5 years and under 15.	Net: 15 years and under 25.	Net: 25 years and under 45.	Net: 45 years and under 65.	Net: 65 years and above.	Total (Net).
Brought forward	293	174	155	144	186	489	865	905	3211	275	159	132	115	150	403	782	879	2895
V.—DISEASES OF DIGESTIVE SYSTEM.																		
Diseases of the Mouth and Annexa	1	..	1	..	..	..	1	..	3	1	..	..	..	..	..	..	..	1
Diseases of the Pharynx, Tonsillitis	..	..	1	..	..	2	..	1	4	..	..	1	..	..	..	..	1	2
Diseases of the Oesophagus	..	..	..	..	..	1	..	..	1	..	..	..	..	..	1	..	..	1
Perforating Ulcer of Stomach	..	..	..	..	..	9	15	6	30	..	..	..	..	..	4	6	3	13
Inflammation of Stomach	4	1	2	1	..	..	8	3	19	4	..	2	1	..	..	7	3	17
Other Diseases of the Stomach	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	1	1
Diarrhœa and Enteritis (under 2 years), *including* Dysentery, Epidemic or Zymotic Enteritis, and Intestinal Catarrh	57	21	..	..	..	..	..	..	78	48	15	..	..	..	..	..	..	63
Dyspepsia	1	1	..	..	..	..	..	..	2	1	1	..	..	..	..	..	..	2
Colic (under 2 years)	1	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	1
Diarrhœa and Enteritis (2 years and over)	..	..	5	2	1	3	4	6	21	..	..	5	2	1	..	1	6	15
Ulceration of the Intestines	..	..	..	..	1	1	1	..	3	..	..	..	..	1	..	..	..	1
Duodenal Ulcer	..	..	..	..	3	16	11	3	33	..	..	..	..	1	3	4	2	10
Appendicitis	1	..	3	17	11	9	8	6	55	..	..	2	8	1	2	3	3	19
Hernia, Intestinal Obstruction	10	2	1	2	5	8	28	14	70	3	1	..	1	..	4	7	10	26
Other Diseases of the Intestines	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..
Acute Yellow Atrophy of Liver	..	..	..	..	1	2	..	..	3	..	..	..	..	1	1	..	..	2
Cirrhosis of the Liver (Non-Alcoholic)	..	..	..	..	..	..	12	5	17	..	..	..	..	..	..	7	5	12
Cirrhosis of the Liver (Alcoholic)	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..
Biliary Calculi	..	..	..	..	..	1	12	8	21	..	..	..	..	..	..	4	3	7
Other Diseases of the Liver	..	..	..	1	..	5	13	4	23	..	..	..	..	..	1	2	3	6
Diseases of the Spleen	..	..	..	..	..	1	..	..	1	..	..	..	..	..	1	..	..	1
Peritonitis (cause unstated)	..	..	..	3	3	4	3	1	14	..	..	..	..	2	..	2	1	5
Other Diseases of the Digestive System	..	..	..	..	..	2	2	..	4	..	..	..	..	..	1	..	..	1
VI.—NON-VENEREAL DISEASES OF GENITO-URINARY SYSTEM AND ANNEXA.																		
Acute Nephritis	..	1	2	3	3	6	6	..	21	..	..	2	2	2	4	4	..	14
Bright's Disease	..	..	..	1	6	24	49	39	119	..	..	..	..	3	14	42	38	97
Other Diseases of the Kidney and Annexa	1	..	..	..	1	6	4	3	15	..	..	..	..	..	3	5	3	11
Calculi of the Urinary Passages	..	..	..	..	..	1	2	..	3	..	..	..	..	..	..	..	..	..
Diseases of the Bladder	..	..	..	..	..	..	2	2	4	..	..	..	..	..	..	..	2	2
Diseases of the Urethra, Urinary Abscess, &c.	..	..	..	..	..	2	7	2	11	..	..	..	..	..	2	4	..	6
Diseases of the Prostate	..	..	..	..	..	..	9	19	28	..	..	..	..	..	..	2	9	11
Uterine Tumour (non-cancerous)	..	..	..	..	..	3	2	1	6	..	..	..	..	..	..	1	..	1
Other Diseases of the Uterus	..	..	..	..	1	2	2	1	6	..	..	..	..	..	1	1	..	2
Ovarian Cyst, Tumour (non-cancerous)	..	..	..	..	..	..	2	..	2	..	..	..	..	..	..	..	..	..
Other Diseases of the Female Genital Organs	..	..	..	..	1	3	1	..	5	..	..	..	..	1	2	..	..	3
VII.—THE PUERPERAL STATE.																		
Abortion	..	..	..	..	1	3	1	..	5	..	..	..	..	..	..	1	..	1
Puerperal Hæmorrhage	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..
Other Accidents of Childbirth	..	..	..	..	5	4	..	..	9	..	..	..	..	3	3	..	..	6
Puerperal Fever	..	..	..	..	5	10	..	..	15	..	..	..	..	..	6	..	..	6
Puerperal Albuminuria and Convulsions	..	..	..	..	3	1	..	..	4	..	..	..	..	2	..	..	..	2
Puerperal Phlegmasia	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..
Puerperal Insanity	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..
VIII.—DISEASES OF SKIN AND CELLULAR TISSUE.																		
Senile Gangrene	..	..	..	..	..	..	1	12	13	..	..	..	..	..	..	2	9	11
Gangrene, other types	1	..	..	..	2	..	..	..	3	..	..	..	..	1	..	..	..	1
Carbuncle—Boil	1	..	..	1	..	..	1	1	4	1	..	..	1	..	..	..	1	3
Phlegmon, Acute Abscess	3	..	1	1	1	1	4	1	12	1	..	1	..	..	1	2	1	6
Diseases of the Integumentary System	6	..	..	..	..	1	2	..	9	5	..	..	..	..	..	2	..	7
IX.—DISEASES OF BONES, etc.																		
Diseases of the Bones	3	..	2	5	5	1	2	1	19	1	..	..	1	..	..	1	..	3
Diseases of the Joints	..	1	..	..	..	1	..	..	2	..	..	..	..	..	1	..	..	1
X.—MALFORMATIONS.																		
Congenital Malformations	30	2	3	3	..	..	..	..	38	19	2	2	2	..	..	..	..	25
XI.—DISEASES OF EARLY INFANCY.																		
Premature Birth	191	..	..	..	..	..	..	..	191	169	..	..	..	..	..	..	..	169
Infantile Atrophy, Debility, and Marasmus	65	2	..	..	..	..	..	..	67	60	2	..	..	..	..	..	..	62
Icterus Neonatorum, Sclerema and Œdema Neonatorum	6	..	..	..	..	..	..	..	6	5	..	..	..	..	..	..	..	5
Diseases of Umbilicus	4	..	..	..	..	..	..	..	4	3	..	..	..	..	..	..	..	3
Atelectasis	21	..	..	..	..	..	..	..	21	18	..	..	..	..	..	..	..	18
Injuries at Birth	18	..	..	..	..	..	..	..	18	14	..	..	..	..	..	..	..	14
XII.—OLD AGE.																		
Senile Dementia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	2
Old Age	..	..	..	..	..	..	..	125	125	..	..	..	..	..	..	..	133	133
XIII.—AFFECTIONS PRODUCED BY EXTERNAL CAUSES.																		
Suicide by Poison	..	..	..	..	1	..	..	1	2	..	..	..	..	1	..	..	1	2
" Asphyxia	..	..	..	..	2	3	2	1	8	..	..	..	..	2	4	1	1	8
" Hanging and Strangulation	..	..	..	..	..	3	2	..	5	..	..	..	..	..	3	2	..	5
" Drowning	..	..	..	..	1	1	..	..	2	..	..	..	..	..	1	3	1	5
" Cutting and Piercing Instruments	..	..	..	..	1	3	7	1	12	..	..	..	..	1	5	6	..	12
" Jumping from High Place	..	..	..	..	..	..	2	..	2	..	..	..	..	..	..	2	..	2
" Crushing	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	2
Other Suicide	..	..	..	..	..	1	..	..	1	..	..	..	..	..	1	..	..	1
Burns (conflagration excepted)	2	3	3	5	..	5	2	2	22	1	2	..	2	..	..	2	2	9
Absorption of Deleterious Gases	1	..	..	..	..	..	..	..	1	1	..	..	..	..	1	..	..	2
Accidental Drowning	..	..	..	1	..	2	..	..	3	..	..	..	2	1	2	1	..	6
Injury by Firearms	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..
Injury by Fall	..	..	1	3	4	3	8	6	25	..	..	..	..	1	..	3	4	8
Injury in Mines and Quarries	..	..	..	1	8	9	9	..	27	..	..	..	..	2	..	4	..	6
Injury by Machines	..	..	..	..	..	1	1	..	2	..	..	..	..	..	..	1	..	1
Injury by other Crushing (vehicles, railways, landslides, &c.)	..	..	5	15	9	17	8	9	63	..	..	2	7	1	8	5	7	30
Injury by Animal	..	..	1	..	..	..	..	..	1	..	..	1	..	1	..	..	..	2
Homicide	..	..	..	..	..	1	2	..	3	..	..	..	..	..	..	1	..	1
Fractures (cause not specified)	..	..	..	..	..	..	..	2	2	..	..	..	..	..	..	..	2	2
Other Violence	1	..	..	..	3	1	2	..	7	..	..	..	..	1	1	2	..	4
War—Gunshot Wounds, &c.	..	..	..	..	..	2	..	..	2	..	..	..	..	..	2	..	..	2
XIV.—ILL-DEFINED CAUSES.																		
Dropsy	..	..	..	..	..	..	1	1	2	..	..	..	..	..	..	1	1	2
Syncope (aged 1 year and under 70)	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	1	1
Heart Failure (aged 1 year and under 70)	..	..	..	1	1	..	..	2	4	..	..	..	1	..	1	1	2	5
Asthenia (aged 1 year and under 70)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1
Cause not specified	..	..	..	..	..	1	2	1	4	1	..	..	..	..	1	1	2	5
Total	722	208	186	210	275	679	1129	1198	4607	632	182	150	145	180	490	930	1141	3850

Wards—Net Deaths.

Cause of Death.	St. Nicholas'.	St. Thomas'.	St. John's.	Stephenson.	Armstrong.	Elswick.	Westgate.	Arthur's Hill.	Benwell.	Fenham.	All Saints'.	St. Andrew's.	Jesmond.	Dene.	Heaton.	Byker.	St. Lawrence.	St. Anthony's.	Walker.	Transferable Deaths: Inward.	Transferable Deaths: Outward.	Deaths in Institutions in the City of "Residents" or "Non-Residents."
Brought forward	45	103	201	240	169	144	148	84	142	94	241	146	96	97	138	229	220	166	192	117	432	1147
V.—DISEASES OF DIGESTIVE SYSTEM.																						
Diseases of the Mouth and Annexa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	2
Diseases of the Pharynx, Tonsillitis	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1
Diseases of the Oesophagus	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Perforating Ulcer of Stomach	..	..	..	2	..	..	..	..	..	..	3	2	..	2	..	1	..	3	..	..	17	26
Inflammation of Stomach	1	..	1	2	..	1	..	..	..	..	2	2	1	1	..	..	3	2	1	..	2	3
Other Diseases of the Stomach	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhœa and Enteritis (under 2 years), *including* Dysentery, Epidemic or Zymotic Enteritis, and Intestinal Catarrh	..	..	4	7	3	2	3	..	6	1	4	2	..	1	..	7	8	7	8	..	15	25
Dyspepsia	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
Colic (under 2 years)	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Diarrhœa and Enteritis (2 years and over)	..	..	3	2	..	1	..	1	..	..	1	..	1	..	3	..	1	2	..	..	6	8
Ulceration of the Intestines	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	2	2
Duodenal Ulcer	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	6	1	..	..	..	23	26
Appendicitis	..	3	2	..	2	..	2	..	2	..	..	2	2	..	1	3	..	..	..	..	36	50
Hernia, Intestinal Obstruction	..	2	1	4	..	..	1	3	..	..	2	4	2	..	..	..	2	1	4	..	44	53
Other Diseases of the Intestines	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Acute Yellow Atrophy of Liver	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	1	2
Cirrhosis of the Liver (Non-Alcoholic)	..	2	1	1	1	3	1	..	1	..	..	..	..	..	1	..	1	..	..	..	5	7
Cirrhosis of the Liver (Alcoholic)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Biliary Calculi	..	1	1	..	..	..	..	..	..	..	1	..	1	1	1	..	1	..	..	1	15	17
Other Diseases of the Liver	..	..	..	1	..	..	1	..	..	1	1	..	..	1	..	1	..	..	..	1	18	19
Diseases of the Spleen	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Peritonitis (cause unstated)	..	..	..	1	1	..	..	..	1	..	..	..	..	1	..	..	..	..	1	..	9	11
Other Diseases of the Digestive System	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	3	4
VI.—NON-VENEREAL DISEASES OF GENITO-URINARY SYSTEM AND ANNEXA.																						
Acute Nephritis	..	1	..	1	3	..	..	..	1	..	..	3	..	1	2	..	1	..	1	..	7	13
Bright's Disease	2	7	4	6	8	3	3	5	5	3	5	11	6	3	4	6	5	5	6	5	27	32
Other Diseases of the Kidney and Annexa	..	..	1	2	1	..	3	..	..	1	..	..	1	1	..	1	..	..	..	1	5	8
Calculi of the Urinary Passages	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	3
Diseases of the Bladder	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	2	2
Diseases of the Urethra, Urinary Abscess, &c.	2	..	..	..	..	..	..	..	1	..	1	..	..	..	..	1	..	..	1	..	5	11
Diseases of the Prostate	..	1	..	1	1	2	..	1	..	..	1	..	..	..	..	1	1	2	..	..	17	21
Uterine Tumour (non-cancerous)	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	5	5
Other Diseases of the Uterus	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	4	5
Ovarian Cyst, Tumour (non-cancerous)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2
Other Diseases of the Female Genital Organs	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	2	4
VII.—THE PUERPERAL STATE.																						
Abortion	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	4	4
Puerperal Hæmorrhage	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Other Accidents of Childbirth	..	1	1	..	..	1	..	..	..	..	1	..	..	..	..	..	..	1	1	..	3	6
Puerperal Fever	..	..	..	2	2	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	9	13
Puerperal Albuminuria and Convulsions	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	2	2
Puerperal Phlegmasia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Puerperal Insanity	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
VIII.—DISEASES OF SKIN AND CELLULAR TISSUE.																						
Senile Gangrene	..	1	1	..	..	..	1	2	1	..	..	1	1	1	1	..	..	..	1	1	3	2
Gangrene, other types	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	2	3
Carbuncle—Boil	..	..	1	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	1	2
Phlegmon, Acute Abscess	..	1	1	1	..	..	..	..	..	..	1	..	..	1	..	..	1	..	..	..	6	11
Diseases of the Integumentary System	..	..	..	..	1	..	1	..	..	2	..	..	..	..	..	..	1	2	..	..	2	4
IX.—DISEASES OF BONES, etc.																						
Diseases of the Bones	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	..	16	16
Diseases of the Joints	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	2
X.—MALFORMATIONS.																						
Congenital Malformations	..	..	4	..	1	2	..	1	2	1	..	4	..	..	..	1	4	2	3	..	13	20
XI.—DISEASES OF EARLY INFANCY.																						
Premature Birth	4	2	16	22	14	5	5	..	12	2	9	9	3	6	11	10	14	7	18	1	23	50
Infantile Atrophy, Debility, and Marasmus	2	..	4	9	6	2	5	1	2	2	1	..	2	..	2	3	4	7	10	1	6	8
Icterus Neonatorum, Sclerema and Œdema Neonatorum	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	1	..	1	1	..	1	2
Diseases of Umbilicus	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	1	3
Atelectasis	..	2	1	3	1	..	..	..	..	..	3	..	..	..	2	4	2	..	..	..	3	9
Injuries at Birth	..	1	..	2	1	1	..	..	..	..	1	..	..	1	..	4	..	2	1	..	4	8
XII.—OLD AGE.																						
Senile Dementia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	..	..
Old Age	1	3	..	1	5	10	3	3	10	4	9	7	7	13	16	11	17	9	4	8	..	..
XIII.—AFFECTIONS PRODUCED BY EXTERNAL CAUSES.																						
Suicide by Poison	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	2
" Asphyxia	..	2	1	..	..	2	..	..	..	..	..	..	1	..	1	..	..	..	1	1	1	1
" Hanging and Strangulation	..	..	..	2	..	..	..	..	..	..	1	..	..	..	1	1	..	..	..	..	..	..
" Drowning	1	..	..	..	..	1	..	..	1	..	..	..	1	..	1	..	..	..	..	4	1	..
" Cutting and Piercing Instruments	1	..	..	2	2	..	..	..	1	3	2	..	..	..	..	1	..	..	..	4	4	8
" Jumping from High Place	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	2
" Crushing	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	2	..	..
Other Suicide	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Burns (conflagration excepted)	..	..	1	..	1	..	2	..	1	..	2	..	..	..	..	1	..	..	1	1	14	20
Absorption of Deleterious Gases	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	1	..	..
Accidental Drowning	..	..	1	1	1	1	..	..	1	..	..	..	..	..	..	1	..	..	..	6	3	2
Injury by Firearms	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Injury by Fall	..	..	1	1	1	..	..	1	..	..	1	..	..	..	1	1	1	..	..	..	17	23
Injury in Mines and Quarries	..	..	..	..	..	..	2	..	..	1	..	..	..	..	..	..	..	1	2	3	24	27
Injury by Machines	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	1
Injury by other Crushing (vehicles, railways, landslides, &c.)	..	3	..	2	4	..	5	1	2	2	4	1	2	1	..	1	1	..	1	6	39	57
Injury by Animal	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..
Homicide	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	2	3
Fractures (cause not specified)	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Other Violence	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	1	..	1	..	..	3	6
War—Gunshot Wounds, &c.	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
XIV.—ILL-DEFINED CAUSES.																						
Dropsy	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Syncope (aged 1 year and under 70)	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Heart Failure (aged 1 year and under 70)	..	1	..	..	..	..	2	..	..	..	..	1	..	..	..	..	..	..	1	2	1	..
Asthenia (aged 1 year and under 70)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..
Cause not specified	..	..	1	1	..	..	..	1	..	..	..	1	..	1	..	..	..	..	..	2	1	..
Total	60	138	257	325	232	182	195	106	198	120	305	198	129	136	187	299	295	224	264	172	929	1752

REPORT OF THE
MATERNITY AND CHILD WELFARE
MEDICAL OFFICER.

II.—THE CHILD.

INFANTILE MORTALITY, MATERNITY AND
CHILD WELFARE.

INFANTILE MORTALITY.

SUMMARY OF BIRTHS AND DEATHS, 1924.

	LEGITIMATE.			ILLEGITIMATE.			Grand Total.
	M.	F.	Total.	M.	F.	Total.	
Total Births in the Year ..	3,455	3,231	6,686	188	155	343	7,029
Nett „ „ „	3,140	2,942	6,082	133	120	253	6,335
Nett Deaths under 1 year ..	354	253	607	15	10	25	632
Death Rate per 1,000 births	113	86	100	113	83	99	100

BIRTHS (CORRECTED) IN WARDS IN THE DIFFERENT QUARTERS OF THE YEAR 1924.

WARD.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	TOTALS.
St. Nicholas'	17	17	19	16	69
St. Thomas'.....	51	48	44	47	190
St. John's	111	119	112	103	445
Stephenson	139	124	149	127	539
Armstrong	96	112	113	101	422
Elswick	60	63	56	52	231
Westgate	81	91	70	98	340
Arthur's Hill	24	28	27	23	102
Benwell	124	141	106	119	490
Fenham	50	56	77	61	244
All Saints'	109	121	113	116	459
St. Andrew's	83	63	70	86	302
Jesmond	34	21	33	30	118
Dene	38	39	27	32	136
Heaton	69	63	54	73	259
Byker	128	96	111	109	444
St. Lawrence	161	153	131	128	573
St. Anthony's	123	106	113	86	428
Walker	113	149	131	151	544
CITY	1,611	1,610	1,556	1,558	6,335

DISTRIBUTION OF DEATHS.

WARDS.	Nett Deaths of Children under 1 year of age in 1924.					Children under 1 year of age—Death rate per 1,000 Births.	Birth Rate per 1,000 Population (corrected).
	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Whole Year.		
St. Nicholas' ..	3	1	1	2	7	101	19·3
St. Thomas' ..	6	7	..	1	14	74	12·8
St. John's	10	18	10	13	51	115	27·9
Stephenson ...	19	16	9	22	66	123	27·0
Armstrong ...	10	19	10	12	51	121	25·6
Elswick	5	7	4	4	20	87	17·7
Westgate	9	9	6	10	34	100	21·1
Arthur's Hill .	2	2	..	1	5	49	10·1
Benwell	9	15	2	11	37	76	24·0
Fenham	4	6	1	7	18	74	19·9
All Saints'	12	12	9	13	46	100	25·4
St. Andrew's .	6	4	5	7	22	73	23·0
Jesmond.....	5	..	1	..	6	51	10·9
Dene	3	5	1	3	12	88	10·5
Heaton	9	4	5	3	21	81	17·4
Byker	17	14	4	11	46	104	24·4
St. Lawrence .	15	15	10	21	61	106	28·0
St. Anthony's .	21	14	5	12	52	121	24·5
Walker	18	19	10	16	63	116	31·8
CITY.....	183	187	93	169	632	100	22·2

All deaths occurring in Public Institutions have been allotted to the Wards to which they properly belong.

TABLE IV. OF MINISTRY OF HEALTH.

RETURN OF DEATHS UNDER ONE YEAR OF AGE DURING THE 53 WEEKS ENDED 3RD JANUARY, 1925.

CAUSE OF DEATH.	AGE PERIODS.																				Deaths in Institutions in the City of "Residents" or "Non-Residents"
	GROSS.										NETT (after allowing for transfers).										
	Under 1 Week.	1–2 Weeks.	2–3 Weeks.	3–4 Weeks.	Total under 1 Month.	1–3 Months.	3–6 Months.	6–9 Months.	9–12 Months.	Total under 1 Year of Age.	Under 1 Week.	1–2 Weeks.	2–3 Weeks.	3–4 Weeks.	Total under 1 Month.	1–3 Months.	3–6 Months.	6–9 Months.	9–12 Months.	Total under 1 Year of Age.	
I.—GENERAL DISEASES.																					
Measles	..	..	..	..	..	..	..	4	3	7	..	..	..	..	..	..	..	4	3	7	3
Whooping Cough	..	..	..	..	..	1	1	4	5	11	..	..	..	..	..	1	2	4	5	12	2
Croup	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	1	..	..	..	1	..
Influenza	..	..	..	..	..	1	3	4	1	9	..	..	..	..	..	1	3	4	1	9	..
Erysipelas	..	..	..	..	..	1	1	..	..	2	..	..	..	..	..	..	..	..	..	..	2
Pyæmia, Septicæmia	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	1	..	1	1
Pulmonary Tuberculosis (not acute)	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	1	..	..	..	1	..
Tuberculous Meningitis	..	..	..	..	..	..	2	..	5	7	..	..	..	..	..	..	2	..	4	6	4
Tuberculosis of Peritoneum and Intestines	..	..	..	..	..	..	1	2	2	5	..	..	..	..	..	..	1	1	1	3	2
TOTAL TUBERCULOSIS	..	..	..	..	..	1	3	2	7	13	..	..	..	..	..	1	3	1	5	10	6
Rickets, Softening of Bones	..	..	..	..	..	..	1	2	..	3	..	..	..	..	..	..	1	2	..	3	..
Syphilis	1	..	..	..	1	4	1	1	..	7	1	..	..	..	1	4	1	..	..	6	4
Leucocythæmia, Lymphadenoma	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	1	1	..
Other General Diseases	2	..	..	..	2	..	..	..	..	2	2	..	..	..	2	..	..	..	..	2	..
II.—DISEASES OF NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.																					
Encephalitis	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	1	..	1	1
Meningitis, undefined	..	..	..	..	..	1	2	4	3	10	..	..	..	..	..	1	2	3	2	8	2
Convulsions with Teething	..	..	..	1	1	..	..	1	2	4	..	..	..	1	1	..	..	1	2	4	..
Other Infantile Convulsions	6	5	1	1	13	8	1	2	2	26	6	5	2	1	14	7	1	2	2	26	1
Other Diseases of the Nervous System	1	1	..	..	2	..	2	..	..	4	1	1	..	..	2	..	2	..	..	4	1
Diseases of the Ears	..	..	..	..	..	..	..	..	2	2	..	..	..	..	..	..	..	..	1	1	1
III.—DISEASES OF CIRCULATORY SYSTEM.																					
Diseases of the Lymphatic System	..	..	..	1	1	..	1	..	1	3	..	..	..	1	1	..	..	..	1	2	1
IV.—DISEASES OF RESPIRATORY SYSTEM.																					
Diseases of the Larynx	..	..	..	..	..	..	1	..	1	2	..	..	..	..	..	..	..	..	1	1	1
Bronchitis	1	2	3	1	7	10	14	15	8	54	1	2	3	1	7	11	13	15	7	53	8
Broncho-pneumonia	1	..	1	1	3	18	31	32	26	110	1	..	1	1	3	17	30	32	25	107	12
Lobar Pneumonia	..	..	..	..	..	..	2	..	5	7	..	..	..	..	..	..	1	..	2	3	5
Pneumonia (type not stated)	..	..	..	..	..	2	2	4	5	13	..	..	..	..	..	2	2	4	5	13	1
Carried forward	12	8	5	5	30	47	66	78	72	293	12	8	6	5	31	45	61	75	63	275	52

TABLE IV. OF MINISTRY OF HEALTH.—Continued.

RETURN OF DEATHS UNDER ONE YEAR OF AGE DURING THE 53 WEEKS ENDED 3RD JANUARY, 1925.

CAUSE OF DEATH.	AGE PERIODS. GROSS. Under 1 Week.	1–2 Weeks.	2–3 Weeks.	3–4 Weeks.	Total under 1 Month.	1–3 Months.	3–6 Months.	6–9 Months.	9–12 Months.	Total under 1 Year of Age.	NETT (after allowing for transfers). Under 1 Week.	1–2 Weeks.	2–3 Weeks.	3–4 Weeks.	Total under 1 Month.	1–3 Months.	3–6 Months.	6–9 Months.	9–12 Months.	Total under 1 Year of Age.	Deaths in Institutions in the City of "Residents" or "Non-Residents."
Brought forward	12	8	5	5	30	47	66	78	72	293	12	8	6	5	31	45	61	75	63	275	52
V.—DISEASES OF DIGESTIVE SYSTEM.																					
Diseases of the Mouth and Annexa	..	..	..	1	1	..	..	..	..	1	..	..	..	1	1	..	..	..	..	1	
Inflammation of the Stomach	..	..	..	..	..	2	1	..	1	4	..	..	..	..	..	2	1	..	1	4	..
Diarrhœa and Enteritis *including* Dysentery, Epidemic or Zymotic Enteritis, and Intestinal Catarrh	..	2	..	3	5	13	15	15	9	57	..	1	..	3	4	12	11	14	7	48	21
Dyspepsia	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	1	..	1	..
Colic	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	1	1	..
Appendicitis	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	1
Hernia, Intestinal Obstruction	1	..	..	..	1	..	5	3	1	10	..	..	..	..	..	..	1	1	1	3	8
VI.—NON-VENEREAL DISEASES OF GENITO-URINARY SYSTEM AND ANNEXA.																					
Diseases of the Kidney and Annexa	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..
VII.—DISEASES OF SKIN AND CELLULAR TISSUE.																					
Gangrene	..	..	1	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1
Carbuncle—Boil	..	1	..	..	1	..	..	..	..	1	..	1	..	..	1	..	..	..	..	1	..
Phlegmon, Acute Abscess	..	..	..	..	..	2	1	..	..	3	..	..	..	..	..	1	..	..	..	1	3
Diseases of the Integumentary System	..	1	2	1	4	..	1	..	1	6	..	..	2	1	3	..	1	..	1	5	3
VIII.—DISEASES OF BONES, &c.																					
Diseases of the Bones	..	..	..	..	..	..	2	..	1	3	..	..	..	..	..	..	1	..	..	1	2
IX.—MALFORMATIONS.																					
Congenital Malformations	9	3	..	1	13	8	5	1	3	30	7	1	..	1	9	4	3	..	3	19	15
X.—DISEASES OF EARLY INFANCY.																					
Premature Birth	147	15	4	8	174	13	4	..	..	191	127	15	4	8	154	13	2	..	..	169	50
Infantile Atrophy, Debility, and Marasmus	23	10	9	2	44	12	7	2	..	65	21	9	9	2	41	11	6	2	..	60	8
Icterus Neonatorum, Sclerema and Œdema Neonatorum	2	1	1	1	5	1	..	..	..	6	2	1	1	..	4	1	..	..	..	5	2
Diseases of Umbilicus	2	2	..	..	4	..	..	..	..	4	2	1	..	..	3	..	..	..	..	3	3
Atelectasis	21	..	..	..	21	..	..	..	..	21	18	..	..	..	18	..	..	..	..	18	9
Injuries at Birth	15	2	1	..	18	..	..	..	..	18	12	1	1	..	14	..	..	..	..	14	8
XI.—AFFECTIONS PRODUCED BY EXTERNAL CAUSES.																					
Burns (conflagration excepted)	..	..	..	..	..	..	1	1	..	2	..	..	..	..	..	..	..	1	..	1	2
Absorption of Deleterious Gases	..	1	..	..	1	..	..	..	..	1	..	1	..	..	1	..	..	..	..	1	
Fracture of Skull	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	1
XII.—ILL-DEFINED CAUSES.																					
Cause not stated	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	1	..
TOTAL	232	46	23	22	323	98	108	103	90	722	202	39	23	21	285	89	87	94	77	632	189

ANALYSIS OF INFANTILE MORTALITY SINCE COMMENCEMENT OF ORGANISED MATERNITY AND CHILD WELFARE WORK BY THE HEALTH DEPARTMENT.

	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
Death-rate of Infants *under* 1 *year* per 1,000 births	177	139	166	155	138	153	126	139	122	123	137	101	122	137	133	123	113	107	120	101	96	92	98	100
Death-rate of Infants *under* 3 *months* per 1,000 births	83·8	74·8	84·9	82·6	71·6	75·6	68·6	76·6	64·8	66·9	71·5	60·3	67·7	70·7	68·2	66·2	58·7	37·7	64·1	62·1	61·0	57·2	54·4	59·0
Death-rate of Infants from *Premature Birth*, per 1,000 births	20·1	20·7	25·1	20·9	19·7	22·0	21·2	24·8	19·8	18·8	21·7	19·3	22·0	19·5	24·0	22·0	22·3	27·4	24·6	20·6	22·2	18·4	21·2	26·7
Death-rate of Infants *under* 1 *year* per 1,000 births, from *Premature Birth*, plus all *Congenital Causes**	40·8	51·7	62·1	60·6	52·1	61·5	43·0	44·6	42·3	42·6	43·9	48·0	57·4	51·1	56·6	51·0	46·0	45·3	51·5	43·1	39·0	34·8	41·5	45·5
Death-rate of Infants *under* 1 *year* per 1,000 births, from *Diarrhœa and all other Digestive Diseases* †	45·7	12·8	26·9	21·8	22·4	35·2	12·7	24·8	13·5	16·7	25·1	7·8	16·6	25·3	20·1	14·3	14·8	11·9	14·7	14·9	16·0	9·1	11·5	9·6
Death-rate of Infants *under* 1 *year* per 1,000 births, from *Infantile Atrophy, Debility and Marasmus*	15·8	19·8	30·8	29·2	24·4	31·4	11·1	10·6	14·6	13·5	22·7	21·4	25·6	23·0	25·0	22·4	17·7	13·0	18·0	16·9	13·0	9·4	11·5	9·5
Death-rate of Infants *under* 1 *year* per 1,000 births, from *Measles*	..	..	..	..	..	5·35	2·60	0·60	3·64	2·26	4·95	3·61	2·28	4·65	6·90	2·50	2·46	0·77	3·89	0·99	2·88	0·29	4·87	1·10
Death-rate of Infants *under* 1 *year* per 1,000 births, from *Whooping Cough*	..	..	..	..	..	3·42	7·30	5·73	4·30	5·05	7·35	2·78	5·50	5·20	5·17	4·10	3·70	6·65	0·60	3·1	3·7	1·6	5·3	1·9
Death-rate of Infants *under* 1 *year* per 1,000 births, from *Respiratory Diseases*.....	..	..	..	..	..	20·8	24·6	27·0	24·4	25·2	26·4	20·4	22·2	30·6	24·9	28·0	27·0	20·9	27·6	26·9	18·7	32·0	23·6	27·9
Death-rate of Infants *under* 1 *year* per 1,000 births, from *Tuberculosis* (all forms)	..	..	..	..	..	3·53	3·71	4·65	4·55	4·25	2·40	3·20	3·88	3·88	3·40	2·60	1·54	2·63	1·80	1·36	1·51	1·29	2·2	1·6

For particulars of deaths, as to causes, etc., see Tables on pages 58A and 62A.

Prior to 1911 figures uncorrected for cases belonging to other districts.

* "*All Congenital Causes*" includes Syphilis and congenital defects.

† "*Diarrhœa and all other Digestive Diseases*" includes Diarrhœa, Dysentery, Epidemic or Zymotic Enteritis, Rickets, Diseases of the Stomach, Enteritis, Obstruction of Intestine, Peritonitis and other Diseases of the Digestive System.

DEATHS OF CHILDREN UNDER SCHOOL AGE.

The mortality rate among children, aged 1 to 5 years, in 1924, per 1,000 births in the years 1920 to 1923 (inclusive) was 13·8. The corresponding figure for each of the previous four years was as follows:—1923, 14·3; 1922, 13·8; 1921, 15·0; 1920, 12·4.

DEATHS FROM "THE PUERPERAL STATE."

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
Population	217,862	255,160	257,113	259,082	261,065	263,064	265,077	267,261	269,193	271,295	271,523	278,107	278,107	278,107	278,107	275,009	286,061	278,400	281,600	283,800	285,900
Deaths	30	23	19	16	27	27	24	29	29	23	22	28	37	18	21	29	27	24	28	26	15
*Rate per 1,000 population	0·14	0·09	0·07	0·06	0·10	0·10	0·09	0·10	0·10	0·08	0·08	0·10	0·13	0·06	0·08	0·10	0·09	0·09	0·10	0·09	0·05
*Rate per 1,000 births	3·64	2·24	2·07	1·73	2·99	3·12	2·92	3·81	4·03	3·08	2·92	3·71	5·10	2·46	3·25	4·35	3·34	3·29	4·01	4·08	2·37

* From 1904 to 1911 the figures are uncorrected.

Report of the Maternity and Child Welfare Medical Officer.

To the Medical Officer of Health.

Sir,

General.

From a Maternity and Child Welfare point of view, the year 1924—so far as Newcastle-upon-Tyne is concerned—provides nothing of an outstanding nature, but some steady progress has been made, as will best be seen by reference to the table of centre attendances, set forth on subsequent pages. In addition to this evidence, there is the indelible impression in the minds of all those actively engaged in the work, of satisfactory advances made during the year, which cannot be reduced to figures. Thus one such impression is that of an increased awakening of public interest in the work, and especially among the child-bearing women of the City. Another and very gratifying impression is that of a marked increase in natural as distinct from bottle feeding. There is still a great deal of unnecessary bottle feeding practised, but the campaign against this, which has been ceaselessly waged at the Centres during the last five years, has undoubtedly been successful.

There are, however, many formidable obstacles in the path of the natural feeding advocate, and one of the most serious is that commonly known as "vested interests." The manufacture of dried milk has become an extensive and lucrative one, in which much capital is invested, and one of the principal sources from which

interest on this capital can come is the mother of a family of one or more young children. Hence no time nor opportunity is lost in bringing to the notice of a young mother, after the birth of her child, the virtues of one or more brands of dried milk. A circular letter by post, or a carefully worded advertisement in the public press, can be very convincing to the wife of an unemployed man, especially when accompanied or followed quickly by the receipt of some alluring samples.

I say to the wife of an unemployed man because it is she who, to use her own words, is " not getting her proper support," and who cannot, therefore, see how she can possibly naturally feed her offspring successfully.

When we can get such mothers to the centres in the earliest days of the child's life there is little difficulty in persuading them to properly carry out their maternal duties, but in many cases the damage is done before we have the opportunity to influence. If to this commercialising of the diet of infants there were no counteracting influences in the shape of maternity and child welfare centres, it can readily be imagined that the day would soon come when artificial feeding would be the national custom, to be quickly followed by the day when women, through neglect to use it, would be unable to perform one of their most precious attributes.

Another obstacle is the pedantic friend or neighbour who seeks credit by discrediting old nature in favour of new art. Such people do a considerable amount of harm, and as they rarely have more than a rudimentary knowledge of the wares they extol, inflict much suffering on the harmless and helpless little victims.

Another obstacle—though not in my opinion so serious a one as those already mentioned—is the prevailing desire for amusement existing among all classes and including new and young mothers. Maternal duties naturally performed are incompatible with both the cinematograph theatre and the dance hall, whereas, on the other hand, artificial feeding can be carried out as successfully by the father, or a neighbour, as by the mother; and when so carried out, the latter is free to seek pleasure elsewhere than in her own home, if she wishes to do so. It has long since been the custom to lament the tendency to lose the home life which from time immemorial has been so marked a feature of our people; but with the housing question in its present condition, home life must be very unattractive for many. The mother who, with her husband and two or more young children, spends all her days in one room, may be pardoned if she seeks change and relaxation away from it on one or two evenings in the week; but for all that, such a course is inimical to maternity and child welfare, and is therefore discouraged as much as possible.

Births.

The City's birth rate continues to decline steadily, as will be seen from the following table:—

YEAR	BIRTHS.
1920	8,070
1921	7,284
1922	6,987
1923	6,367
1924	6,335

There can be little doubt in the minds of all who come daily into contact with women of child-bearing age that much of this decline is intentional, and is due to the obvious causes of (*a*) industrial distress, and (*b*) shortage of houses ; and of the two, the latter cause may be the chief, in that it is such a strong deterrent to marriage.

Deaths.

632 of the City's children died before they had reached the completion of their first year of life, as compared with 623 in the previous year, and of this number, 285—or nearly half—died before they were one month old. This last fact presents a problem which is difficult to solve, because of the children who died during the first month of life the overwhelming majority (202) died during the first week—that is before any public health influence could be brought to bear in their favour. The cause of death in many of these infants is obscure, but the principal stated cause is " Prematurity," which accounted for 154 out of a total of 285. " Debility " and " Marasmus " are also prominent stated causes of early death. While all these terms are well recognised, none of them can be regarded as complete, and it is probable that further study and experience will some day reveal more accurate terms. The mortality rate has been detrimentally influenced, too, by an increased number of deaths occurring among twin and triplet children—73 in 1924, as compared with 61 in 1923.

It is not the least of many disadvantages of a multiple pregnancy that it increases the infantile mortality rate of the town concerned. Often enough the birth of another child in a poor home, which already possesses as many as can be provided for, is unfortunate, but when two or three arrive at the same birth

it is something in the nature of a calamity, because so many of these latter almost inevitably die from lack of necessary care and attention.

As a natural outcome of the cold and wet weather during the year, the number of deaths attributed to bronchitis and pneumonia was also increased—176 as compared with 150 for 1923. The following table shows graphically what is set out above :—

	1923.	1924.
Deaths of children during first week	165	202
Deaths of children during first month	245	285
Deaths from Prematurity	135	169
Deaths of Twins and Triplets	61	73
Deaths from Pneumonia and Bronchitis	150	176

Sex Infant Mortality.—Of the 6,335 children who were born in the City during the year 3,273 were boys and 3,062 were girls : that is there were 211 more boys than girls. In a previous report attention was drawn to the fact that although each year sees an excess of male births over female births, it also sees an excess of male infant deaths, which, unfortunately, is out of proportion to the birth excess ; and 1924 was no exception to the rule. Thus 369 boys (or 113 per thousand of those born) died during their first year, compared with 263 girls (or 86 per thousand births).

Welfare Centres.

In November the Centre held for some years at the Girls' Club, in City Road, was transferred to its new home in the Princess Mary Maternity Hospital. The new accommodation is an improvement in every way, and the change has been much appreciated by all concerned. The following table shows the geographical position of the Centres in the City, together with details of Centre days, etc. :—

Centre.	Address.	Women and Children.	Medical Officer.	Health Visitor.	Ante-Natal Sessions.
Benwell	Y.W.C.A. Club, Buddle Road	Monday.....	Dr. Glen Davison ...	Miss Willson....	Friday, 2 p.m. Mr. Harvey Evers, F.R.C.S.
Byker	Corner of Dalton Street and Shipley Street	Monday.....	Dr. A. F. G. Spinks	Miss Moody	Friday, 2 p.m. Dr. Mabel Campbell.
City	Princess Mary Maternity Hospital, Jubilee Road	Wednesday...	Dr. A. F. G. Spinks	Miss Pritchard .	
Diana Street, Westgate ...	25, Diana Street	Tuesday	Dr. A. F. G. Spinks	Miss Levine	
Portland Street, Elswick .	Salvation Army Rooms, Portland Street	Thursday	Dr. Glen Davison ...	Miss Hatfield ..	
Scotswood	Denton Road	Tuesday	Dr. J. C. Spence	Miss Hartwell	
Shieldfield.....	56, Wesley Street	Thursday	Dr. A. F. G. Spinks	Miss Gordon ...	
Spital Tongues.....	Dunn's Cottages	Tuesday (Afternoon only)	Dr. Mabel Campbell	Miss Wigham ..	
St. Peter's	Corner of Glasshouse Street ...	Friday	Dr. Glen Davison ...	Miss Hopper....	
Walker	Presbyterian Church Hall, Church Street	Friday	Dr. A. F. G. Spinks	Miss Morton	Monday, 2 p.m. Tuesday, 2 p.m. Mr. Harvey Evers, F.R.C.S.
Wharncliffe Street, Scotswood Road	18, Wharncliffe Street	Wednesday...	Dr. Mabel Campbell	Miss Shell	Tuesday, 10 a.m. Dr. Mabel Campbell.

Centre Attendances.—It is impossible to exaggerate the importance of regular attendance at the Centres. A doctor can do a very great deal for a child whom he sees, but little or nothing for one whom he does not see. Not only is the health of Centre children better than that of non-Centre children, but it is practically certain that many children owe their lives to the fact that they were taken regularly by their mothers to the Centres. How else can one explain the widely common experience that the mortality among Centre children, even after allowing for ambiguities, is but a fractional part of the general infantile mortality rate—from a quarter to a third less in Newcastle ?

Striking confirmation of this can be got from a glance at the local figures for illegitimacy. It is the universal rule that the death rate among illegitimate children is from 2 to 3 times higher than among legitimate children, and yet in Newcastle-upon-Tyne in 1924 the death rate among the illegitimate was actually less than among the legitimate children. This seems strange, until we notice that out of 253 illegitimate children born in the City during the year, 174 of them were brought to the Centres.

Each year it has been thought that the limit—so far as the number of attendances at the Centres was concerned—had been reached, but each year continues to show an excess over its predecessor. In 1924 the attendances numbered 45,766, which is an increase of 3,251 over the figure for 1923. These attendances were made by 5,587 individual children, of whom 2,921 were boys and 2,666 were girls, and 1,726 of the total were children of twelve months or over : that is, children

who are commonly referred to as "toddlers," and who very frequently show marked deterioration compared with the infant stage. This deterioration is almost entirely due to an insufficient or unsuitable diet, and constant and patient efforts are necessary in instructing mothers on this topic.

It is perfectly easy to tell a mother the details of a diet considered suitable for her particular child, but unfortunately the matter does not end there, for the mother may be so poor as not to be able to buy what are among the cheapest of foods, or being able to buy them, she may not have the facilities for cooking them. It is not generally realised that many families are compelled to do all their cooking on an open sitting room fire, so that their diet is restricted to those substances that can be eaten boiled or stewed or fried. Thus, such a mother is prevented from giving her child a milk pudding cooked, as it usually is, in an oven, and so the child misses something that is undoubtedly attractive, viz., the brown top.

Attendances at Maternity and Child Welfare Centres.

Year.	No. of Attendances.	No. of Individuals.	Average Attendance per Individual.	Average Attendance at each Session.
1918 ...	4,813	..	..	..
1919 ...	8,383	..	..	..
1920 ...	22,596	3,751	6·0	44·2
1921 ...	32,538	4,734	6·8	40·7
1922 ...	36,020	4,835	7·4	44·9
1923 ...	42,515	5,153	8·2	46·5
1924 ...	45,766	5,587	8·2	45·5

Ante-Natal Centres.—Additional ante-natal sessions were began in Walker and Benwell during the year, and from the outset were met by a ready and gratifying response from all concerned. Beginning with a half-day session at each centre the numbers at one—Walker—became so large that it was necessary towards the end of the year to have full day sessions. This is not work that can in any way be hurried; the thorough examination of an expectant mother, with the necessary recording of conditions found, takes time, and it must be considered satisfactory that at the six existing Ante-Natal Clinics under the Corporation scheme, 414 mothers were examined and advised during the year.

Sewing and Knitting Classes.

Each Centre in the City has its one or more days every week which are set apart for the instruction of mothers in these useful arts, and the resulting benefit is substantial.

One or other of the four professional teachers attends her particular Centre regularly, and at Shieldfield Centre the class is voluntarily taken by Mrs. Holmes, to whose kindness and self-sacrifice it is a pleasure to pay tribute.

Voluntary Workers.

One or more lady voluntary workers are now attached to each Centre, and all have given most freely of their services throughout the year. One cannot speak too highly of the value of such aid.

Lectures.

Various lectures or papers relating in some way to Maternity and Child Welfare have been given during the year, among the most important being those at Diana Street Centre (*a*) to a large class of medical students from the College of Medicine, and (*b*) to a meeting of midwives practising in the City (the latter given by Mr. Harvey Evers, F.R.C.S.).

Dried Milk.

The three brands of dried milk recommended at the Centres—Glaxo, Cow and Gate, and Ambrosia—are generally recognised as being among the best brands made, and prolonged experience of them locally amply justifies this opinion. The price of all three brands of milk was raised by 2d. per lb. during the year. The custom of distributing the milk through various chemists whose business premises are easily accessible to residents in all districts of the City, continues, and has been found by experience to be highly satisfactory to all parties concerned. Orders signed by the Medical Officer are given to the mothers at the Centres, and when presented to the chemist by the mother, supplies of the particular brand of milk ordered are given out.

Every care is taken to prevent the improper use of this milk, and it is only given to mothers who for some reason are unable to nourish their children naturally, or for use at or after weaning time.

The following table shews the quantity of dried milk distributed each month during the year :—

Month.	Free. lbs.	At Cost Price. lbs.
January	3,724	3,233
February	4,250	3,483
March	4,693	4,876
April	3,166	3,794
May	2,837	3,984
June	2,960	5,096
July	1,667	3,466
August	1,754	3,808
September	2,164	5,027
October	1,967	3,924
November	1,947	3,751
December	2,894	5,045
	34,023	49,487

Number of children attending Centres :—5,587.

Number of children who were given free milk :—1,511 or 27 per cent. of those who attended the Centres.

Number of children who received orders for milk at cost price only :—637, or 11·4 per cent.

Of the total amount given free :—

33,313 lbs. were given to children.

710 lbs. were given to expectant mothers.

MATERNITY AND CHILD WELFARE CENTRES, 1924

Month.	Ante-Natal Sessions.	Ante-Natal.		Post-Natal.		New Children.			Individuals.			Attendances.			Medical Sessions.	
		Attend-ances.	Individ-uals.	Attend-ances.	Individ-uals.	Under 12 months	Over 12 months	Total.	Under 12 months	Over 12 months	Total.	Under 12 months	Over 12 months	Total.	Number.	Average Attend'ce.
January	7	52	41	3	3	239	44	283	1172	783	1955	2218	1379	3597	75	47·9
February	8	60	40	8	8	235	41	276	1239	820	2059	2659	1604	4263	84	50·7
March	10	71	41	8	7	297	46	343	1324	868	2192	3239	1927	5166	105	49·2
April	6	36	29	4	4	190	44	234	1131	758	1889	2060	1270	3330	71	46·9
May	16	77	52	8	3	260	48	308	1196	776	1972	2543	1424	3967	84	47·2
June	15	87	50	7	6	202	39	241	1162	677	1839	2364	1213	3577	75	47·6
July	12	71	56	3	3	219	30	249	1131	569	1700	1918	876	2794	63	44·3
August	16	89	64	11	9	234	32	266	1174	603	1777	2346	1015	3361	80	42·0
September	20	135	82	11	8	281	55	336	1335	740	2075	3163	1535	4698	105	44·7
October	17	130	93	9	7	230	49	279	1260	690	1950	2558	1319	3877	84	46·1
November	20	130	92	12	12	200	30	230	1145	643	1788	2374	1145	3519	84	41·8
December	23	134	89	12	9	161	28	189	1021	571	1592	2422	1195	3617	95	38·0
Total ..	170	1072	414	96	55	2748	486	3234	3861	1726	5587	29864	15902	45766	1005	45·5

MATERNITY AND CHILD WELFARE CENTRES, 1924.

Centre.	Anti-Natal Sessions.	Ante-Natal.		Post-Natal.		New Children.			Individuals.			Attendances.			Medical Sessions.		Individuals.		
		Attend-ances.	Individ-uals.	Attend-ances.	Individ-uals.	Under 12 months	Over 12 months	Total.	Under 12 months	Over 12 months	Total.	Under 12 months	Over 12 months	Total.	Number.	Average Attend'ce.	Illegiti-mate.	Boys.	Girls.
Benwell	32	161	45	..	..	315	67	382	459	218	677	3519	1732	5251	92	57·07	11	360	317
Byker.....	48	208	93	57	31	333	50	383	476	214	690	3395	1670	5065	92	55·05	21	360	330
City	..	..	..	..	..	234	35	269	305	144	449	2340	1389	3729	99	37·66	13	243	206
Diana Street	..	..	..	..	..	334	36	370	453	158	611	3359	1297	4656	94	49·53	22	313	298
Portland Street	..	..	..	..	..	274	60	334	386	192	578	3104	1947	5051	98	51·54	19	306	272
Scotswood	..	..	..	..	..	110	26	136	169	71	240	1561	1293	2854	94	30·36	11	121	119
Shieldfield	..	..	..	..	..	229	28	257	323	124	447	2660	1362	4022	98	41·04	17	233	214
Spital Tongues	..	..	..	..	..	77	15	92	106	52	158	877	377	1254	47	26·68	1	87	71
St. Peter's.....	..	..	..	..	..	293	63	356	425	236	661	3395	2036	5431	96	56·57	18	349	312
Walker	43	349	130	12	10	251	68	319	363	174	537	2649	1574	4223	96	43·98	20	261	276
Wharncliffe St.	47	354	146	27	14	298	38	336	396	143	539	3005	1225	4230	99	42·72	21	288	251
Total ..	170	1072	414	96	55	2748	486	3234	3861	1726	5587	29864	15902	45766	1005	45·53	174	2921	2666

SUMMARY OF CENTRE REPORT, 1924.

Total Sessions, all Medical	1,005	Average attendance at each....	45·53
Total Individuals	5,587	Average visits per individual....	8·19
Total Ante-Natal Sessions	170	Average attendance at each	6·87
Total Ante-Natal and Post-Natal Individuals	469	Average visits per individual....	2·49
Byker Ante-Natal Sessions	48	Average attendance, 5·52; average visits per individual	2·1
Wharncliffe St. Ante-Natal Sessions	47	Average attendance, 8·10; average visits per individual	2·3
Benwell Ante-Natal Sessions	32	Average attendance, 5·03; average visits per individual	3·5
Walker Ante-Natal Sessions	43	Average attendance, 8·39; average visits per individual	2·5
Illegitimate Children Attending ..	174		

DEATHS.—Owing to the difficulty of getting accurate information on the point, I think it advisable not to quote any figures under this heading; suffice it to say that the number of deaths among children attending the Centres is incomparably less than that among children who do not attend the Centres.

SEWING AND KNITTING CLASSES, 1924.

Centre.	Subject.	Teacher.	Day.	Attendance.	Sessions.	Average.
Benwell	Sewing and Knitting	Miss Crawford	Thursday	412	49	8·4
Byker	Sewing and Knitting	Miss Whipp	Friday	622	48	12·9
City	Knitting	Miss Whipp	Wednesday	1270	97	13·1
City	Sewing	Miss Stokoe	Thursday			
Diana Street	Sewing	Miss Stokoe	Wednesday	1255	96	13·1
Diana Street	Knitting	Miss Whipp	Thursday			
Portland Street	Sewing and Knitting	Miss Robson	Tuesday	733	48	15·3
Scotswood	Sewing and Knitting	Miss Whipp	Tuesday	624	47	13·3
Shieldfield	Sewing	Mrs. A. Holmes	Tuesday	247	46	5·4
Spital Tongues	Sewing	Miss Stokoe	Monday	527	47	11·2
St. Peter's	Sewing	Miss Robson	Wednesday	895	98	9·1
St. Peter's	Knitting	Miss Crawford	Wednesday			
Walker	Knitting	Miss Crawford	Friday	461	47	9·8
Wharncliffe Street	Sewing and Knitting	Miss Crawford	Tuesday	277	46	6·0

Notification of Births Acts.

Of the 7,029 births (gross) which were registered in the City in 1924, 5,048, or 71·8 per cent. were notified as follows :—

Notified by.	Living Births.	Still-Births.
Medical Practitioners	1201	28
Midwives	1846	45
Maternity Hospital	1762	53
Wingrove Hospital	76	6
Gables Maternity Home	133	3
Parents	30	..
	5,048	135

Still-Births.

Of the total notifications of births received, still-births were in the following proportion :—

Year.	Percentage.	Year.	Percentage.
1919	3·5	1922	3·0
1920	3·0	1923	3·0
1921	2·9	1924	2·7

Nine burials were reported by the Superintendents of Cemeteries, and the number of still-births notified was 135.

Details of 114 of the above still-births which were visited by members of the staff :—

Duration of Pregnancy.—At or under 7 months, 25, or 21%; at or under 8 months, 34, or 29%; at full time, 55, or 48%.

Suggested causes of the still-births :—

	Cases.
(*a*) Ill-health of the mother	52
(*b*) Fœtal deformities	19
(*c*) Premature delivery	13
(*d*) Other causes	30

The following table shows the position in the family of the still-born child :—

	Cases.		Cases.
1st child	32	4th child	6
2nd child	15	5th child	11
3rd child	16	6th child	34

In 95 cases it was the first still-birth, in 16 the second, in 2 the third, and in 1 case there were more than three previously still-born.

Syphilis was returned as a cause of death in 6 children below the age of 1 year, and the following table gives the ages at deaths and a comparison with previous years :—

Ages.	1924	1923	1922	1921
Under one week	1	..	3	3
One week and under two weeks	..	..	1	1
Two weeks and under three weeks	..	..	..	1
Three weeks and under four weeks.....	..	..	2	..
One month and under three months ...	4	3	2	1
Three months and under six months ..	1	1	1	2
Six months and under nine months ...	..	1	..	2
Nine months and under 12 months	..	..	..	1
	6	5	9	11

Health Visitors.—14 Health Visitors, including the Chief Health Visitor, were engaged solely in Maternity and Child Welfare Work.

5,596 births were visited, and 20,062 re-visits were paid, an average of nearly 4 visits per child. These give a total of 25,658 visits to children under 1 year.

WORK OF HEALTH VISITORS.

Summary of Visits.

	Primary.	Subsequent.	Total.
Births	5,596	20,062	25,658
Measles	3,247	2,149	5,396
Pneumonia	935	963	1,898
Diarrhœa	33	38	71
Children over One Year	....	....	413
Hospital Cases	....	....	42
Expectant Mothers	....	....	491
Special Visits	....	....	1,067
	....	....	35,036

The addresses of 75 children who left the City were sent to the Medical Officers of Health for the districts to which they had gone to reside.

Summary of Infants on Visiting List:—

Of 5,460 children born in the City in 1923, 4,598 completed their first year in 1924, and of the remainder:

550 died.
108 left the City.
167 disappeared and could not be traced.
37 were visited only once.

The following figures are therefore based on the 4,598 who completed the first year, *plus* the 550 who died, making in all a total of 5,148.

Influence of Housing Conditions.

During the 17 years, 1908—1924, 60,569 births have been under the supervision of the Health Visitors, and of these 7,116 died. The following table shows the numbers of births and deaths in the various classes of house :—

Year.	Houses of							
	1 Room.		2 Rooms.		3 Rooms.		4 Rooms or more.	
	Births	Deaths	Births	Deaths	Births	Deaths	Births	Deaths
1908.....	247	32	515	57	312	32	13	2
1909.....	339	53	694	86	168	32	29	3
1910.....	536	62	723	68	51	4	7	2
1911.....	462	68	794	79	77	6	20	1
1912.....	465	48	746	60	110	6	25	1
1913.....	241	40	348	28	91	3	17	3
1914.....	245	36	375	31	90	11	25	3
1915.....	631	104	2,140	306	1,416	144	692	74
1916.....	611	121	2,333	343	1,584	180	756	85
1917.....	730	104	2,199	284	1,349	150	776	84
1918.....	607	90	2,018	270	1,285	144	766	83
1919.....	664	111	2,056	306	1,358	188	810	102
1920.....	843	167	2,155	291	1,529	171	1,052	121
1921.....	1,263	140	2,523	234	1,651	134	1,036	88
1922.....	1,223	159	2,267	241	1,342	97	655	61
1923.....	1,357	149	2,187	243	1,155	86	637	54
1924.....	1,440	188	1,946	200	1,096	100	666	62
17 years ..	11,904	1,672	26,019	3,127	14,664	1,488	7,982	829
Death rate per 1,000 births		140·5		120·2		101·4		103·9

The mortality per 1,000 births in 1924 was as follows :—

1 roomed dwellings	130
2 roomed dwellings	103
3 roomed dwellings	91
Dwellings over 3 rooms	93

Feeding of the 5,148 children under supervision :—

	Breast.	Mixed.	Artificial.
	%	%	%
Children who *survived* first year ; feeding during first month	94	1·5	4·5
Children who *died* during first year ; feeding during first month.....	86	3	11
Children who *survived* first year ; feeding at nine months	77	4	19
Children who *died* during first year ; feeding at time of death	70	5	23
Feeding of 43 children who died from enteritis	35	9	56

Illegitimacy.—253 illegitimate children were born ; of these 25 died, a death-rate of 99 per 1,000, as compared with 100 for all births.

MIDWIVES ACTS, 1902 and 1918.

During the year 43 midwives notified the Local Supervising Authority of their intention to practise in the City, and of these 37 held the examination certificate of the Central Midwives Board, and six were registered as having been in *bona fide* practice before the passing of the Midwives Act. There was an increase of five midwives during 1924.

Inspections—267 visits were paid by the Superintendent of Midwives to the homes of certified midwives for the purpose of inspecting midwifery bags and appliances, and to ascertain that the necessary records of their work were being satisfactorily kept, also to investigate cases of ophthalmia neonatorum, septicæmia, or other abnormalities occurring in their practices. In addition, 162 visits were paid to midwives' cases on account of some abnormal condition. The results of these inspections were generally satisfactory.

The clothing and appliances of six midwives were disinfected after being in contact with puerperal septicæmia.

Two handy-women were interviewed as to conduct and on investigation it was found that they had acted in emergencies.

Births attended by Midwives.—1,846 living births and 45 still-births were attended by midwives during the year; these figures show an increase of 82 in the former and of 8 in the latter. Midwives attended 27 per cent. of the total births in the City, as compared with 27 per cent in 1923, and 26 per cent. in 1922.

Lectures to Midwives.—Fortnightly meetings of midwives practising in the City were held in the Health Department. Discussions took place and midwives were kept up-to-date with regard to new requirements and with general progress. The closest co-operation and loyalty exist between the midwives practising in the City and the staff of the Health Department, and midwives are encouraged to send their cases to the ante-natal clinics. Much benefit was derived by those mothers who were sent, as well as by the midwives concerned.

Notices for Medical help sent to Local Authority by the Midwives:—

FOR THE MOTHER.

During Pregnancy—

Ante Partum Hæmorrhage ...	2
Abortions	7
	9

During Labour—

Uterine Inertia	33
Malpresentations	17
Contracted Pelvis	1
Retained Placenta	5
Placenta Prævia	1
Post Partum Hæmorrhage ...	1
Ruptured Perineum	30
	88

During Puerperium—

Rise of Temperature.....	9
Fits	4
Undefined Illness of Mother ..	10
	23
Total calls for mother	120

FOR CHILD.

Prematurity	27
Discharging Eyes	22
Cyanosis	3
Congenital Defects	4
Convulsions, etc.....	11
	67
Total calls for mother and child	187

In 10 per cent. of the midwives' cases the services of a doctor were requisitioned.

Claims from Doctors for Fees in respect to calls from Midwives, viz. :—

	Cases
For forceps delivery.....	37
For post partum hæmorrhage	3
For illness of mother	14
For illness of child	9
For premature birth	3
For discharging eyes	5
Total cases	71

One claim for *payment of midwife's fee* was received.

Ophthalmia Neonatorum.—The number of cases notified was 60, of which 48 were visited, the remainder being cases occurring in Hospital, or admitted to Hospital from outside areas. This number is a decrease of 10 on that for 1923. The confinements were attended by :—

Doctors	28
Midwives.....	18
Maternity Hospital.....	8
Wingrove Hospital	1
Gables Maternity Home	2
	57

Three cases were born outside Newcastle area and were sent into the Royal Victoria Infirmary for treatment, and notified from there as suffering from ophthalmia neonatorum.

281 visits were paid to the 48 cases in the City, and the ultimate results were :—

Recovered completely	44
Slightly defective in one eye	3
Died	1
	48

The *ophthalmia incidence* per 1,000 births for the last five years has been as follows :—

1920	14·4
1921	13·0
1922	9·9
1923	11·0
1924	8·0

Puerperal Septicæmia.—20 cases of this disease were notified during the year, five of which occurred outside the City area and were admitted to Hospital in the City. Of the remaining 15 the following table shows the attendance at birth :—

Doctors	7
Midwives	6
Wingrove Hospital	1
No one in attendance at Birth (Inquest)	1
Total	15

Deaths during the Puerperal Period.—During the year 15 deaths occurred in the City during the puerperal period, and the following table gives the causes and a comparison with the two previous years :—

Causes.	1924	1923	1922
Abortions	1	3	4
Accidents of Pregnancy	..	..	1
Puerperal Hæmorrhage	..	5	7
Other Accidents of Child-birth	6	1	3
Puerperal Fever	6	10	7
Puerperal Albuminuria and Convulsions	2	5	4
Puerperal Insanity	..	..	1
Embolism and Sudden Death	..	..	1
Puerperal Phlegmasia	..	2	..
	15	26	28

I am, Sir,

Your obedient servant,

A. F. G. Spinks, M.D.,
Maternity and Child Welfare Medical Officer.

Health Department,
Town Hall,
Newcastle-upon-Tyne,
31st May, 1925.

INCLUDING REPORTS OF THE
RESIDENT MEDICAL OFFICER OF THE
INFECTIOUS DISEASES HOSPITAL
AND THE BACTERIOLOGIST.

III.—INFECTIOUS DISEASE.

FEVERS, FOOD POISONING,
CITY HOSPITAL FOR INFECTIOUS DISEASES,
DISINFECTION, BACTERIOLOGY.

INFECTIOUS DISEASES.

NUMBER OF CASES PER 1,000 POPULATION IN 1924.

DISTRICT.	ATTACK-RATE PER 1,000 POPULATION.						
	Small-pox.	Typhus	Scarlet Fever.	Diph-theria.	Enteric Fever and Con-tinued Fever.	Puer-peral Fever.	Ery-sipelas.
England and Wales	0·10	0·00	2·16	1·07	0·11	0·06	0·33
NEWCASTLE-UPON-TYNE	**0·02**	..	**2·82**	**0·89**	**0·10**	**0·05**	**0·53**
Hull	0·02	..	1·30	1·10	0·10	0·05	0·36
Leeds	0·01	..	2·66	0·61	0·05	0·11	0·50
Bradford	0·00	..	1·50	0·81	0·16	0·07	0·54
Sheffield.....	0·01	..	2·54	0·98	0·09	0·16	0·54
Manchester	..	..	2·32	0·74	0·13	0·15	0·37
Salford	..	..	1·65	1·17	0·10	0·07	0·36
Liverpool.....	..	..	4·50	1·30	0·06	0·08	0·50
Nottingham	0·03	..	2·11	0·88	0·05	0·03	0·33
Leicester	0·02	..	1·38	1·77	0·02	0·05	0·39
Stoke-on-Trent	0·00	0·00	6·70	0·80	0·01	0·08	0·70
Birmingham	..	..	2·31	1·97	0·05	0·13	0·42
Cardiff	..	..	0·84	0·90	0·05	0·11	0·34
Bristol	0·00	..	2·14	2·53	0·11	0·11	0·46
Portsmouth.....	..	..	2·91	2·15	0·21	0·04	0·25
†London	0·00	..	2·50	2·30	0·09	‡3·43	0·41
Gateshead	..	..	3·30	0·90	0·04	0·03	0·30
South Shields	0·00	..	5·79	0·54	0·09	0·04	0·20
Tynemouth	0·01	0·00	2·09	0·45	0·81	0·03	0·34
Sunderland	0·00	0·00	1·37	0·40	0·03	0·006	0·40
Middlesbrough	3·48	..	5·24	0·69	0·03	0·04	0·56
†Northumberland	0·95	..	2·87	0·57	0·15	0·02	0·42
†Durham	0·02	..	4·08	0·92	0·09	0·04	0·47

† Administrative County. ‡ Per 1,000 births.

DEATHS (CORRECTED) FROM NOTIFIABLE INFECTIOUS DISEASES AND NON-NOTIFIABLE ZYMOTIC DISEASES, EXCLUSIVE OF TUBERCULOSIS

WARD.	Diphtheria.	Erysipelas.	Scarlet Fever.	Typhus Fever.	Enteric Fever.	Cerebro-Spinal Fever.	Encephalitis Lethargica.	Poliomyelitis	Measles.	Puerperal Fever.	Smallpox.	Whooping Cough.	Zymotic Diarrhœa (under 2 years of age).	Chicken Pox.
St. Nicholas'	..	1	1	..	..	..	..	..	1	..	..	1	..	..
*St. Thomas'	1	..	..	..	..	..	1	..	..	..	..	..	..	..
St. John's	2	..	..	..	..	..	..	..	9	..	..	1	4	..
Stephenson	3	..	..	..	3	..	..	..	5	2	..	2	8	..
Armstrong	2	..	..	..	..	..	1	..	1	2	..	2	3	..
Elswick	..	..	..	..	..	..	1	..	..	..	..	1	2	..
Westgate	1	..	..	..	..	..	4	..	1	..	..	3	3	..
†Arthur's Hill	1	..	..	..	..	..	..	..	..	..	..	1	..	..
Benwell	2	..	..	..	..	..	1	..	1	1	..	1	6	..
Fenham	..	..	..	..	..	..	..	..	2	..	..	1	1	..
All Saints'	..	1	..	..	..	..	..	..	17	..	..	4	4	..
St. Andrew's	1	..	..	..	..	..	..	..	2	..	..	3	2	..
Jesmond	..	..	..	..	..	..	2	..	..	..	..	..	..	..
Dene	..	..	..	..	..	1	1	..	..	..	..	..	2	..
Heaton	..	..	..	..	..	..	..	..	1	..	..	1	..	..
Byker	1	1	2	..	..	..	..	..	6	..	..	2	7	..
St. Lawrence	1	..	1	..	..	1	2	..	9	..	..	3	8	..
St. Anthony's	1	..	..	..	..	..	2	..	4	1	..	..	8	..
‡Walker	1	..	..	..	..	..	..	..	2	..	..	3	8	..
CITY	17	3	4	..	3	2	15	..	61	6	..	29	66	..

* Includes Royal Victoria Infirmary and Fleming Memorial Hospital for Sick Children.
† Includes Poor Law Institution and Wingrove Hospital.
‡ Includes City Hospital for Infectious Diseases.

For particulars of deaths from **TUBERCULOSIS** see pages 58A and 139 to 146.

NOTIFIED CASES OF INFECTIOUS DISEASE,

EXCLUSIVE OF TUBERCULOSIS.

AGES OF CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1924.

(TABLE II. OF MINISTRY OF HEALTH.)

NOTIFIABLE DISEASE.	AT AGES—YEARS.								GROSS TOTAL (ALL AGES).		* Net Cases.
	Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 45.	45 to 65.	65 and upwards.	Ages not known	1924.	1923.	1924.
Diphtheria (including Membranous Croup)	2	87	111	31	24	3	..	7	265	200	256
Erysipelas	2	4	7	34	46	42	23	2	160	131	152
Scarlet Fever	6	173	505	84	33	6	..	9	816	492	805
Typhus Fever	..	..	..	..	..	..	..	..	..	..	..
Enteric Fever	..	3	12	5	7	..	..	2	29	7	28
Cerebro-Spinal Fever	1	1	1	..	1	1	..	..	5	7	5
Acute Poliomyelitis	..	1	1	..	..	..	..	..	2	2	2
Acute Polio-Encephalitis	..	..	..	..	..	..	..	..	..	..	..
Encephalitis Lethargica	1	13	35	32	31	11	1	..	124	2	96
Measles and Rubella	211	1872	1368	32	13	2	1	5	3504	6875	3504
Puerperal Fever	..	..	..	9	10	1	..	..	20	13	15
Ophthalmia Neonatorum	60	..	..	..	..	..	..	..	60	70	55
Pneumonia	155	379	215	112	185	113	34	12	1205	843	1168
Malaria	..	..	..	..	..	..	..	..	..	..	..
Dysentery	..	..	..	..	..	..	..	..	..	2	..
Trench Fever	..	..	..	..	1	..	..	..	1	..	1
Smallpox	..	1	..	..	2	2	..	..	5	..	5
Chicken Pox	54	276	439	16	5	1	..	..	791	903	791
TOTALS	492	2810	2694	355	358	182	59	37	6987	9547	6883

* Cases from outside the City excluded for the purpose of calculating NET death rates.

WARD DISTRIBUTION OF INFECTIOUS DISEASES (NET).

(TABLE II. OF MINISTRY OF HEALTH.)

WARD.	Diphtheria.	Erysipelas.	Enteric Fever.	Scarlet Fever.	Cerebro-Spinal Fever.	Poliomyelitis.	Acute Polio-Encephalitis.	Encephalitis Lethargica.	Measles.	Rubella.	Puerperal Fever.	Ophthalmia Neonatorum.	Acute Primary Pneumonia.	Acute Influenzal Pneumonia.	Smallpox.	Trench Fever.	Chicken Pox.	TOTAL.
St. Nicholas'	2	2	..	2	..	..	..	..	24	1	1	..	7	1	..	..	2	42
St. Thomas'	15	6	1	31	..	1	..	5	113	3	..	..	31	7	1	..	31	245
St. John's	8	8	1	27	1	..	..	9	275	6	1	3	102	11	..	..	40	492
Stephenson	23	11	12	36	..	..	..	10	232	1	1	1	74	8	..	..	31	440
Armstrong	20	10	1	56	1	..	..	7	61	8	3	8	74	41	..	..	30	320
Elswick	9	5	..	40	..	..	..	7	59	2	..	5	17	5	1	..	34	184
Westgate	7	7	..	43	..	..	..	7	238	2	..	2	59	6	..	..	40	411
Arthur's Hill	8	11	..	35	..	..	..	2	30	4	1	3	58	3	..	..	17	172
Benwell	31	13	..	107	..	..	..	5	92	28	3	8	102	13	..	1	100	503
Fenham	5	4	2	30	..	..	..	2	30	1	3	6	30	8	3	..	20	144
All Saints'	10	14	3	27	1	..	..	3	497	6	..	1	149	6	..	..	39	756
St. Andrew's	4	13	3	18	..	..	..	2	170	5	..	1	40	1	..	..	13	270
Jesmond	2	2	..	23	..	..	..	2	27	4	..	1	8	1	..	..	27	97
Dene	8	3	..	59	1	..	..	3	45	7	1	..	9	5	..	..	35	176
Heaton	8	7	1	48	..	..	..	4	164	9	..	2	18	5	..	..	41	307
Byker	24	5	1	55	..	..	..	13	439	2	..	1	33	5	..	..	38	616
St. Lawrence	38	10	1	53	1	..	..	11	409	14	1	7	29	3	..	..	98	675
St. Anthony's	16	5	..	40	..	..	..	3	257	8	..	2	37	12	..	..	15	395
Walker	18	16	2	75	..	1	..	1	223	8	..	4	134	16	..	..	140	638
CITY	256	152	28	805	5	2	..	96	3385	119	15	55	1011	157	5	1	791	6883

For particulars of cases of **TUBERCULOSIS**, see Section IV.

WARD INCIDENCE OF INFECTIOUS DISEASES,

EXCLUSIVE OF TUBERCULOSIS.

WARD.	NOTIFIABLE DISEASES—Cases per 1,000 Population.														DEATHS per 1,000 Pop.		
	Diphtheria.	Erysipelas.	Scarlet Fever.	Enteric Fever.	Cerebro-Spinal Fever.	Poliomyelitis.	Encephalitis Lethargica.	Measles (including Rubella).	Puerperal Fever.	Smallpox.	Chickenpox.	Ophthalmia Neonatorum.	Pneumonia.	Dysentery	Measles. (including Rubella).	Whooping Cough.	Zymotic Diarrhœa (under 2 years of age).
St. Nicholas' ..	0·56	0·56	0·56	..	..	..	..	6·9	0·28	..	0·56	..	2·23	..	0·28	0·28	..
*St. Thomas' ..	1·01	0·43	2·09	0·06	..	0·06	0·34	7·8	..	0·06	2·09	..	2·56	..	..	..	..
St. John's	0·50	0·50	1·70	0·06	0·06	..	0·57	17·6	0·06	..	2·51	0·19	7·08	..	0·56	0·06	0·25
Stephenson ...	1·15	0·55	1·80	0·60	..	..	0·50	11·6	0·05	..	1·55	0·05	4·11	..	0·25	0·10	0·40
Armstrong	1·21	0·61	3·40	0·06	0·06	..	0·42	4·1	0·18	..	1·82	0·48	6·98	..	0·06	0·12	0·18
Elswick	0·69	0·38	3·06	..	..	..	0·54	4·6	..	0·08	2·60	0·38	1·68	..	..	0·08	0·15
Westgate	0·43	0·43	2·67	..	..	..	0·43	14·9	..	..	2·48	0·12	4·06	..	0·06	0·19	0·19
†Arthur's Hill ..	0·79	1·09	3·47	..	..	..	0·20	3·3	0·10	..	1·69	0·30	6·05	..	..	0·10	..
Benwell	1·52	0·64	5·25	..	..	..	0·24	5·8	0·15	..	4·91	0·39	5·64	..	0·05	0·05	0·29
Fenham	0·41	0·33	2·45	0·16	..	..	0·16	2·5	0·24	0·24	1·63	0·49	3·09	..	0·16	0·08	0·08
All Saints'	0·55	0·77	1·49	0·17	0·06	..	0·17	27·7	..	..	2·15	0·06	8·56	..	0·94	0·22	0·22
St. Andrew's ..	0·30	0·99	1·37	0·23	..	..	0·15	13·3	..	..	0·99	0·76	3·13	..	0·15	0·23	0·15
Jesmond	0·18	0·18	2·12	..	..	..	0·18	2·8	..	..	2·49	0·09	0·83	..	..	..	..
Dene	0·62	0·23	4·55	..	0·08	..	0·23	4·0	0·08	..	2·70	..	1·08	..	..	..	0·15
Heaton	0·54	0·47	3·22	0·07	..	..	0·27	11·6	..	..	2·74	0·13	1·54	..	0·07	0·07	..
Byker	1·32	0·27	3·02	0·05	..	..	0·71	24·2	..	..	2·09	0·05	2·09	..	0·33	0·11	0·38
St. Lawrence ..	1·86	0·49	2·59	0·05	0·05	..	0·54	20·6	0·05	..	4·78	0·34	1·56	..	0·44	0·15	0·39
St. Anthony's .	0·91	0·29	2·29	..	..	..	0·17	15·1	..	..	0·86	0·11	2·80	..	0·22	..	0·46
‡Walker	1·05	0·93	4·38	0·12	..	0·06	0·06	13·5	..	..	8·18	0·23	8·77	..	0·12	0·17	0·47
CITY	0·90	0·53	2·82	0·10	0·02	0·007	0·34	12·2	0·05	0·02	2·77	0·19	4·08	..	0·21	0·10	0·23

* Includes Royal Victoria Infirmary and Fleming Memorial Hospital for Sick Children. † Includes Poor Law Institution and Wingrove Hospital.
‡ Includes City Hospital for Infectious Diseases, Walker Gate.

For Particulars of **TUBERCULOSIS,** see table on page 146.

HOUSEHOLDS AFFECTED WITH INFECTIOUS DISEASES,
EXCLUSIVE OF TUBERCULOSIS, MEASLES AND CHICKEN-POX.

DISEASES.	HOUSEHOLDS WITH						Military or Naval Cases	Public Institutions *	TOTAL CASES. (Gross).	Cases from outside of City.	NET CASES.
	Single Cases	2 Cases each	3 Cases each	4 Cases each	5 Cases each	6 Cases & over					
Diphtheria (including Membranous Croup)	213	15	3	..	..	..	2	11	265	9	256
Erysipelas	140	..	..	..	..	..	..	20	160	8	152
Scarlet Fever	591	59	13	6	1	..	..	39	816	11	805
Enteric (or Typhoid Fever)	18	..	..	..	..	1(9)	..	2	29	1	28
Cerebro-Spinal Fever	5	..	..	..	..	..	..	..	5	..	5
Poliomyelitis	2	..	..	..	..	..	..	..	2	..	2
Encephalitis Lethargica	92	2	..	..	..	..	..	28	124	28	96
Puerperal Fever	14	..	..	..	..	..	..	6	20	5	15
Ophthalmia Neonatorum	53	..	..	..	..	..	..	7	60	5	55
Pneumonia	1042	32	1	1	..	..	..	92	1205	37	1168
Smallpox	2	..	1	..	..	..	..	..	5	..	5
Trench Fever	1	..	..	..	..	..	..	..	1	..	1
TOTAL	2173	108	18	7	1	1 (9)	2	205	2692	104	2588

* See below.

Schools and Infectious Disease.—It was not found necessary to close any school on account of infectious disease during the year.

PUBLIC INSTITUTIONS AND INFECTIOUS DISEASE.

The following notifications were received during the year :—

INSTITUTIONS, &C.	Diphtheria.	Erysipelas.	Scarlet Fever.	Encephalitis Lethargica.	Measles and Rubella.	Puerperal Fever.	Pneumonia.	Chicken-pox.	Ophthalmia Neonatorum.	Enteric Fever.	TOTAL. *
Royal Victoria Infirmary	4	5	11	28	7	5	37	3	3	2	105
Fleming Memorial Hospital	..	1	..	..	5	..	..	1	..	..	7
War Pensions Hospital	..	..	1	..	..	..	..	..	..	..	1
Wingrove Hospital	1	..	1	..	4	1	51	..	1	..	59
School For the Blind	..	1	2	..	4	..	..	..	..	..	7
City Hospital for Infectious Diseases (Staff)	..	..	11	..	1	..	..	..	..	..	12
Deaf and Dumb Institution	1	1	..	..	..	..	1	..	..	..	3
Eye Infirmary	..	..	1	..	..	..	..	..	..	..	1
St. Cuthbert's Grammar School	..	..	..	..	..	..	1	..	..	..	1
St. Ann's Convent	..	..	..	..	..	..	1	..	..	..	1
Maternity Hospital	..	..	..	..	..	..	..	..	2	..	2
Throat and Ear Hospital	1	..	..	..	..	..	..	..	..	..	1
Military Barracks	2	..	..	..	..	..	..	..	..	..	2
Mary Magdalen Hospital	..	..	..	..	..	..	..	1	..	..	1
Northern Counties Orphanage	..	..	..	..	..	..	..	4	..	..	4
St. Vincent's Home	..	..	..	..	1	..	..	..	..	..	1
Lady Stephenson Orphanage	..	..	2	..	..	..	..	..	..	..	2
H.M. Prison	..	1	..	..	..	..	1	..	..	..	2
The Gables, Elswick Road	..	..	..	..	..	..	..	..	1	..	1
West End Day Nursery	..	..	..	..	1	..	..	..	..	..	1
TOTAL	9	9	29	28	23	6	92	9	7	2	214

* Does not include any cases belonging to the City which could properly be assigned to their homes.

MILK SUPPLY IN RELATION TO INFECTIOUS DISEASES.

The source of the milk supply was ascertained in every case of fever and diphtheria. In no instance was there reason to suspect that milk was responsible for the conveyance of infection.

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21 cases of scarlet fever and 8 cases of diphtheria occurred at business premises of various kinds, as shown in the following tables :—

SCARLET FEVER.

Laundry	1	Ice Creamery	1	Dressmaking and Tailoring	2
Boarding House ...	4	Newsagent	1	Dental Surgeon ...	2
Licensed Premises..	4	General Dealer.....	4	Private Teaching...	2

DIPHTHERIA.

Licensed Premises .	3	Milk Dealers.....	2	General Dealer.....	2
Dentist	1				

SCARLET FEVER.

Notifications of 805 cases were received during the year, and there were 4 deaths, which is equivalent to a mortality of 0·5 per cent. The type of the disease was mild on the whole.

DIPHTHERIA.

256 cases were notified during the year, and 17 died, a case mortality of 6·6 per cent.

Antitoxin was distributed free to medical practitioners in the City as follows :—

Number of medical practitioners who made application for antitoxin	40
Number of phials of antitoxin supplied	209
Number of cases of diphtheria notified	256
Number of notified cases removed to Hospital	230
Number of Hospital cases in which antitoxin was injected prior to admission	35

The fatality of the disease in recent years is shown in the subjoined table :—

Year.	Diphtheria Cases. (All Forms.)	
	Number.	Case Mortality (per cent.).
1909	546	12·7
*1910	443	9·0
1911	507	7·5
1912	501	6·6
1913	368	7·6
1914	362	7·7
1915	275	9·5
1916	272	10·3
1917	226	14·6
1918	250	9·2
1919	320	6·9
1920	348	6·9
1921	353	6·2
1922	254	5·9
1923	200	5·0
1924	256	6·6

* Antitoxin first distributed gratis April, 1910.

Particulars of the type of the disease as noted in cases sent to hospital will be found later in the section dealing with the City Hospitals.

MEASLES AND RUBELLA.

3,504 cases (including 119 of rubella) were notified, and there were 61 deaths (corrected) in 1924, representing a death rate of 0·21 per 1,000 population, as compared with 0·54 in 1923, and a case mortality of 1·74 per cent. of notified cases.

DEATHS, 1924 (CORRECTED).

MONTH.	YEARS OF AGE.							Total.
	0-1.	1-2.	2-3.	3-4.	4-5.	5-10.	Over 10.	
January	..	..	1	..	..	..	..	1
February ...	..	1	..	..	..	..	..	1
March	..	1	..	..	..	..	..	1
April	..	..	..	..	..	..	..	..
May	1	..	1	..	..	1	..	3
June	1	2	1	1	..	..	..	5
July	..	3	1	..	..	..	..	4
August	1	1	..	..	..	..	..	2
September ..	1	2	..	..	..	..	..	3
October	..	..	..	1	..	..	..	1
November...	1	6	4	4	1	1	..	17
December ..	2	9	5	5	2	1	..	23
TOTAL ...	7	24	13	11	3	3	..	61

The following table shows the deaths in the various wards, and at different age periods :—

WARD.	Under 3 months.	3 and under 6 months.	6 and under 9 months.	9 and under 12 months.	1 and under 2 years.	2 and under 3 years.	3 and under 4 years.	4 and under 5 years.	5 and under 10 years.	Over 10 years.	TOTALS.
St. Nicholas'	..	..	..	..	1	..	..	..	..	..	1
St. Thomas'	..	..	..	..	..	..	..	..	..	..	..
St. John's.....	..	..	1	1	5	1	1	..	..	..	9
Stephenson	..	..	2	..	..	1	2	..	..	..	5
Armstrong	..	..	..	..	..	1	..	..	..	..	1
Elswick.....	..	..	..	..	..	..	..	..	..	..	..
Westgate	..	..	..	..	1	..	..	..	..	..	1
Arthur's Hill	..	..	..	..	..	..	..	..	..	..	..
Benwell	..	..	..	..	..	..	..	1	..	..	1
Fenham	..	..	..	..	..	1	..	..	1	..	2
All Saints'	..	..	1	1	4	4	5	2	..	..	17
St Andrew's	..	..	..	..	2	..	..	..	..	..	2
Jesmond	..	..	..	..	..	..	..	..	..	..	..
Dene	..	..	..	..	..	..	..	..	..	..	..
Heaton	..	..	..	..	..	..	1	..	..	..	1
Byker	..	..	..	..	2	3	1	..	..	..	6
St. Lawrence	..	..	..	1	5	1	..	..	2	..	9
St. Anthony's	..	..	..	..	4	..	..	..	..	..	4
Walker	..	..	..	..	..	1	1	..	..	..	2
TOTAL	..	..	4	3	24	13	11	3	3	..	61

Each Health Visitor visited and revisited selected cases occurring in her district. By this arrangement each case is seen immediately on receipt of the notification, and advice is given regarding the nursing and isolation

of the patient. The cases are kept under supervision until they recover, and should subsequent cases occur in the family they are recorded.

Measles Cases, including Rubella, notified during 1924.

Cases notified by Medical Practitioners	2,827
Cases found by Health Visitors	634
Cases notified by Education Authorities	2
Cases notified by Parents	39
Cases found from Returns of Deaths	2
	3,504

Of the total number of measles cases notified, 3,247, in 2,488 households (or 92·6 per cent.) were visited by the Health Visitors, and 2,149 revisits were paid.

The following particulars refer to the cases visited :—

	Dwellings of					Total houses visited.
	1 room.	2 rooms.	3 rooms.	4 rooms.	More than 4 rooms.	
Families	537	975	541	335	100	2,488
Children	1,372	3,105	1,566	899	258	7,200
Cases	724	1,333	663	401	*126	3,247
Percentage of Cases to Children	53	43	42	45	49	45
Cases developing Pneumonia	34	41	15	2	1	93
Percentage of cases developing Pneumonia	4·7	3·1	2·3	0·5	0·8	2·9
Deaths from Measles	21	26	5	2	1	55
Cases notified as Measles, Death certified as due to Pneumonia, Bronchitis or Convulsions	6	4	1	..	1	12
Case Mortality per cent.	3·7	2·3	0·9	0·5	*1·6	2·1

* In addition to the 126 cases, 257 cases were reported in better-class houses and were not visited. Amongst these no death occurred, so that the actual mortality rate in houses of over 4 rooms was 0·55 per cent.

Medical Attendance.—In 93 per cent. of the cases visited a doctor was in attendance.

Condition of Patient.—In 85 per cent. of the cases visited the disease ran a normal course, but bronchitis, pneumonia or other complications developed in the remainder.

Attendance at Schools.—1,174, or 36·1 per cent. of the affected children visited had previously attended school, and 2,073, or 63·9 per cent. had never attended school. In 1,256 of these latter cases, however, or 38·6 per cent., other children from the infected houses were scholars.

The following were the ages of children (visited) suffering from measles :—

Under 1 year	206
1–2 years	363
2–3 years	427
3–4 years	485
4–5 years	531
5–6 years	606
Over 6 years	629
	3,247

WHOOPING COUGH.

29 deaths occurred from whooping cough. The particulars are as follows :—

Month.	Years of Age.						Total.
	0-1.	1-2.	2-3.	3-4.	4-5	5-10.	
January	..	..	2	..	1	..	3
February	2	2	2	..	..	..	6
March	2	1	1	..	..	..	4
April	1	..	..	..	..	..	1
May.....	2	2	..	..	..	..	4
June	..	..	..	..	..	1	1
July	1	..	..	..	..	..	1
August	1	1	1	..	..	..	3
September	..	..	..	..	..	..	..
October	..	..	..	..	..	..	..
November	..	1	..	..	..	..	1
December	3	1	..	..	..	1	5
Total	12	8	6	..	1	2	29

The death rate in 1924 was equivalent to 0·10 per 1,000 population, as compared with 0·27 in 1923.

ENTERIC FEVER.

28 cases were notified during the year, 3 of which died, giving a death rate of 0·01 per 1,000 population, and a case mortality of 10·7 per cent.

30 cases of enteric fever, including 2 extra mural patients, were admitted to the City Hospital for Infectious Diseases during the year. The first 2 occurred during the months of May and July, and it was impossible to state definitely the origin of infection. Of the remaining 28 cases, 11 occurred in August, 11 in September, 3 in October and 3 in November. There were 3 deaths.

All except one proved on bacteriological examination to be due to the Typhoid bacillus, the exception being due to the Paratyphoid B. bacillus.

Investigation of the sudden outbreak in August elicited the information that all the patients had partaken of ice cream, and this had been obtained by the victims while on holiday in the North Shields and Whitley Bay areas. The Medical Officers of Health of Tynemouth and Whitley Bay were communicated with, and it transpired that a case of enteric fever had occurred in the house of an ice cream manufacturer in North Shields. The patients in question were found to have been supplied with ice cream by this man's retailers in Whitley Bay.

The 11 subsequent cases in September and 2 in October were also directly traced to this source of infection.

No definite origin could be ascertained in the 4 remaining cases, but it is probable that they were indirectly infected by the same vehicle, or by one or other of the preceding enteric fever patients.

It is worthy of note that out of a family of 9 persons living in a two-roomed house in the Scotswood Road district, 8 became infected with enteric fever.

Two of the children had consumed infected ice cream, and after contracting the disease, they had undoubtedly infected the father, mother, and four other children.

The 3 fatal cases mentioned above were all members of this family ; 2 were treated by conservative methods, and the other was sent to the Royal Victoria Infirmary for operation. Death in each case was due to perforation of the gut. " Perforation " occurred in the case of one other patient in this epidemic ; conservative treatment was adopted, and the patient recovered. Statistical evidence for England and Wales goes to show that 98 per cent. of patients with perforated enteric ulcers terminate fatally when surgical intervention is undertaken.

Of 63 cases of enteric fever admitted to the City Hospitals since 1921, there have been 7 cases presenting this complication. 3 were operated upon, and all 3 died. The remaining 4 (all of whom gave the typical clinical picture of perforation), were treated by conservative methods. 2 died, and 2 recovered. The post mortem findings in these cases indicate that in the majority of ruptured ulcers the perforation commences as a minute leak, which becomes rapidly shut off by the omentum : only a localised peritonitis is produced, and complete recovery ensues. On the other hand, the occlusion of the aperture by the omentum may be incomplete, and the oozing slowly continues. The adjacent portions of intestine are usually considerably eroded, and frequently the only visible covering and mainstay of the gut is a thin sheet of damaged peritoneum.

The early clinical signs in the average case are generally few, and these are masked by the normal abdominal symptoms and physical signs peculiar to enteric fever. Further, perforation is most apt to occur during the third week of disease, and this is also the period when the general condition and resistance of the patient are extremely low. In such cases the shock of a major operation, involving the resection of a considerable length of gut, is sufficient to turn the scale unfavourably when the life is hanging in the balance.

These factors explain to some extent the high mortality in operated cases. It is considered, however, that conservative methods combining rest with the judicious administration of sedatives, are more likely to lead to a hopeful issue.

DIARRHŒA.

There were in all 81 deaths from the disease, equal to a death rate of 0·28 per 1,000 population, and this number included 66 deaths of children under two years of age.

TYPHUS.

No case of this disease occurred during the year.

SMALLPOX.

Smallpox made its appearance in the City for the first time during the last 15 years. There were five cases, and all were removed to the Smallpox Hospital, Town Moor.

The first case, which occurred in July, was that of a man aged 50 years, not vaccinated since infancy, and

working in Ashington at a house where smallpox had developed. The man became ill, and at once returned to his home in Newcastle. Fortunately he sought medical advice immediately, and smallpox was diagnosed. A search was made for contacts, and, the case being early, it was possible to vaccinate all in good time. No secondary cases occurred.

The remaining 4 cases received the infection presumably from a common source. They occurred in December. The initial patient was a man aged 34 years, not vaccinated since infancy, who had been travelling in the infected district of Ashington. He became ill, but was not discovered until later during the course of a routine inspection, when his child—an unvaccinated girl—contracted the disease from him. At the same time, the man's father, also a contact, was found to be then recovering from the acute stage of smallpox. He was 62 years of age, and had not been vaccinated since infancy. The last case was an employé of the elder man. He had been vaccinated along with other contacts, but not until 9 or 10 days after exposure to infection, when it was improbable that he would receive the full benefit of prophylactic vaccination. His attack was of a mild nature, consequent upon the partial immunity he had acquired from an equally mild vaccinia.

The following are the particulars, courteously furnished by the Clerk to the Guardians, of infant **Vaccination** in Newcastle during recent years. (Walker, which belongs to the Tynemouth Rural area for registration purposes, is not included).

Year.	Births Registered.	Successful Vaccinations	Unsuccessful Vaccinations	Exemption Certificates.	
				Number.	Percentage to Total Births
1905	7,958	7,264	27	65	0·8
1906	7,721	6,733	28	92	1·2
1907	7,610	6,702	16	94	1·2
*1908	7,747	6,414	20	449	5·8
1909	7,180	5,667	30	517	7·2
1910	7,023	5,532	22	683	9·7
1911	6,604	5,002	24	767	11·6
1912	6,715	4,625	18	982	14·6
1913	6,874	4,441	7	1,173	17·0
1914	7,023	4,230	11	1,499	21·2
1915	7,116	4,487	1	1,485	20·9
1916	7,117	4,405	9	1,509	21·2
1917	6,166	3,688	5	1,478	24·0
1918	6,092	3,488	15	1,362	22·4
1919	6,131	3,405	8	1,582	25·8
1920	7,955	4,403	45	2,074	26·7
1921	7,258	4,159	11	2,128	29·3
1922	6,936	3,556	16	2,116	30·5
1923	6,417	4,464	—	1,373	21·4
1924	6,481	3,967	6	1,121	17·3

* Vaccination Act, 1907, came into force.

The *Public Vaccinators* and *Vaccination Officers* for the various districts of the City are :—

Dene, Heaton and Byker Municipal Wards :—

DR. J. MACRAE, 4, Benton Terrace:
Deputy—DR. J. BOWER, 35, Heaton Road.

St. Anthony's and St. Lawrence Municipal Wards :—

DR. RICHARD DAGGER, 1, Rothbury Terrace.
Deputy—DR. ERIC C. DAGGER, 1, Rothbury Terrace.

Walker District :—

DR. T. J. RYAN, Welbeck Road.
Deputy—DR. WM. HUTCHINSON, Welbeck Road.

All Saints', St. Nicholas', St. Andrew's, Jesmond, and St. Thomas' Municipal Wards :—

DR. FRANK HAWTHORN, 10, Ellison Place.
Deputy—DR. O. W. OGDEN, 4, St. Mary's Terrace.

Fenham, Arthur's Hill, Westgate and St. John's Municipal Wards :—

DR. A. M. PATERSON, 1, Grove Street.
Deputy—DR. H. L. TAYLOR, 242, Westgate Road.

Stephenson, Elswick, Armstrong and Benwell Municipal Wards :—

DR. G. D. NEWTON, 190, Westgate Road.
Deputy—DR. J. A. BRAND, 216, Westmorland Road.

Wingrove Hospital :—

DR. G. P. HARLAN.

Vaccination Officers :—

Western—W. J. WHITE, 104, Meldon Street.
Eastern—WM. GARRETT, 34, Harbottle Street.

ERYSIPELAS.

152 cases of this disease were notified and there were 3 deaths.

PUERPERAL SEPTICÆMIA.

15 cases were notified, with 6 deaths. Inquiries were made concerning all of these. 7 of the cases were attended by doctors.

INFLUENZA AND PNEUMONIA.

These diseases accounted for 520 deaths as against 357 last year.

Total deaths at age periods.

Under 5 years.	5-15.	15-25.	25-45.	45-65.	65 and over.	Total.
268	21	20	70	74	67	520

As will be seen from the above figures, 268, or 52 per cent. of the deaths occurred below the age of 5 years.

Appended is a statement of the total net deaths at all ages in the City from influenza and pneumonia during 1924 and the previous 12 years :—

YEAR.	INFLUENZA.	PNEUMONIA.
1912	18	248
1913	19	339
1914	22	424
1915	22	433
1916	36	392
1917	27	418
1918	680	540
1919	604	561
1920	90	468
1921	65	411
1922	273	495
1923	15	342
1924	105	415

1,168 cases of pneumonia, including influenzal-pneumonia, were notified. For the ages and ward distribution, see pages 91 and 92.

Of that number 935, or 80 per cent., were visited by the Department.

It was found that of these 935 visited cases, 730, or 78 per cent., were primary pneumonia, 146, or 15 per cent., were cases of influenzal-pneumonia, and 59, or 6 per cent., were cases of pneumonia following other diseases.

Sex.—58 per cent. of the cases were males.

Ages.—The ages of the 935 cases visited were as follows :—

Under 1 year	150
1–5 years	344
5–15 years	177
15–25 years	76
25–45 years	98
45–65 years	67
and over 65 years	23
	935

Of these, 147 were school children.

Housing.—207 cases occurred in 1 roomed dwellings, 379 cases occurred in 2 roomed dwellings, 178 cases occurred in 3 roomed dwellings, and 171 cases occurred in more than 3 roomed dwellings.

Type of House.—392 cases occurred in flats, 435 cases in tenements, and 108 in self-contained houses.

Previous History—

There	was a	previous	history of	Measles in 304 cases.
,,	,,	,,		Whooping Cough in 150 cases.
,,	,,	,,		Influenza in 66 cases.
,,	,,	,,		frequent winter Coughs and Colds in 863 cases.
,,	,,	,,		Pneumonia in 143 cases.
,,	,,	,,		Tuberculosis in 12 cases.

Deaths.—160, or 17 per cent. of the visited cases of pneumonia died.

VENEREAL DISEASES.

Syphilis was certified as the cause of death in 13 cases.

The work of the treatment clinic has been continued successfully. 1,672 old and new cases attended 27,105 times as out-patients. 13 cases accounted for 331 in-patient days. Of the 869 new cases 244 were syphilis, 473 gonorrhœa, 25 soft chancre, and 127 conditions other than venereal. 76 per cent. were males.

1,462 doses of salvarsan substitutes were administered to out-patients, and 7 to in-patients.

1,908 Wasserman reactions were carried out at the College of Medicine, and 97 microscopical examinations of pathological material were made at the College and 1,234 at the treatment clinic. The irrigation stations for males and for females in connection with the clinic have been in full use during the year.

Newcastle Residents Notified as Attending other Centres.

Cases.—Syphilis, 12; gonorrhœa, 10.

Attendances.—218.

Doses of salvarsan substitute given, 34.

Information as to ophthalmia neonatorum will be found on page 84.

ENCEPHALITIS LETHARGICA.

124 cases of encephalitis lethargica, including 96 Newcastle residents, and 28 extra mural patients, were notified as having occurred in the City during the year. This number is probably considerably less than the actual total number of cases who did suffer from the disease, for from unofficial information received at the Health Department, through the medium of Sanitary Inspectors and Health Visitors, it was apparent that an appreciable number of mild cases was occurring where no medical man was being consulted.

The large majority of the cases were living in the poorer quarters of the town, and undoubtedly overcrowding, with its resultant ill health and poor resistance, was an important contributory factor to the production of this epidemic. An analysis of the housing conditions affecting these encephalitis patients showed that on an average the number of persons comprising the family of the patient was 6·5 ; the number of persons living in the same house as the patient was 6·0 ; and the average number of rooms in the houses occupied by these patients was 3·6. It is interesting, however, that only in three cases was there evidence that the disease had been transmitted from a patient to another member of the same family.

66 cases of encephalitis lethargica (from Newcastle and other districts) were admitted to the City Hospital for Infectious Diseases.

The clinical type was of much greater severity than in preceding years, and the number of deaths (30) correspondingly increased.

The incidence of the disease was greatest during the months of April, May, and June, as is shewn in the following table. The figures in the second column indicate the deaths among the cases reported in each of the months, irrespective of the date of death.

Seasonal Incidence and Mortality.

	Cases.	Deaths.
January	—	—
February	—	—
March	6	4
April	27	8
May	40	4
June	18	2
July	6	2
August	7	—
September	3	1
October	4	1
November	5	4
December	8	4
	124	30

People of all ages appear to have been equally susceptible to this infection, although according to the subjoined table the incidence among young adults was somewhat greater.

Age Groups.

Under 1 year	1
1 to 2 years	—
2 to 3 „	3
3 to 4 „	8
4 to 5 „	2
5 to 10 „	19
10 to 15 „	16
15 to 25 „	32
25 to 45 „	31
45 years and over	12
	124

The increased number of cases rendered the disease somewhat easier of classification according to the varied symptoms and signs. The following table gives the different types of disease met with, together with the number of deaths in each group :—

	No. of Cases.	Deaths.
Ocular	16	1
Myoclonic	22	4
Lethargic	37	7
Myoclonic and Lethargic	15	6
Parkinsonian	21	5
Cerebral	13	7
	124	30

Lumbar puncture was performed in each of the 66 cases admitted to the City Hospital, and the cerebro-spinal fluid—which was invariably under pressure—was examined microscopically. The operation itself and the removal of fluid were usually productive of relief to the patient by the consequent reduction of pressure upon the brain and spinal cord.

With the object of amplifying the knowledge we already have regarding this disease, all the 96 Newcastle cases have been kept under close supervision, and enquiries have been continued from 6 to 12 months subsequent to convalescence or discharge from hospital.

Of the 96 cases under consideration 46 were found still to be suffering, after an average period of 8 months, from some mental or physical impairment.

The friends of the 28 extra mural patients were forwarded a questionnaire, and from 23 replies it was found that in 9 cases recovery had been incomplete.

The following table sets out some of the more important after-effects of encephalitis lethargica among the 46 Newcastle people referred to above. These conditions occurred either singly or grouped together in the same or different individuals, and while the disabilities complained of were almost innumerable, the classification given does indicate the main types of encephalitis sequelæ.

Eye changes (Diplopia, Ptosis, Squint, inequality of Pupils, Nystagmus, etc.)	16
Blindness	1
Symptoms of Neurasthenia or Melancholia, usually associated with lethargy	25
Excitability and Insomnia	22
Headaches (in conjunction with other symptoms)	27
Definite mental impairment	19
Parkinsonian syndrome	7
Vicious temperament	1
Committed suicide	1

It is impossible to say with any degree of accuracy how far all these changes will remain permanent. Certain it is, however, that the majority of the 20 cases referred to as having definite mental impairment will remain so for the rest of their lives. Several have already been admitted to mental Hospitals and other institutions, and others are attending the clinics of School Medical departments, Maternity and Child Welfare Centres, and out-patient departments of hospitals for eye affections. A really serious aspect of this problem is the tremendous handicap which these patients have become in their homes. The prospect of work for most of them is very remote, while the difficulties besetting persons who are responsible for their control and maintenance are indeed very trying.

ACUTE POLIOMYELITIS, EPIDEMIC CEREBRO-SPINAL MENINGITIS, ETC.

NUMBER OF CASES.

Total No. of Cases. (Net).	0–1 Year.						1–5 Years.						5–10 Years.						10–15 Years.						15 Years and Over.						
	Male.			Female.			Male.			Female.			Male.			Female.			Male.			Female.			Male.			Female.			
	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	Cases.	Deaths.	Permanent Paralysis.	
2	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	Acute Poliomyelitis.
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Polio-Encephalitis.
5	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	1	..	1	1	..	Cerebro-Spinal Fever.
96	..	..	..	1	1	..	6	2	3	5	1	..	8	..	3	8	..	6	8	1	4	4	..	2	28	5	15	28	5	11	Encephalitis Lethargica.
Cases Removed to Isolation Hospital. 1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	Acute Poliomyelitis
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	Polio-Encephalitis.
58	..	..	..	..	..	..	5	2	1	5	1	..	4	..	3	7	..	6	7	1	4	1	..	1	14	3	12	15	2	10	Encephalitis Lethargica.
5	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	1	..	1	1	..	Cerebro-Spinal Fever.

CITY HOSPITALS FOR INFECTIOUS DISEASES.

Accommodation.

Names and Situation of Hospitals.	Total Available Beds.
City Hospital for Infectious Diseases, Walker Gate (including Phthisis Pavilions, 62 Beds)	294
Smallpox and Isolation Hospitals, Town Moor	172

City Hospital, Walker Gate.

Year.	Population of the City.	Number of Beds at Hospital for Fever Cases.	Total Admissions (exclusive of Phthisis).	Percentage of Scarlet Fever, Diphtheria and Enteric Fever Cases Admitted to Cases Notified.
1890	182,866	104	219	21·3
1900	213,039	104	290	38·6
1909	263,064	172	1,090	78·0
1910	265,077	172	912	83·0
1911	267,261	172	1,110	83·1
1912	269,193	172	1,542	86·4
1913	271,295	172	1,286	88·3
1914	271,523	172	1,835	78·9
1915	278,107	232	1,886	90·5
1916	278,107	232	1,380	87·0
1917	278,107	232	1,303	87·5
1918	278,107	232	1,245	87·5
1919	275,099	232	1,370	84·3
1920	286,061	232	1,710	86·4
1921	278,400	232	1,683	82·4
1922	281,600	232	1,032	86·3
1923	283,800	232	991	92·6
1924	285,900	232	1,502	90·5

CITY HOSPITAL FOR INFECTIOUS DISEASES, WALKER GATE.

Diseases Admitted—1924.

Sent in as	Number.	After Observation Proved to be:— Scarlet Fever.	Diphtheria.	Diphtheria Carriers.	Enteric Fever.	Measles.	Mumps.	Erysipelas.	Epidemic Cerebro-Spinal Meningitis.	Other Forms of Meningitis.	Encephalitis Lethargica.	Pneumonia.	Other Respiratory Diseases.	Tonsillitis.	Gastro-intestinal Disease.	Skin and Septic Diseases.	Varicella.	Ophthalmia Neonatorum.	Rubella.	Acute Rheumatism.	Pertussis.	Puerperal Fever.	Erythema.	No appreciable Disease.	Unclassified.
Scarlet Fever	736	689	1	..	..	5	..	1	..	..	..	..	..	3	..	..	..	..	..	..	..	..	18	19	..
Diphtheria	296	15	215	..	..	5	..	..	..	1	..	3	1	52	..	..	..	..	..	..	..	..	..	4	..
Diphtheria Carriers	14	..	..	13	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Enteric Fever	45	..	..	..	30	..	..	..	..	..	1	1	4	..	5	..	..	..	..	..	..	..	..	3	1
Measles	83	1	..	..	..	79	..	..	..	..	..	..	1	..	..	1	..	..	..	..	1	..	..	..	..
Pneumonia	134	..	..	..	..	2	..	..	..	..	..	122	7	..	..	..	..	..	..	1	2	..	..	..	..
Pertussis	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	..	..	..	..
Epidemic Cerebro-Spinal Meningitis	8	..	..	..	..	..	..	..	3	..	1	..	1	..	..	1	..	..	..	..	..	..	..	..	2
Puerperal Fever	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Respiratory Diseases	2	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
Rubella	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	..	..	..	..	..	..
Varicella	15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	13	..	..	..	..	..	..	..	..
Erysipelas	34	..	..	..	..	..	..	29	..	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	..
Encephalitis Lethargica	76	..	..	..	..	1	..	..	..	..	64	3	1	..	1	..	..	..	..	..	..	..	..	4	2
Ophthalmia Neonatorum	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Tonsillitis	5	..	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	..	..	..
Trench Fever	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Mumps	3	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gastro-intestinal Disease	4	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..
Skin and Septic Diseases	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	..
Unclassified	18	..	..	..	..	..	..	..	..	..	..	..	3	..	..	2	..	..	..	..	..	..	..	..	13
Total	1502	705	216	13	30	92	3	30	3	1	66	129	19	60	10	16	13	1	10	2	10	5	18	31	19

CITY HOSPITAL, WALKER GATE.

(Fever Pavilions).

Admissions during the year—1,502.

The *average daily number* of patients in the hospitals was 130, exclusive of 93 cases of phthisis.

RATE PER CENT. OF CASES REMOVED TO HOSPITAL TO CASES NOTIFIED.

	1890	1895	1900	1905	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
Scarlet Fever	18·4	33·0	35·0	50·1	84·5	83·8	88·0	90·6	81·4	91·3	94·5	91·9	99·3	88·0	85·7	82·3	84·7	91·9	90·4
Diphtheria	8·3	28·7	40·0	36·8	80·1	80·5	81·8	81·5	84·8	89·1	84·6	82·0	91·6	74·4	89·1	82·7	91·7	93·6	90·2
Enteric Fever	38·9	48·0	54·5	52·0	90·5	92·0	91·2	91·1	94·1	87·0	96·6	96·0	93·1	80·0	90·0	71·4	84·2	100·0	96·6
All cases of the above, together with Continued and Typhus Fever and Cerebro-Spinal Fever, etc.	21·3	34·6	38·6	47·8	83·0	83·1	86·4	88·3	82·6	90·5	87·0	87·5	87·5	84·3	86·4	82·4	86·3	92·6	90·5

Diseases and Mortality Rates.

MORTALITY OF CASES TREATED IN HOSPITAL AS COMPARED WITH CASES NOT REMOVED DURING 1924.

DISEASE.	HOSPITAL.			NOT REMOVED.		
	Total Cases. (Verified)	Deaths.	Case Mortality per cent.	Total Cases.	Deaths.	Case Mortality per cent.
Scarlet Fever	705	5	0·7	78	—	—
Diphtheria ...	216	18	8·3	26	3	11·5
Enteric Fever	30	2	6·7	1	—	—

Expenses of Maintenance.—Of the patients admitted, the expense of maintenance is charged as under :—

	CASES.
To the Newcastle Sanitary Authority	1485
To private guarantors	4
To the War Office and Admiralty	3
Tyne Port Sanitary Authority	6
Ministry of Pensions	1
Other Local Authorities	3
TOTAL	1,502

Admissions and Deaths, 1924.

Disease.	Admissions.													Deaths.											
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Scarlet Fever	54	43	26	38	43	35	52	58	71	111	99	75	705	1	..	..	..	..	..	1	..	..	1	1	1	5
Diphtheria	31	22	21	13	11	16	8	10	9	32	25	18	216	4	3	1	2	..	2	..	..	1	2	3	..	18
Diphtheria Carriers	2	5	4	..	1	..	..	..	..	..	1	..	13	..	..	..	..	..	..	..	..	..	..	..	..	..
Enteric Fever	..	..	..	..	1	..	1	3	15	8	2	..	30	..	..	..	..	..	..	..	..	1	1	..	..	2
Measles	3	2	3	2	8	8	9	9	2	..	15	31	92	..	1	..	..	..	1	1	2	..	..	4	7	16
Mumps	..	..	1	1	1	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..
Erysipelas	..	5	1	5	3	..	2	4	1	1	4	4	30	..	..	..	3	..	..	..	..	..	..	..	..	3
Epidemic Cerebro Spinal Meningitis	1	..	..	..	2	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..
Other forms of Meningitis	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	1
Encephalitis Lethargica	..	..	5	11	22	11	5	3	2	3	2	2	66	..	..	1	1	2	4	2	1	1	1	2	..	15
Pneumonia	18	15	17	12	11	5	2	9	7	8	9	16	129	7	6	5	3	..	..	..	2	..	1	1	3	28
Other Respiratory Affections	2	2	2	1	..	..	3	1	2	1	1	4	19	..	..	..	..	..	..	..	..	..	..	..	1	1
Tonsillitis	6	3	5	6	1	5	7	3	5	5	5	9	60	..	..	..	..	..	..	..	..	..	..	..	..	..
Skin and Septic Disease	..	..	2	3	1	1	2	1	1	1	1	3	16	..	..	..	..	..	..	..	..	..	..	..	..	..
Gastro-Intestinal Disease	..	2	..	1	..	..	1	1	2	1	1	1	10	..	..	..	..	..	..	..	..	..	..	..	..	..
Varicella	1	1	..	..	..	2	3	..	1	1	2	2	13	..	..	..	..	..	..	..	..	..	..	..	..	..
Ophthalmia Neonatorum	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Pertussis	..	4	1	1	..	..	1	..	..	..	2	1	10	..	1	..	..	..	..	..	..	..	..	..	..	..
Rubella	..	..	..	..	2	4	..	1	..	..	3	..	10	..	..	..	..	..	..	..	..	..	..	..	1	2
Rheumatism	..	..	..	1	1	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..
Erythema	1	..	..	1	5	1	4	1	5	..	..	..	18	..	..	..	..	..	..	..	..	..	..	..	..	..
No appreciable Disease	1	2	1	1	1	2	..	2	3	6	4	8	31	..	..	..	..	..	..	..	..	..	..	..	..	..
Unclassified	1	2	..	1	2	1	..	1	3	..	3	5	19	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal Fever	..	..	1	1	..	1	..	..	..	1	..	1	5	..	..	..	1	..	..	..	..	..	1	..	1	2
Totals	121	108	90	99	117	92	100	107	129	180	179	180	1502	12	11	7	10	3	7	4	5	3	7	11	14	94

Length of Stay in Hospital of Fatal Cases.—Of the foregoing, the following *died within* 24 *hours of admission*—diphtheria, 5; pneumonia, 2; encephalitis lethargica, 1; while 3 cases of diphtheria, 6 of pneumonia, 1 of scarlet fever, 2 of measles with pneumonia, and 4 of encephalitis lethargica died within 48 hours of admission to hospital.

Present Death Rates compared with those of Previous Years.

RETURN SHOWING THE NUMBER OF CASES OF SCARLET FEVER, DIPHTHERIA, AND ENTERIC FEVER ADMITTED TO HOSPITAL AND MORTALITY RATES PER CENT.

1891–1900.

YEAR.	Number of Cases admitted to Hospital.			Number of Deaths.			Case Mortality per cent.		
	Scarlet Fever.	Diphtheria.	Enteric Fever.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Scarlet Fever.	Diphtheria.	Enteric Fever.
1891.....	110	10	67	5	6	6	4·5	60·0	8·9
1892.....	244	18	26	8	5	5	3·3	27·8	19·2
1893.....	202	15	49	5	2	6	2·5	13·3	12·2
1894.....	230	8	60	6	3	13	2·6	37·5	21·7
1895.....	319	41	75	10	10	21	3·1	24·4	28·0
1896.....	294	24	67	7	..	14	2·4	..	20·9
1897.....	210	10	64	7	2	17	3·3	20·0	26·6
1898.....	179	21	197	9	5	33	5·0	23·8	16·7
1899.....	193	19	77	9	6	14	4·7	31·6	18·2
1900.....	211	29	37	9	8	8	4·3	27·6	21·6
	2,192	195	719	75	47	137	3·4	24·1	19·1
1915–1924.									
1915.....	1,305	223	88	37	18	10	2·8	8·0	11·4
1916.....	677	210	57	19	23	8	2·8	10·9	14·0
1917.....	409	164	12	13	22	1	3·1	13·5	8·3
1918.....	381	205	26	9	13	2	2·6	6·3	7·8
1919.....	630	196	11	21	13	..	3·3	6·6	0·0
1920.....	1,105	244	11	17	19	1	1·5	7·7	9·0
1921.....	1,115	241	9	9	15	2	0·8	6·2	22·2
1922.....	560	173	15	2	14	3	0·3	8·0	20·0
1923.....	434	163	13	4	7	1	0·9	4·3	7·7
1924.....	705	216	30	5	18	2	0·7	8·3	6.7
	7,321	2,035	272	136	162	30	1·9	8·0	11·0

Diphtheria.—Of the 216 patients in hospital 174 were faucial or pharyngeal cases, of whom 6 died, a case mortality per cent. of 3·5; 39 were laryngeal or tracheal cases, of whom 12, or 30·8 per cent. died; 3 of these

laryngeal cases had also involvement of the nasal passages and 1, included above, or 33·3 per cent., died. Tracheotomy was performed in 23 cases of diphtheria, and intubation in 2 cases. Of the 25 cases, 8, or 32 per cent., died.

The diagnosis of each case was confirmed bacteriologically, either before or after admission to hospital.

Antitoxin is administered to all cases of diphtheria admitted to hospital which have not received the remedy at home.

Bacteriological diagnosis is made in the great majority of cases before admission.

Mixed Infections.—49 patients sent into hospital, or 3·2 per cent., were found on admission to be suffering from two or more distinct infectious diseases, as follows:—

Scarlet Fever with Diphtheria	1
Scarlet Fever with Measles	2
Scarlet Fever with Varicella	3
Scarlet Fever with Pertussis	1
Scarlet Fever with Impetigo	2
Scarlet Fever with Ringworm	2
Diphtheria with Scarlet Fever	1
Diphtheria with Pertussis	1
Diphtheria with Varicella	1
Diphtheria with Impetigo	1
Measles with Pertussis	2
Measles with Pneumonia	29
Measles with Varicella	1
Pertussis with Pneumonia	2
	49

Thus, 1·6 per cent. of the cases of scarlet fever were suffering from, or incubating, one or more additional infectious diseases on admission, and 1·9 per cent. of the cases of diphtheria.

Cross Infection.—During the year 3 patients developed a second infection in the wards, or 0·2 per cent. of the total admissions to hospital. These were all scarlet fever cases, of which 1 developed varicella and

2 measles. The infections were contracted from two patients who were incubating chicken-pox and measles respectively on admission to hospital.

"Return" Cases.—The following are details of the "return" cases of scarlet fever during the year :—

Scarlet Fever.	"Infecting" Cases.		"Return" Cases.		"Infecting" Cases.
Total Admissions.	No.	Per-centage.	No.	Per-centage.	Average Day of Disease when Discharged.
705	24	3·4	29	4·1	45·0

Seasonal Occurrence.

Quarter.	Total Scarlet Fever Admissions.	"Infecting" Cases.		"Return" Cases.	
		No.	Percentage	No.	Percentage.
January to March	123	5	4·1	6	4·9
April to June	116	2	1·7	3	2·6
July to September	181	3	1·6	3	1·6
October to December ..	285	14	5·0	17	6·0

Of the 24 "infecting" cases: (*a*) 10 had no complications or discharges whilst in hospital, and remained "clean" after reaching home; (*b*) 6 had no complications whilst in hospital but developed discharges after reaching home; and (*c*) 8 were "dirty" cases whilst in hospital but were "clean" on discharge.

Of the above classes, the average day of disease on discharge from hospital of the supposed infecting cases, and the period elapsing after that discharge and the onset of illness in the "return" case, were as follows :—

Class (*a*)—34 and 8 days.
Class (*b*)—32 „ 10 „
Class (*c*)—68 „ 7 „

Year	1913		1914		1915		1916		1917		1918		1919		1920		1921		1922		1923		1924		12 Years.	
Patient "isolated" at.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.	Hospital.	Home.
"Susceptibles" in the homes of each class of patient	1131	53	1702	244	1462	86	800	8	509	17	450	20	726	47	1203	87	1401	147	647	50	563	16	807	32	11407	807
"Incidental" infections	69	3	78	28	85	7	33	2	25	..	18	..	59	1	69	5	88	16	37	5	31	2	34	3	636	72
Percentage of "incidentals" to "susceptibles"	6·1	5·7	4·6	11·5	5·8	8·1	4·1	25·0	5·0	..	4·0	..	8·1	2·1	5·7	5·7	6·3	10·9	5·7	10·0	5·5	12·5	4·2	9·4	5·5	8·9
"Return" Infections	29	..	84	..	55	2	21	1	20	..	14	..	22	..	49	3	30	7	7	1	17	1	29	..	377	15
Percentage of "returns" to "susceptibles"	2·6	..	4·9	..	3·8	2·3	2·6	12·5	3·9	..	3·1	..	3·0	..	4·1	3·4	2·1	4·8	1·0	2·0	3·0	6·2	3·6	..	3·3	1·8
Total of "incidental" and "return" infections	98	3	162	28	140	9	54	3	45	..	32	..	81	1	118	8	118	23	44	6	48	3	63	3	1003	87
Percentage of this total to "susceptibles"	8·7	5·7	9·5	11·5	9·6	10·5	6·7	37·5	8·8	..	7·1	..	11·2	2·1	9·8	9·2	8·4	15·6	6·8	12·0	8·5	18·7	7·8	9·4	8·8	10·8

For the purpose of this table a "return" case is counted to the year in which the "infecting" case was admitted, even though the latter may have been discharged, or the "return" case admitted, in the following year.

"Return" Cases for Years 1906–1924.

Year.	Total Scarlet Fever Admitted.	"Infecting" Cases.		"Return" Cases.	
		No.	Percentage.	No.	Percentage.
1906.....	442	7	1·6	10	2·3
1907.....	390	11	2·8	17	4·4
1908.....	283	4	1·4	5	1·8
1909.....	623	23	3·7	30	4·8
1910.....	465	18	3·9	20	4·3
1911.....	605	26	4·3	30	4·9
1912.....	1,018	47	4·6	52	5·1
1913.....	853	23	2·7	24	2·8
1914.....	1,404	78	5·6	96	6·8
1915.....	1,305	43	3·3	49	3·7
1916.....	677	22	3·3	24	3·5
1917.....	409	9	2·2	13	3·2
1918.....	381	13	3·4	14	3·6
1919.....	630	23	3·6	22	3·5
1920.....	1,105	37	3·3	39	3·5
1921.....	1,115	24	2·1	30	2·7
1922.....	560	9	1·6	7	1·2
1923.....	434	14	3·2	16	3·6
1924.....	705	24	3·4	29	4·1

Hospital and Home "Isolation" Compared.

In order to determine the relative liability to further infection, subsequent to the first, in hospital and home-isolating households respectively, a careful record has been kept for twelve years of the number of presumably susceptible persons in each invalided house, all, other than the original patient, below 12 years of age being so classed, and the proportionate incidence of secondary cases calculated.

Cases occurring within seven days of the "isolation" of the original case were not counted, as these probably acquired their infection before the influence of the "isolation" could be felt.

Cases occurring subsequently to the seventh day of "isolation" of the original case, and prior to the release of the latter, were classed as "incidental" infections.

Cases occurring within 28 days after the release of the original case from "isolation" were classed as "return" infections.

The following table shows the results obtained:—

OTORRHŒA AND RHINORRHŒA.

The total number of cases of otorrhœa and rhinorrhœa which occurred during the year was 123. This figure is somewhat higher than usual, being 17 per cent. of the total scarlet fever admissions, as compared with 12 per cent. in 1923. The incidence of scarlet fever during the last three months of the year was considerably increased ; also, the type of disease over the same period showed a greater tendency to the development of these complications. As a result, operative measures had to be undertaken in a larger number of cases.

The accompanying table sets out in detail the average duration of treatment both conservative and operative, and the average length of stay of different types of case :—

	Number of Cases.	Average length of Stay (days).	Av. No. days treatment after operation. (In cases operated upon.)	Av. No. days conservative treatment. (In cases not operated upon).
Otorrhœa	35	52	17	27
Rhinorrhœa	57	50	7	19
Both Otorrhœa & Rhinorrœa	31	62	19	26
All Cases	123	54	14	24

At first sight the figures do not compare favourably with those of 1923, but the comparison is not a fair one, owing to there being included cases with concurrent mastoid infection, which required an exceptionally long period of isolation in hospital.

The difference between the length of treatment of patients receiving merely conservative treatment, and that of patients subsequent to operation is again very significant.

Subsequent Progress.—Of 118 cases of ottorrhœa and rhinorrhœa visited from six to twelve months after leaving hospital, 101, or 86 per cent. were found to have remained free from discharges. 17 cases (7 otorrhœa and 10 rhinorrhœa) still suffered from occasional watery discharge from nose or ear, and these patients were being kept under observation by Dr. Maclay at the out-patient department of the Throat, Nose and Ear Hospital.

Included in the above visits were 30 " tonsils and adenoids " and 10 " mastoid " cases. All except 4 " tonsils and adenoids " patients had remained free from recurrence of complications.

Operations.—30 operations for removal of tonsils and adenoids (10 radical mastoid, and 2 drum incision operations) were performed ; in the rhinorrhœa cases the discharge dried up in an average of 7 days after the operation, and in the otorrhœa cases in an average of 17 days, indicating clearly the value of this operation in many cases of running ears and noses, in which enlarged and often septic tonsils and adenoids frequently initiate, and certainly keep up, the discharges.

Prophylaxis.—The inoculation of stock vaccines into a limited number of scarlet fever patients was carried out as in the previous year, the object being to render the patient immune to the possible development of discharges from the nose or ear.

Of 705 patients admitted with scarlet fever, 174 received these prophylactic inoculations. 11 (or 6·3 per cent.) of this number subsequently developed

otorrhœa or rhinorrhœa. Of the remaining 531 patients who did not receive vaccines, 112 (or 21 per cent.) developed one or other of these complications.

The vaccines are renewed periodically from cultures prepared from the throats, noses, and ears of patients in the wards, so that, as far as possible, the particular strains of offending organisms (which vary during different epidemics), are being combated by appropriate vaccines. As in former years, the relative incidence of these septic complications is shown to be much less among the previously inoculated.

Average stay in Hospital during the last Seventeen Years.

Year.	All Cases.		Scarlet Fever.		Diphtheria (including carriers).		Enteric Fever.		Other Diseases.	
	No.	Average Stay in Days	No.	Average Stay in Days	No.	Average Stay in Days	No.	Average Stay in Days	No.	Average Stay in Days
1908	614	48·4	283	56·3	220	40·0	88	48·5	25	31·8
1909	1,090	49·2	623	54·3	334	41·6	56	45·9	78	42·8
1910	912	44·4	465	51·3	317	37·2	47	46·4	83	32·5
1911	1,110	45·6	605	50·5	375	41·9	68	44·4	62	20·2
1912	1,542	45·8	1,018	46·1	383	45·7	82	46·2	59	20·9
1913	1,286	45·5	853	47·6	254	47·9	109	43·4	70	19·6
1914	1,835	41·6	1,404	44·4	251	34·4	86	41·2	94	20·2
1915	1,886	41·3	1,305	47·1	223	35·6	88	44·0	271	17·2
1916	1,380	35·7	677	42·5	210	38·2	57	48·8	436	22·3
1917	1,303	33·9	409	46·5	164	43·5	12	59·8	718	24·0
1918	1,245	32·1	381	45·2	205	46·6	27	52·3	632	18·7
1919	1,370	33·8	630	41·5	196	54·8	11	39·2	533	16·9
1920	1,710	32·4	1,105	35·0	244	44·8	11	57·5	350	16·7
1921	1,683	28·0	1,115	31·1	241	31·6	9	36·4	318	13·9
1922	1,032	29·9	560	32·5	189	38·0	15	47·5	268	17·9
1923	991	29·6	434	33·7	172	41·2	13	49·4	372	18·7
1924	1502	32·5	705	36·3	229	37·0	30	53·9	538	24·6

Staff Sickness.

Nursing Staff.—75 of the Nursing Staff were off duty owing to sickness for a total of 2,476 days. 12 contracted scarlet fever, 22 influenza, 19 tonsillitis, and 2 acute rheumatism.

Domestic Staff.—17 were off duty through sickness for a total of 345 days. 8 contracted influenza, 1 scarlet fever, 1 measles, and 6 tonsillitis.

Bacteriological Laboratory, City Hospital.

The following examinations were made in connection with the patients in the fever wards :—

Swabs for Diphtheria Bacilli	1,196
Other Examinations	11
TOTAL	1,207

SMALLPOX AND ISOLATION HOSPITALS, TOWN MOOR.

Five cases of Small-pox from the City were admitted to the Small-pox Hospital. The details are as follows :—

Month.	No. of Cases.	Ages.	Vaccination.		
			No. of Marks.	Area of Marks. Sq. in.	Age at Vaccination. or Re-vaccination.
July	1	50	2	1	1
December.....	4	4	0	0	—
		34	3	1½	1
		35	3	1½	1
		62	4	2	1 and 10
	5	—	—	—	—

In connection with these cases, 2 direct contacts were admitted to the Isolation Hospital.

By arrangement with the Newbiggin Urban District Council, 27 cases of Smallpox, and 2 cases sent in as that disease but which proved to be Chickenpox, were admitted to the City Smallpox Hospital. This arrangement necessitated the opening of the Hospital from 9th April to 6th June. The cost of conveyance and maintenance of these patients was defrayed by the Newbiggin Authority.

DISINFECTION.

6,460 cases of notifiable infectious disease have been inquired into by the Infectious Disease Inspectors and Health Visitors, and, with the exception of measles, the houses or rooms connected therewith disinfected by spraying with formalin. In connection with cases of tuberculosis, 721 houses, including 846 rooms, were similarly disinfected. Disinfection was also carried out in 228 special cases.

544 extra visits of supervision to cases treated at home were made by the Infectious Disease Inspectors.

123 visits were made to cases who had suffered from otorrhœa and rhinorrhœa whilst in hospital.

Inquiries were also made in connection with 119 smallpox contacts. These persons were kept under observation until the possible incubation period was over.

INFECTED ARTICLES TREATED IN THE DISINFECTING APPARATUS AT THE CITY HOSPITAL FOR INFECTIOUS DISEASES, WALKER GATE.

ARTICLES FROM CITY.		ARTICLES—HOSPITAL PROPERTY.	
1923	1924	1923	1924
17,728	22,376	17,396	18,912

2,148 articles of clothing, etc., were also disinfected at the Smallpox Hospital.

The staff have thus dealt with 43,456 articles at the two disinfectors during the year.

Fluid disinfectant, in half-pint tins, was given out free on the order of the special inspectors, for home use in connection with infectious disease. Every precaution was taken to ensure that the disinfectant was properly and economically used.

DISINFECTANTS DISTRIBUTED—1924.

FROM	FOR INFECTIOUS DISEASES.	FOR PHTHISIS.
	FLUID (½ pint tins.)	FLUID (½ pints.)
Health Department	432	....
Tuberculosis Dispensary	....	640
Corporation Yard, Benwell	100	....
TOTAL	532	640

BACTERIOLOGICAL INVESTIGATIONS, 1924.

The following is a summary of the bacteriological investigations carried out on behalf of the Health Department of the Newcastle Corporation by the Department of Bacteriology at the University of Durham College of Medicine.

4,829 specimens were submitted for examination. The nature of the investigations and the results obtained were as follows :—

	DIPHTHERIA.			PHTHISIS.			ENTERIC.		
	Total.	Positive.	Negative.	Total.	Positive.	Negative.	Total.	Positive.	Negative.
No. of Examinations	1814	148	1166	639	115	524	84	32	52

MILK EXAMINATIONS:—

	Total.	Found.	Not Found.
1. For the tubercle bacillus	220	7	213

2. Bacterial content of organisms other than the tubercle bacillus (the colon bacillus being taken as the indicator):—

Colon bacilli not found in 1 cc. or less	....
Colon bacilli found in 1 cc., but not in less	6
Colon bacilli found in 0·1 cc., but not in less	25
Colon bacilli found in 0·01 cc., but not in less	53
Colon bacilli found in 0·001 cc., but not in less	37
Colon bacilli found in 0·0001 cc., but not in less	26
Colon bacilli found in 0·00001 cc., but not in less	44
	191

103 samples of "Graded Milk" were examined during the year according to the scheme of the Ministry of Health under the Milk and Dairies (Amendment) Act, 1922. The following is a summary of the results obtained:—

	Satisfied the Test.	Failed to satisfy the test.
"Certified" Milk	22	3
"Grade A" Milk (Tuberculin tested)	50	28
	72	31

WATER EXAMINATIONS:—

Class I. (Colon bacilli not found in 100 cc. or less)	8
Class II. (Colon bacilli found in 100 cc. but not in less)	58
Class III. (Colon bacilli found in 10 cc. but not in less)	117
Class IV. (Colon bacilli found in 1 cc. but not in less)	6
	189

VENEREAL DISEASES :—

	Total.	Serological reactions.	Microscopical examinations
No. of Examinations ..	2005	1908	97

OTHER EXAMINATIONS :—

(*a*) **Diphtheria.**—Virulence tests of the diphtheria bacilli isolated from " Carriers," were done in 6 cases.

5 cases proved virulent.

1 case non-virulent.

(*b*) **Enteric Fevers.**—62 specimens of material were received from the Infectious Diseases Hospital and examined for organisms of the enteric group.

B. paratyphosus B. was isolated in 1 case.

B. Morgan No. 1 was isolated in 2 cases.

All the rest were negative.

10 specimens from sources other than the Hospital proved negative.

(*c*) Experiments were carried out during January with the proprietary articles known as " Glaxo," " Cow and Gate," and " Semprolin Pure Full Cream " dried milks.

Detailed reports were submitted at the time.

(*d*) Inoculation experiments were carried out on specimens as follows :—

(i.) Pleural fluid for the Tuberculosis Medical Officer.

(ii.) Milk for the Chief Veterinary Inspector.

Reports were submitted at the time.

(*e*) A cultural examination was made on a throat swab received from the Education Department.

F. W. A. Clayton, M.D.,
Bacteriologist.

University of Durham College of Medicine,
22nd May, 1925.

REPORTS OF THE
TUBERCULOSIS MEDICAL OFFICER
AND THE
MEDICAL SUPERINTENDENT OF BARRASFORD SANATORIUM.

IV.—TUBERCULOSIS.

TUBERCULOSIS DISPENSARY,
INSTITUTIONAL TREATMENT.

TUBERCULOSIS.

Report of the Tuberculosis Medical Officer.

To the Medical Officer of Health.

Sir,

Herewith I beg to submit my report on the work of the Tuberculosis Section during the year 1924.

As in previous years, the information is given mainly in tabular form; the tables have been brought up to date, and some additional matter has been included.

Although compared with 1923, there was a definite decrease in the total number of notifications, a very important point is that the notifications received in respect of adult females suffering from tuberculosis of the lungs was the highest recorded since the introduction of compulsory notification in 1912, and showed an increase of 41 on 1923. For the first time the notifications of pulmonary tuberculosis of adult females exceeded those of adult males. This was foreshadowed in my report last year; it is an extraordinary feature, and difficult of explanation, except on the ground that the adverse economic conditions of recent years have had a serious effect in undermining the health of the female population.

The proportion of the notified cases who either attended the Dispensary or were visited by the Dispensary Staff shows a satisfactory improvement.

The death rate shows a very slight increase, but it has to be borne in mind that there were 53 weeks in the statistical year ; the number of deaths in the 366 days from January 1st to December 31st, inclusive, is lower than in any previous complete calendar year. The number of deaths from non-pulmonary tuberculosis is still the lowest on record, in spite of the extra week. A very satisfactory feature is that the number of deaths certified as due to tuberculous meningitis dropped from 51 in 1923 to 31 in 1924.

The duration of illness was found to be greater than in previous years ; while this may to some extent be due to more careful " case-taking," it is interesting to note that the disease appears to follow a much more chronic course in males than in females. According to the histories given by the patients, the interval between the first symptoms and death was practically 50 per cent. greater for males than for females (males : 47·6 months ; females : 32·3 months).

On the other hand, a history of definite tuberculosis amongst near relations (parents, brothers, sisters, consorts and children) was much more common in the female cases than the males (47·3 per cent., as contrasted with 30·4 per cent.).

With regard to the work at the Dispensary, there was an increase in the number of new patients, and a larger proportion came on the recommendation of a general practitioner, or from the Royal Victoria Infirmary.

The number of patients on the Dispensary register, in whose sputa tubercle bacilli have been found, grows yearly, but the proportion of female cases is again higher than in previous years.

The accommodation for tuberculous cases at Walker Gate Hospital was increased from 62 beds to 92, and in consequence a much greater number of patients received institutional treatment in 1924 than in any previous year. There were 444 admissions (Barrasford, 99; Tuberculosis Wards, Walker Gate, 304; Stannington, 41), as contrasted with 341 in 1923; (Barrasford, 93; Walker Gate, 211; Stannington, 37).

The proportion of female cases admitted to Barrasford Sanatorium and Walker Gate was exceptionally high.

164, or 84 per cent. of the 195 patients suffering from tuberculosis of the lungs, who visited the Dispensary during 1924, and died in the same year, had had institutional treatment provided, at some time or another, nearly all of them in Barrasford Sanatorium or in the Tuberculosis Wards at the City Hospital.

The excellent Rontgen Ray plant installed at the City Hospital has been of the greatest value for purposes of controlling treatment by artificial pneumothorax, and assisting in diagnosis of doubtful cases. It has greatly helped the work of the Dispensary. As I have insisted for many years past, the X-Rays are an essential adjunct to any "chest clinic." Not only do they complete the diagnosis in early cases, but they clear up obscure points in connection with old standing or healed tuberculosis, which may be masked by secondary phenomena or complications. From June 19th, 1924, the date on which the first film was taken, till the end of the year, 440 patients were examined with the apparatus; 174 cases were photographed, and a further 266 patients were examined by radioscopy alone.

The proportion of the deaths from tuberculosis which occurred in institutions, is relatively high, namely, 40 per cent. of the lung cases, and 45 per cent. of the non-pulmonary. The "Non-pulmonary" deaths mostly occurred in the Wingrove Hospital, or the large general hospitals.

The accommodation for treatment of "surgical" tuberculosis is far from sufficient; for the 358 patients notified as suffering from "other forms" of tuberculosis, who visited the Dispensary in 1924, only 10 beds were available. The "Open Air School," which was opened recently by the Education Committee, will be able to deal with some of the cases, and the Voluntary Tuberculosis Care Council has done very valuable work in granting treatment in Convalescent Homes to very mild non-infectious cases, e.g., those in whom the cervical or other glands were affected.

This is true preventive work of the highest order, and prevention is the aim, for the ultimate results of treatment of definite lung cases are disappointing. For example, of 966 sputum positive cases treated in Barrasford Sanatorium since 1908, 538 are known to be dead, and 98 could not be traced. On the other hand, of 297 cases in which the diagnosis was not confirmed bacteriologically, only 41 were known to be dead, and 104 could not be traced. Of course, the immediate results of treatment at the Sanatorium are very good, but owing to adverse home conditions and bad economic and industrial conditions, the majority of patients relapse sooner or later after discharge. Thus some provision is required to prevent relapse, as well as to prevent actual disease. The only sound method appears to be the inauguration of some form of Municipal Workshop, where the ex-sanatorium patient can be employed

on work which will not overtax his physical powers, but will, nevertheless, provide him with the means to purchase sufficient nourishment, etc.

For ex-service men suffering from tuberculosis, the United Services Fund have introduced a valuable innovation in the form of a Convalescent Home (Douglas House) at Bournemouth. At this institution patients who have already had Sanatorium treatment and are in need of a change of air and rest are accepted, and the results so far have been satisfactory.

In view of the fact that the large amount of work done on behalf of the Ministry of Pensions has not received special mention in previous reports, a short comprehensive statement has been prepared, and is presented as an addendum to the ordinary report. In the ten years—January, 1915, to December, 1924—1,337 ex-service men have been referred to the Dispensary for diagnosis, certification, or treatment. This work increased enormously after the war; in the year 1920 alone, 299 new cases came to the Dispensary. Of the total cases 468 were referred in the five years 1915 to 1919, and 869 in the succeeding five years.

The relation of the Dispensary with the general practitioners, other branches of the Health Services, the Hospitals, etc., have been extremely cordial, and an increased number of patients have been referred to other agencies for assistance or treatment.

As I have now retired from the administrative work of the Dispensary, except in an advisory capacity, this will be the last Annual Report which I shall have the honour to present to you. I therefore have much pleasure in stating how thoroughly happy I have been in the work since my appointment on February 24th, 1913.

Great improvements have been made in the accommodation for patients, both at Barrasford Sanatorium and in the Tuberculosis Wards at Walker Gate. The Dispensary building in New Bridge Street is comfortable for the patients and convenient for the daily routine; throughout my tenure of office I have had the enthusiastic and loyal assistance of an able and industrious staff.

To the Tuberculosis Sub-Committee I wish to tender my grateful thanks for their readiness to accept my suggestions for improvements in the anti-tuberculosis scheme, and finally I would like to thank you personally for your help, advice, and support on innumerable occasions.

Yours faithfully,

W. H. Dickinson,
Tuberculosis Medical Officer.

25*th May*, 1925.

REPORT.

Notifications.—893 notifications were received during the year but some were duplicates, so that the total number of new cases was 812, of whom 540 were certified to be suffering from ' pulmonary ' and 272 from ' other forms ' of tuberculosis.

The details as regards sex and age are given in the accompanying table.

Summary of Notifications during the Period, 1st January to 31st December, 1924.

Age Periods.	Primary Notifications.												Total Notifications (including Cases previously notified by other doctors).	Number of Notifications on Form "B."				Number of Notifications on Form "C."		Number of Notifications on Form "D."	
														Primary Notifications.							
	0 to 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 35.	35 to 45.	45 to 55.	55 to 65.	65 and upwards.	Total.		Under 5.	5 to 10.	10 to 15.	Total.	Total Notifications (including Cases previously notified by other doctors).	Poor Law Institutions.	Sanatoria.	Poor Law Institutions.	Sanatoria.
Pulmonary—																					
Males	3	9	6	14	22	36	48	50	53	19	6	266	288	During the year the School Medical Officer referred all suspicious cases to the Tuberculosis Medical Officer.					47	263	34	184
Females	2	3	14	18	44	34	66	53	32	6	2	274	300						43	177	25	125
Non-Pulmonary—																					
Males	10	36	30	25	4	7	12	3	4	2	..	133	155						18	6	6	6
Females	4	26	25	33	23	8	9	4	5	1	1	139	150						11	10	16	15
Total	19	74	75	90	93	85	135	110	94	28	9	812	893						119	456	81	330

Form "A."—Notification by any Medical Practitioner of a case of Tuberculosis (whether at an Institution or otherwise).

Form "B."—Notification by School Medical Officers of cases of Tuberculosis in children attending Public Elementary Schools of which he has become aware in the course of inspection.

Form "C."—Notification by the Medical Officers of Poor Law Institutions and Sanatoria of persons admitted who are suffering from Tuberculosis.

Form "D."—Notification by the Medical Officers of Poor Law Institutions and Sanatoria of persons discharged who are suffering from Tuberculosis.

As far as possible every notified case is visited by the nurses and urged to visit the Dispensary for examination and classification with a view to treatment.

Of the 812 cases notified, 460 attended the Dispensary and 196 others were visited in their homes by the outdoor staff in the course of the year. The names of the patients certified to have died from tuberculosis, but not previously notified, are entered in the notification register, so that if the 80 patients in this category be deducted it will be seen that the Dispensary gets into touch with most of the known cases of tuberculosis.

With reference to the 76 cases, neither examined at the Dispensary nor visited by the nurses, some were living in institutions or died before they could be visited, while others were notified at the end of the year, and were visited early in 1925.

A table has been prepared to illustrate these points, and also to show the nature of the institutional treatment afforded to the cases notified during 1924. While 226 of the 540 patients notified as suffering from pulmonary tuberculosis were treated in beds belonging to, or controlled by the City Council, it is particularly noteworthy that only 7 out of a total of 272 patients notified as suffering from forms of tuberculosis other than pulmonary were treated in such beds.

The number of patients dying in the year of notification is also given, and it will be seen that more than a quarter of all the new cases died in the same year as they were notified.

NOTIFICATIONS OF TUBERCULOSIS DURING 1924.

Part Affected.	Notifications.	Attended Dispensary.	Visited by Nurse but *not* attended Dispensary.	Received Institutional Treatment.				Died during the Year.
				Barrasford Sanatorium.	Sanat. Pav. Walker Gate.	Stannington Sanatorium.	Total.	
Lungs (Male)	266	171	45	42	80	3	125	71
,, (Female)	274	163	67	27	72	2	101	78
Other Forms (Male)	133	60	45	..	..	2	2	37
,, (Female)	139	66	39	..	..	5	5	41
TOTAL	812	460	196	69	152	12	233	227

During the year 163 cases (about one-fifth of the total) were notified by the Tuberculosis Medical Officer; of the 99 patients admitted to Barrasford Sanatorium, 49 were diagnosed and notified by the Dispensary Staff, as also 124 out of the 304 patients admitted to the Sanatorium Pavilions, Walker Gate—a proportion of over 42 per cent.

Deaths.—483 deaths were registered as due to some form of tuberculosis, and of these 331 were certified as due to pulmonary tuberculosis (including cases of acute phthisis) and 152 to other forms of the disease.

On these figures the death rates per 1,000 population were :—

	Number of Deaths.	Death Rate per 1,000 Population.
Pulmonary Tuberculosis	331	1·16
Other Forms of Tuberculosis	152	0·53
Total Tuberculosis Death Rate (uncorrected) ...	483	1·69

It must be noted, however, that 13 residents of Newcastle died in other parts of the United Kingdom from tuberculosis (11 pulmonary; 2 other forms), while 75 of the deaths (20 pulmonary; 55 other forms) registered in Newcastle were those of temporary residents.

The corrected deaths and death rates per 1,000 of the population were :—

	Number of Deaths.	Death Rate per 1,000 Population.
Pulmonary Tuberculosis	322	1·12
Other Forms	99	0·35
All forms of Tuberculosis (corrected)	421	1·47

The details as regards sex and age, together with the form of the disease, are given in the accompanying table :—

DEATHS FROM TUBERCULOSIS.—Sex and Age Distribution.

	Under 1 year.		1 and 2		3 and 4		5 to 10		10 to 15		15		16 to 20		20 to 25		25 to 35		35 to 45		45 to 55		55 to 65		65 to 70		70 and upwards		Total.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Pulmonary Tuberculosis ...	..	1	2	..	2	1	1	2	3	7	3	4	7	17	17	11	38	37	49	29	38	18	14	5	3	2	2	1	179	135
Acute Phthisis	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1	2	1	..	1	1	..	..	..	..	..	..	..	3	5
Acute Miliary Tuberculosis .	..	..	..	1	..	..	1	2	..	2	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	2	6
Tuberculous Meningitis.....	4	2	1	3	1	3	4	3	5	3	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	15	16
Abdominal Tuberculosis ...	2	1	3	1	1	2	3	..	2	2	..	1	..	3	1	1	2	1	..	1	1	1	..	..	..	..	..	..	15	14
Spinal Column	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	2	1
Tuberculosis of Joints	..	..	..	..	..	..	1	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	3	2
Tuberculosis of Skin	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Disseminated Tuberculosis..	..	..	..	1	1	1	2	..	2	2	..	..	..	3	1	1	1	..	1	..	1	1	..	..	..	..	..	..	9	9
Tuberculosis of other Organs	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1	..	..	1	..	..	..	..	1	..	..	..	..	..	4	1
Total	6	4	6	6	5	7	13	8	13	17	3	5	9	27	21	14	43	40	51	31	41	21	16	6	3	2	2	1	232	189

77·0 per cent. of the ' lung ' cases were known to the dispensary staff, 195 having visited the dispensary and an additional 54 having been attended in their homes by the visiting nurses.

Only 44·4 per cent. of the ' other forms ' were attended at or from the dispensary. The proportion is higher than in previous years, but is still too low; the main reason is that 43·4 per cent. of the non-pulmonary cases were not notified before death (see later).

Of 322 deaths from pulmonary tuberculosis the diagnosis was verified bacteriologically in 198 instances, *i.e.*, 61·4 per cent.

If the 37 unnotified cases be excluded, the percentage is 69·4—a satisfactory figure.

81 of the sputum positive cases who died during the year were notified by the dispensary staff.

9 other dispensary patients who were known to be suffering from pulmonary tuberculosis and in whose sputum tubercle bacilli had been found, died during the year, the causes of death being registered as miliary tuberculosis in 2 cases, acute general tuberculosis, lympho-sarcoma, pulmonary embolism, influenza and pneumonia, tuberculosis of the spine, intestinal obstruction, 1 case each, and 1 committed suicide.

Duration of Illness.—Wherever possible, in pulmonary cases, enquiry was made as to the length of time the deceased had been ill, and the average duration of illness was found to be 39·8 months. As in previous years, important differences were discovered when age and sex were considered, the figures being 47·6 months for adult males, 32·3 months for adult females, and 27 months for those below 16 years of age (both sexes).

The period between notification and death was, as one would expect, longer in the adult males than in the adult females and children, but averaged 18·6 months for all cases.

As the duration of illness for all cases was 39·8 months, each patient who died during the year must, on the average, have been ill for 21 months before notification.

41·2 per cent. of the patients had either not been notified prior to death (11·4 per cent.), or died within 3 months of notification (29·8 per cent.).

Further details and comparative figures for previous years are submitted in the following table :—

RETURN OF DEATHS FROM TUBERCULOSIS OF THE LUNGS OCCURRING IN :—

	Deaths which occurred in these years.						
	Average for 1913—17.	Average for 1918—22.	1923.	1924.			
				M.	F.	Children.	Total.
Persons not notified	43	51	42	16	15	6	37
„ notified under 1 month .	35	47	51	28	19	6	53
„ between 1 and 3 „	94	48	42	17	23	3	43
„ between 3 and 6 „	53	30	44	14	10	3	27
Total under 6 months	226	183	179	75	67	18	160
Persons notified between 6 and 12 months ..	47	46	37	19	19	1	39
„ 12 and 18 „ ..	28	21	23	12	15	2	29
„ 18 and 24 „ ..	15	15	14	12	3	2	17
„ 2 and 3 years	20	18	19	13	10	2	25
„ over 3 years	21	47	39	40	10	2	52
TOTAL	357	331	311	171	124	27	322

The figures for non-pulmonary forms of tuberculosis were even worse, for in 43 instances out of the 99 deaths, the disease had not been notified prior to death.

The records show that 18 of the 37 fatal unnotified cases of pulmonary tuberculosis, and 28 of the 43 fatal unnotified cases of " other forms " of tuberculosis, died in hospitals ; included in the 28 " other forms " were 17 cases of tuberculous meningitis.

Occupation.—The nature of the work done and the conditions under which it is carried on have an important bearing on the incidence of disease, and probably account for the large excess of adult male over adult female deaths from pulmonary tuberculosis.

155 ' insured persons ' (128 males and 27 females) are included in the 322 deaths.

44 of the males were ex-Service men.

Family History.—In 107 instances amongst the 280 cases investigated after death, *i.e.*, in 38·2 per cent., there was a history that some near relation was suffering from, or had died of pulmonary tuberculosis. Here again the influence of sex was shown, for the figures were 30·4 for men, 47·3 for women.

House Accommodation.—The home conditions of the working classes are intimately associated with occupation and family history as predisposing to tuberculosis

The numbers of rooms in the dwellings occupied by 280 persons who died of phthisis were as follows :—

Rooms in Dwelling.	1	2	3	4	More than 4	Common Lodging Houses.	Not known	Total.
Deaths	41	75	64	52	39	4	5	280

As regards the type of house occupied 143 were flats, 88 tenements, 40 self-contained, 4 common lodging houses, while 5 were unknown.

Treatment in Institutions.—It is noteworthy that of the 195 patients suffering from pulmonary tuberculosis who attended the Dispensary in 1924, and died in the

same year, 164, or 84 per cent., had received institutional treatment on one or more occasions. This is a high percentage, and shows what a large proportion of the cases visiting the Dispensary avail themselves of the accommodation provided.

Ward Distribution.—As in previous years a table is presented to show the ward distribution of tuberculosis during 1924. The estimated population of each ward is given, together with the number of notifications and deaths, and the rates per thousand living.

Of course the figures for one year are relatively small, and the rates may show great fluctuation from year to year, but when an average is taken over a period it is apparent at once that the death rate and notified incidence are both much higher in the poorer and more congested wards of the City.

Considerations of space prevent the publication of all the figures, but, while the tuberculosis death-rate for the City in 1924 was 1·47 the average for the ten years 1915-24 for St. Nicholas' Ward was 2·41, and for All Saints' 2·43, whereas the corresponding figures for St. Thomas and Jesmond Wards were 0·84 and 0·70 respectively.

When one ward shows, over a period of years, a death rate from tuberculosis more than three times as great as that of another ward of the same city, it is obvious that there is great scope for preventive measures in tackling tuberculosis, and that further careful consideration of the problem is warranted.

WARD DISTRIBUTION OF TUBERCULOSIS, 1924.

WARD.	Population 1924.	NOTIFICATIONS.						DEATHS.						New Patients Dispensary Register.
		Pulmonary	Attack rate per 1,000 of population.	Non-Pulmonary	Attack rate per 1,000 of population.	Total.	Attack rate per 1,000 of population.	Pulmonary	Death rate per 1,000 of population.	Non-Pulmonary	Death rate per 1,000 of population.	Total.	Death rate per 1,000 of population.	
St. Nicholas'	3,582	7	1·95	1	0·28	8	2·23	3	0·83	1	0·28	4	1·11	3
St. Thomas'	14,849	21	1·41	10	0·67	31	2·08	10	0·67	3	0·20	13	0·87	29
St. John's	15,925	35	2·20	22	1·38	57	3·58	28	1·76	12	0·75	40	2·51	56
Stephenson	19,934	37	1·86	27	1·35	64	3·21	28	1·40	9	0·45	37	1·85	79
Armstrong	16,483	38	2·30	34	2·06	72	4·36	18	1·09	7	0·42	25	1·51	75
Elswick	13,062	30	2·29	11	0·84	41	3·13	18	1·37	6	0·46	24	1·83	36
Westgate	16,103	29	1·80	12	0·74	41	2·54	16	0·99	6	0·37	22	1·36	54
Arthur's Hill	10,080	11	1·09	4	0·39	15	1·48	10	0·99	2	0·20	12	1·19	9
Benwell	20,375	35	1·72	24	1·18	59	2·90	16	0·78	5	0·25	21	1·03	79
Fenham	12,262	22	1·79	6	0·49	28	2·28	13	1·06	2	0·16	15	1·22	37
All Saints'	18,102	63	3·48	12	0·66	75	4·14	24	1·32	5	0·28	29	1·60	73
St. Andrew's	13,111	28	2·13	13	0·99	41	3·12	14	1·06	3	0·23	17	1·29	47
Jesmond	10,857	15	1·38	2	0·18	17	1·56	6	0·55	2	0·18	8	0·73	12
Dene	12,970	12	0·92	6	0·46	18	1·38	8	0·61	1	0·08	9	0·69	19
Heaton	14,914	25	1·67	7	0·47	32	2·14	13	0·87	1	0·06	14	0·93	37
Byker	18,215	37	2·03	15	0·82	52	2·85	21	1·15	10	0·55	31	1·70	79
St. Lawrence	20,481	37	1·80	15	0·73	52	2·53	31	1·51	5	0·24	36	1·75	80
St. Anthony's	17,484	29	1·66	21	1·20	50	2·86	21	1·20	9	0·51	30	1·71	75
Walker	17,111	29	1·69	30	1·75	59	3·44	24	1·40	10	0·58	34	1·98	75
City	285,900	540	1·89	272	0·95	812	2·84	322	1·12	99	0·35	421	1·47	954

NOTE.—Deaths occurring in Public Institutions have been allocated in every case to the Wards in which they resided.

The Tuberculosis Dispensary.

The number of new patients entered on the register was 954.

545 of them were sent direct by general practitioners, 225 were referred to the dispensary by the visiting nurses, 34 by the School Medical Officers, and the remainder came from various sources, *e.g.*, Royal Victoria Infirmary 59, Citizen's Service Society, etc.

295 had been notified previously, and the balance, 659, of whom 163 were notified by the Tuberculosis Medical Officer, were suspects, or contacts of known cases. Of the last mentioned category 164 had lived with patients known to have bacilliferous sputum, and 61 were home contacts of persons certified to have died of pulmonary tuberculosis.

358 were 'insured persons,' and 503 were dependents of 'insured persons,' leaving only 93 of the uninsured classes.

In respect of these new patients, after observation it was found that 61 per cent. were not suffering from active tuberculosis.

2,555 patients visited the dispensary during the course of the year, and registered 8,476 attendances, an average of over 3 per patient.

The total number of complete physical examinations made was 2,258, including 905 males, out of 2,664 attendances; 623 females, out of 1,915 attendances; and 730 children out of 3,897 attendances; giving an average of 1 every 3 visits for adults, and every 5 for children.

25·3 per cent. of the cases had been verified bacteriologically—42·1 per cent. of the males, 31·2 per cent. of the females, and only 3·2 per cent. of those under 16 years of age. The details are tabulated below :—

Sputum Examination.	Number of Patients who attended the Dispensary during the Year 1924.				Ex-Service Men (included in the Total).
	Total.	Males.	Females.	Under 16 years of age.	
Bacilli found	646	408	208	30	180
Bacilli *not* found	1909	560	457	892	237
TOTAL	2,555	968	665	922	417

Sputum Positive Cases.—The number of living sputum positive cases on the Dispensary Register on January 1st, 1924, was 632; during the year 125 of these died, and also 46 patients in whose sputa tubercle bacilli were found in the course of the year.

210 cases were added to the register, making a total at the end of the year of 671, consisting of 441 males, (including 184 ex-service men), 209 females and 21 children.

516 of these patients visited the Dispensary during the year. Of the 155 who failed to attend 103 were reported by the nurses to be working or fit for work; 25 were moderately well, while 6 had relapsed, and were mostly confined to bed; in respect of the remaining 21 no information could be obtained.

In 6 instances Sanatorium treatment had been refused, but 93 patients had been treated at Barrasford Sanatorium.

The year of the original booking of all the sputum positive cases is given in the following table :—

YEAR PATIENTS FIRST ATTENDED DISPENSARY.

(Cases with Tubercle Bacilli in Sputum.)

1913.		1914.		1915.		1916.		1917.		1918.		1919.	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
17	11	18	16	13	9	17	10	22	10	28	6	32	11

1920.		1921.		1922.		1923.		1924.		Total.	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
56	13	41	13	46	21	77	32	82	70	449	222

" Negative " Cases.—The records of the patients in respect of whom no tubercle bacilli have been found in the sputum are filed separately from those of the sputum positive cases, and 1,909 patients in this category attended during the year. This number included 999 males (237 ex-Service men) and 910 females. The preponderance of male cases was nothing like so pronounced as in the sputum positive group, and it is noteworthy that children were much more numerous, constituting 46·7 per cent. of the total as opposed to 4·6 per cent. of the bacteriologically verified cases. While the majority of these " negative " cases were " suspects " or " contacts," 808 had been notified as suffering from some form of tuberculosis. The details are set out below :—

"NEGATIVE" CASES WHO ATTENDED THE DISPENSARY DURING 1924.

Notified.	Males.	Females	TOTAL.
Lungs	248	202	450
Glands	60	82	142
Abdominal	34	35	69
Joints	28	24	52
Bones	17	15	32
Spine	13	11	24
Skin	8	10	18
Disseminated	9	4	13
Genito-Urinary	4	..	4
Meninges	2	2	4
Not Notified	576	525	1101
TOTAL	999	910	1,909

The year in which the various patients first attended the Dispensary is given in the subjoined table:—

YEAR PATIENTS FIRST ATTENDED DISPENSARY.

1913		1914		1915		1916		1917		1918		1919	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
13	13	16	12	15	13	18	15	28	26	39	24	44	31

1920		1921		1922		1923.		1924.		TOTAL.	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
69	57	71	68	121	94	190	173	375	384	999	910

Relations with other Departments, etc.—The relations existing between the Dispensary and the medical practitioners of the City, the local hospitals and other agencies were, as in previous years, cordial and intimate.

The vast majority of new cases entered on the Dispensary Register were referred either directly by the local doctors (57 per cent.) or else by the visiting nurses after notification (23 per cent.).

In many cases it was considered that more appropriate treatment or advice could be given elsewhere, and 172 patients were given letters of recommendation to other departments, hospitals or charitable agencies.

Thus 84 cases were referred to the Voluntary Tuberculosis Care Council, 21 to the Citizen's Service Society, 13 to the United Services Fund, 15 to the Principal School Medical Officer, 9 to the Dental Hospital, 8 to the Maternity and Child Welfare Department, and smaller numbers to the Royal Victoria Infirmary, the Poor Children's Holiday Association, Maternity Hospital, Board of Guardians, etc.

Every effort is made to verify each notified case by bacteriological means, and during the year 1,454 specimens of sputum were examined at the Dispensary.

Of this number 298 were found to contain tubercle bacilli, while 1,156 gave negative results.

In addition 639 samples of sputum were sent, for examination, to the College of Medicine by the medical practitioners of the City.

Of these 114 proved positive, and 525 negative.

Work of the Nurses.—1,023 new patients were seen as against 934 in 1923, and 11,885 subsequent visits were made, giving a grand total of 12,908 for the year.

2,396 of these visits were paid to ex-Service men.

The number of patients on the Nurses' lists on December 31st, 1924, was 2,479, comprising 960 males (including 370 ex-Service men), 680 females, and 839 children.

In 651 cases tubercle bacilli had been found in the sputum, and special attention has always been paid to these infective cases.

They are visited at least once monthly, and their contacts are kept under the closest possible supervision.

During the year, the names of 1,040 patients were removed from the nurses lists; this total includes 333 deaths (190 sputum positive and 143 negatives).

Visits to 707 patients were discontinued on the instruction of the Tuberculosis Medical Officer; of these only 28 were sputum positive cases, while 679 were negatives.

Discontinuation in the sputum positive cases was usually due to the fact that the patient had ceased to live in the City.

In the vast majority of the negative cases the names were removed because there was no evidence of active tuberculosis.

The Work of the Sanitary Inspector.—This officer disinfects houses after deaths or changes of address of consumptives, arranges for the removal and disinfection of phthisical patients' clothing and bedding, and reports on any insanitary conditions existing in the homes of dispensary patients, such as overcrowding, insufficient ventilation, or defective sanitary arrangements.

The details of his work were as follows:—

Houses visited		778
Houses disinfected (total)		721
For patients going to Sanatoria	114	
For patients changing their address	64	
For patients going to Hospital	398	
After death	270	
Rooms disinfected in above houses		846
Total number of visits		1300

Houses found to have sanitary defects (including overcrowding) and referred to the Senior Sanitary Inspector 177

INSTITUTIONAL TREATMENT.

36 beds were provided at Barrasford Sanatorium for early or moderately advanced cases of pulmonary tuberculosis, 92 beds were available for more advanced or emergency cases at the Sanatorium Pavilions at the City Hospital, Walker Gate, while at Stannington Sanatorium 30 beds were maintained for the treatment of tuberculous children.

Barrasford Sanatorium.—99 patients (64 men and 35 women) were admitted in the course of the year, including 2 "suspects" sent up for observation purposes; 6 were suffering from pleurisy with effusion, and of the remainder 34 were classified at the Dispensary as being in Stage I., 44 in Stage II., and 13 in Stage III.

The details as to "insured" and "uninsured" persons, males and females, together with the average length of stay in the institution, are submitted herewith :—

PATIENTS WHO RECEIVED TREATMENT IN BARRASFORD SANATORIUM DURING YEAR 1924.

	In Barrasford Sanatorium on 1st January, 1924.	Admitted during Year.	Persons who completed Treatment during year.			In Barrasford on 31st Dec. 1924.
			Number.	Total Number of Days.	Average Length of Stay in days.	
Uninsured Males ..	1	7	5	675	135	3
Uninsured Females	4	18	18	2132	118	4
Insured Males	20	57	61	8284	136	16
Insured Females ..	5	17	10	2163	216	12
TOTAL	30	99	94	13,254	141	35

The results of treatment were satisfactory, and the condition of the patients on discharge was as follows :—

Results.	Males.	Females.	Total.
(*a*) Fit to Work	29	17	46
(*b*) Improved	24	6	30
(*c*) Without Improvement	13	4	17
(*d*) Died in Sanatorium	..	1	1
Total	66	28	94

1 patient was re-admitted and is counted as 2 admissions.

Each discharged patient is visited at frequent intervals by one of the Dispensary Staff and is encouraged to report periodically so that he can be examined and records kept of his condition.

In the next table a summary is given of the condition on December 31st, 1924, of all the patients treated at the Corporation expense since 1908. It will be noticed that most of the earlier cases are returned as dead or untraceable :—

PATIENTS WHO RECEIVED TREATMENT IN BARRASFORD SANATORIUM, AND THE RESULTS.

YEAR.	Number of Patients discharged from Barrasford Sanatorium.	MALES.	FEMALES.	Condition at end of Year 1924.					Total Number of days in the Sanatorium.	Average number of days in the Sanatorium.
				Well, working or fit to work.	Improved or moderately well.	Relapsed.	Dead.	Lost sight of, or left the district.		
1909	55	34	21	2	2	..	39	12	6,260	114
1910	63	40	23	4	5	1	39	14	6,471	101
1911	72	46	26	12	3	..	48	9	6,868	97
1912	67	47	20	7	1	1	39	19	5,396	81
1913	85	58	27	9	2	..	47	27	9,567	112
1914	78	59	19	20	4	1	41	12	9,723	124
1915	74	54	20	13	6	..	35	20	10,803	146
1916	64	45	19	10	2	..	38	14	10,005	156
1917	68	45	23	19	4	1	31	13	10,603	156
1918	89	81	8	27	2	3	41	16	11,926	134
1919	107	85	22	31	9	2	51	14	14,207	133
1920	131	105	26	49	11	6	50	15	17,127	129
1921	112	88	24	35	14	1	55	7	13,544	122
1922	77	58	19	29	8	4	27	9	10,515	136
1923	100	76	24	54	12	9	20	5	14,062	140
1924	94	66	28	55	19	9	9	2	13,254	141
TOTAL ..	1,336	987	349	376	104	38	610	208	170,331	127
Received treatment in previous years ..	73	52	21	22	8	6	31	6	..	..
Nett Cases	1,263	935	328	354	96	32	579	202	170,331	135

While the appearance of tubercle bacilli in the sputum indicates that there is active destruction of lung tissue, still it must be recognised that there is always a doubt about any case in which the diagnosis has not been verified bacteriologically.

Accordingly the bacterial history of each patient admitted to Barrasford Sanatorium has been investigated as thoroughly as possible, and the results are tabulated below :—

BACTERIAL HISTORY OF PATIENTS WHO RECEIVED TREATMENT IN BARRASFORD SANATORIUM.

YEAR.	Persons discharged from Barrasford Sanatorium.			Number who had Tubercle Bacilli found in the Sputum after discharge.	Persons deceased at the end of the year.				Cases who had Tubercle Bacilli in the Sputum and could not be traced at end of Year.
	TOTAL Nett Cases.	Number who had Tubercle Bacilli found in the Sputum.	Number who had *not* Tubercle Bacilli found in the Sputum.		TOTAL.	Tubercle Bacilli found in the Sputum before or during treatment.	Tubercle Bacilli found in the Sputum after discharge.	No record of Tubercle Bacilli ever found in Sputum.	
1909	55	35	20	2	39	31	2	6	1
1910	63	45	18	3	39	32	3	4	8
1911	67	45	22	6	44	36	4	4	5
1912	63	36	27	10	36	26	5	5	9
1913	81	52	29	3	46	37	3	6	10
1914	74	53	21	2	39	36	2	1	4
1915	73	51	22	3	34	29	3	2	7
1916	63	47	16	3	38	33	3	2	7
1917	64	42	22	5	28	23	3	2	7
1918	83	55	28	4	39	34	2	3	10
1919	102	82	20	4	49	48	1	..	9
1920	127	89	38	3	48	47	..	1	8
1921	106	84	22	4	51	47	2	2	5
1922	64	49	15	1	24	20	2	2	2
1923	95	77	18	..	19	17	1	1	5
1924	83	69	14	..	6	6	..	..	1
TOTAL	1,263	911	352	55	579	502	36	41	98

The very heavy mortality experienced by the bacteriologically verified cases shows how serious is the finding of tubercle bacilli in the sputa of patients of the industrial classes.

STANNINGTON SANATORIUM.

The 30 beds were kept fully occupied throughout the year, and 41 patients completed treatment.

The details appear below :—

CHILDREN WHO RECEIVED TREATMENT IN STANNINGTON SANATORIUM DURING YEAR 1924.

	In Sanatorium on 1st Jan., 1924.	Admitted during the Year.	Persons who completed Treatment during the year.			In Sanatorium on 31st Dec. 1924.
			Number	Total Number of Days	Average length of stay in Days.	
Males	17	20	21	5,910	281	16
Females	13	21	20	6,024	301	14
TOTAL	30	41	41	11,934	291	30

In nearly every case great benefit accrued to the patient, as is shown in the following return :—

	Males.	Females.	Total.
(*a*) Much Improved	7	5	12
(*b*) Improved	12	15	27
(*c*) Without Improvement	2	..	2
(*d*) Worse	..	..	..
TOTAL	21	20	41

SANATORIUM PAVILIONS, WALKER GATE.

Owing to the urgent demand for hospital accommodation, the number of beds was increased from 62 to 92. 304 patients were admitted, and of these 70 were ex-service men, 1 of whom was a pensioner residing in another district. 129, i.e., 42 per cent. of the new cases admitted, were female patients, which is a much greater proportion than in previous years.

Details of the number of patients admitted and the average length of stay in days are given in the accompanying table :—

PATIENTS WHO RECEIVED TREATMENT IN SANATORIUM PAVILIONS AT THE CITY HOSPITAL, WALKER GATE, DURING YEAR 1924.

	Patients in Hospital on 1st Jan., 1924.	Patients Admitted	Patients who have completed Treatment			In Hospital 31st Dec., 1924.
			Number	Total Number of days.	Average length of stay in days.	
Uninsured, Males	6	29	28	2,950	105	7
Uninsured, Females..	24	100	99	10,756	109	25
Insured, Males	32	146	135	15,408	114	43
Insured, Females	4	29	23	2,519	109	10
TOTAL.....	66	304	285	31,633	111	85

N.B.—8 patients were re-admitted and are counted as 16 admissions.

Treatment has been on Sanatorium lines, modified to some extent in view of the type of patient ; the essentials are the same, however, namely, rest and good food under satisfactory hygienic conditions, with exercise graduated to the patient's tolerance.

Collapse therapy was practised on a fairly extensive scale. Attempts to introduce an artificial pneumothorax were made in 32 instances, of which 22 were successful. In addition "refills" were given to 7 patients who had received their initial treatment elsewhere, and to 11 cases who had commenced treatment before January 1st, 1924.

The method has continued to give satisfactory results, but as explained last year, the majority of the cases treated at this institution are too advanced to give hopes of permanent cures.

63 patients, all of whom were residents of Newcastle, died in the institution; the condition of the other patients on discharge is given in the table below :—

	Males.	Females.	Total.
(*a*) Fit to Work	..	..	..
(*b*) Improved	89	76	165
(*c*) Without Improvement	33	24	57
(*d*) Died in Hospital	41	22	63
TOTAL	163	122	285

Many of those discharged " improved " were fit for light work, while 17 were transferred to Barrasford Sanatorium.

Other Institutions.—Numerous cases of surgical tuberculosis were treated in the general hospitals, e.g., the Royal Victoria Infirmary and the Fleming Memorial Hospital. In addition, 119 patients admitted to the Poor Law Institution (Wingrove Hospital), were notified as suffering from tuberculosis; 90 of these (47 males and 43 females) being lung cases and 29 (18 males and 11 females) suffering from non-pulmonary tuberculosis.

Deaths in Institutions.—173 of the deaths from tuberculosis (128 " lungs " and 45 " other forms ") occurred in institutions. As previously mentioned, 63 patients died in Walker Gate Hospital. 71 patients (51 " lungs " and 20 " other forms ") died in Wingrove Hospital, 10 patients (8 " lungs " and 2 " other forms ") in the Royal Victoria Infirmary, 8 patients (1 " lungs " and 7 " other forms ") in the Fleming Memorial Hospital, and 2 patients in other institutions.

The various activities of the Tuberculosis Section have been summarised, and are set out on the following page, together with the corresponding figures for previous years.

TUBERCULOSIS SECTION.

Summary of Work Done.

	Average for 5 years.		1923	1924
	1913-17	1918-22		
Notifications ..... Total	1013	786	833	812
Lungs.....	661	538	544	540
Other Forms	352	248	289	272
Notified by T.M.O.	174	184	170	163
Deaths (Corrected)..... Total	536	469	414	421
Lungs.....	382	354	311	322
Other Forms	154	115	103	99
Attendances at Dispensary.....	6777	10588	8758	8476
New Patients	899	919	925	954
Barrasford Sanatorium				
Admitted.....	74	105	93	99
Discharged	74	103	100	94
Stannington Sanatorium.				
Admitted.....	58	44	37	41
Discharged	52	44	37	41
Sanatorium Pavilions, Walker Gate.				
Admitted.....	92	187	211	304
Discharged	62	134	153	222
Died	23	48	46	63
Bacteriological Exams.				
College of Med.....Total	690	604	602	639
Sputum—Positive	177	138	107	114
Negative	513	466	495	525
Dispensary ..... Total	678	1546	1713	1454
Sputum—Positive	151	343	387	298
Negative	527	1203	1326	1156
Urine Examinations	586	921	944	936
Evening Consultations.				
Attendances	1023	1378	961	888
New Patients	99	63	32	47
Work of Nurses.				
New Patients	800	632	934	1023
Subsequent Visits	5362	11295	11969	11885
Total Visits	6162	11927	12903	12908
Special Inspector's Visits.....	1560	1016	1145	1300
Houses Disinfected	533	513	687	721
Rooms Disinfected	853	578	740	846
Sanitary Defects—				
Houses.....	38	68	109	177

ADDENDUM.

REPORT ON EX-SERVICE MEN.

In the ordinary course of things, it was natural that a large percentage of the adult male patients attending the Tuberculosis Dispensary during the past 10 years should have served in His Majesty's Forces during the Great War, but it is not always realised what a large amount of work was entailed, as separate records had to be kept, and special reports were frequently called for.

Patients were referred to the Dispensary by the Local War Pensions Committee for purposes of certification or treatment; by the Medical Boards of the Ministry of Pensions for special examination and report as to the presence or otherwise of tuberculosis, and by general practitioners in the ordinary way.

The object of this report is to give some details regarding the number of cases seen, certificates given, treatment received by the patients, etc. At the outset a special card index system was instituted, and proved very helpful.

During the ten years, January 1st, 1915, to December 31st, 1924, 1,337 ex-service men attended the Tuberculosis Dispensary, and of these 703 had been notified as suffering from tuberculosis of the lungs, 43 from non-pulmonary tuberculosis, while 591 had never been notified as suffering from any form of tuberculosis. 517 of the "lung" cases had been verified bacteriologically, and in 46 instances the diagnosis of non-pulmonary tuberculosis (arrested in 7 cases) was made.

Practically all the remaining 774 were referred to the Dispensary as cases, or suspected cases, of pulmonary tuberculosis. 146 of these 774 patients were diagnosed at the Dispensary as definite, probable, or arrested tuberculosis of the lungs or pleura, while 380, or nearly 50 per cent., of the negative cases were regarded, after prolonged observation, as suffering from bronchitis, accompanied by some degree of fibrosis of the lung, in many cases, and emphysema in the majority. This question of the differential diagnosis between chronic bronchitis and pulmonary tuberculosis has proved a very serious stumbling block for the Ministry of Pensions, and there is no doubt that a very large number of individuals have been awarded pensions for pulmonary tuberculosis when the real disability was bronchitis or some other non-pulmonary affection of the lung.

In 30 of the cases the diagnosis was altered, officially, from tuberculosis to some non-tuberculous condition.

Of course emphysema and chronic bronchitis are often sequelæ of pulmonary tuberculosis when this proceeds to arrest, but in the writer's opinion, the vast majority of the cases under consideration were non-tuberculous in origin. Now that facilities are available for examination with the Rongten rays, most of these cases are being investigated, with the assistance of Dr. Hurrell, to see, if possible, in what proportion the original cause was tuberculosis.

Other chest conditions diagnosed were asthma and bronchiectasis, 4 cases of each, emphysema 5 cases, and sequelæ of gunshot wounds 15 cases.

An interesting point is that definite pulmonary tuberculosis was only rarely discovered after penetrating wounds of the lungs. In only five of the sputum positive cases, approximately 1 per cent., was there evidence of gun shot wounds of the chest, and in one of these cases the patient had suffered from a definite attack of pleurisy, with effusion, at least two years before he was wounded. In none of the five cases was there any family history of tuberculosis.

The 15 negative cases have been kept under observation for years now, and none of them has so far presented any definite signs of pulmonary tuberculosis.

In view of these figures, it would be very interesting to know the total number of men in Newcastle who have suffered from gun-shot wounds of the chest.

49 patients were suffering from lesions of the circulatory system.

Amongst the remaining cases a great variety of diseases was detected, and in 68 instances no definite evidence of organic disease was discovered.

793 of the 1,337 individuals were pensioners, and of these 325 had been granted their pensions on discharge from the services.

Treatment Received.

Ex-service patients were always regarded as emergency cases, and their admission to institutions was never delayed.

During the war the regular practice was to admit the patients direct from the Military Hospitals to the Tuberculosis Wards at Walker Gate, and transfer them to Barrasford Sanatorium, if their condition warranted this step. 322 patients were treated in Barrasford Sanatorium, and 19 cases were granted a second course of treatment, thus making a total of 341 admissions. 363 patients were admitted to the Tuberculosis Wards at Walker Gate, and there were 99 re-admissions, the total thus being 462. Of course a large proportion of the patients received treatment in both institutions.

While the patients were at home and in receipt of Domiciliary Treatment, they visited the Dispensary, at intervals, to be examined and for observation purposes. 2,388 certificates in respect of these patients were furnished to the Local War Pensions Committee by the Tuberculosis Medical Officer; in addition, 509 special reports on cases of suspected pulmonary tuberculosis were called for by the Deputy Commissioner of Medical Services (Ministry of Pensions).

Every endeavour was made to improve the home conditions of the patients, and 15,668 visits were paid to them by the outdoor staff of the Dispensary.

During 1924, 421 (184 T.B. positive and 237 T.B. negative) ex-service men visited the Dispensary, and the nurses paid 2,396 visits to their homes.

19 patients (12 sputum positive) were granted special courses of training after Sanatorium Treatment.

The results cannot be regarded with satisfaction, for on December 31st, 1924, only two patients (one sputum-positive, one negative) were employed in the new occupation in which they had received training.

Four patients (one positive, three negative) were working at other trades, while 9 (six positive and three negative) were unemployed. One positive case had left the district, and no information was available. The remaining three cases, all positive, were dead. These figures show the futility of training patients in new occupations unless some provision is made for continuous employment after the course of training has been completed.

Deaths.

The outlook for the patients was very materially affected by the finding of tubercle bacilli in the sputum. Thus of 517 sputum positive cases 279 were dead on December 31st, 1924, and of 46 cases of non-pulmonary tuberculosis, 5 were dead. Of the remaining sputum negative cases, *i.e.*, 781, only 45 were known to have died, the causes of death being certified as pulmonary tuberculosis in 12 instances, bronchitis in 9, heart disease in 5, pneumonia in 5, sarcoma in 2, diabetes 2, various other diseases 10. As it is only reasonable to conclude that tubercle bacilli would have been found in the sputum of the 12 patients, certified to have died from pulmonary tuberculosis, had the material been available, these 12 cases can safely be deducted.

Whereas 279 of 517 sputum positive cases died, only 33 of 769 sputum negative cases are known to be dead. While it is possible that a few deaths of sputum negative cases have escaped record, the contrast is astounding, and only emphasises the heavy case-mortality rate of definite pulmonary tuberculosis amongst the industrial population, in spite of treatment by the methods in general use at present. The pensions

granted to ex-service men appeared, however, to be of some assistance to them in their struggle with the disease.

238 sputum positive cases were still alive on December 31st, 1924; some, it is true, were not very well, but the majority were either working or fit for suitable work.

As regards the fatal cases, it is found that the average duration of illness was more than 5 months longer amongst ex-service men than amongst "all males" (44·6 months against 39·4 months). When it is borne in mind that many of the ex-service men were extremely ill on discharge from the services, it seems certain that the treatment and support given to them has had a definite beneficial effect in prolonging life, quite apart from material benefits conferred. The United Services Fund has been of great assistance to many men, who have not been in receipt of pensions, and particularly to the dependents of ex-service men. By the provision of grants "in kind," and securing treatment of delicate children in convalescent homes, much good work of a preventive nature has been accomplished.

Towards the end of 1924, the United Services Fund extended its activities by opening a Convalescent Home (Douglas House) at Bournemouth for ex-service men suffering from arrested or quiescent tuberculosis, who were in need of a rest and change of air. At the time of writing, May 31st, 16 Newcastle patients have been admitted, and all those who have completed their term of treatment are more than satisfied with the arrangements made for their comfort.

The relations existing between the Tuberculosis Dispensary and the Local War Pensions Committee, the local organisation of the Ministry of Pensions, the United Services Fund, etc., have always been extremely happy ; in addition to the work described above, the Tuberculosis Medical Officer acted as Medical Adviser to the Health Section of the Local War Pensions Committee from October, 1916, until June, 1919, and assisted in a special enquiry on the 10th January, 1919, into the best methods of dealing with the numerous cases of chronic bronchitis coming before the notice of the Health Section.

All that has been written hitherto deals with the ex-service men and their dependants ; as has been pointed out in previous reports, it is noteworthy that no single case came to the writer's notice of a girl who had been discharged from the Women's Auxiliary Forces (W.A.A.C., W.R.A.F., etc.) on account of tuberculosis, and in no case was service with these forces cited as connected in any way with tuberculosis.

W. H. Dickinson, M.D., M.R.C.P. Ed.,

Tuberculosis Medical Officer.

BARRASFORD SANATORIUM.

Report of the Medical Superintendent.

To the Medical Officer of Health.

Sir,

I beg to submit a report on the work at Barrasford Sanatorium during the year 1924.

The routine of the Sanatorium has been continued precisely as in other years, and the many improvements in and additions to the institution, sanctioned by the Corporation in the previous three years, caused the requirements in the way of large schemes for 1924 to be light as compared with those in the past.

Nothing of any moment has occurred in the tuberculosis world to cause any change in the methods of treatment. The numerous vaccines and sera, mixtures and cults born, and often exhumed, raised the hopes of the consumptives, but failed to do more, and the efficient Sanatorium remains the only known means of treatment which can restore, even temporarily, the health and working capacities of large numbers of sufferers from pulmonary tuberculosis.

There is no exogenous specific cure for tuberculosis, and healing of the condition can be accomplished only by the natural powers of resistance which the body possesses for dealing with infections, and these powers are reinforced by the principles and practices laid down in treatment carried out at well equipped and efficient

sanatoriums. If sanatorium treatment could be applied early enough, and for a sufficiently long period, the results would be much improved. In this direction it can be brought out again that in connection with the patients discharged from Barrasford in 1923, the average length of time between the occurrence of symptoms and admission to the Sanatorium was not less than 12 months, and that during the year under review no less than 136 of the 151 definite cases had extensive disease in the lungs on admission.

A feature of the year was the increased demand for beds for female cases. At times every available bed for female cases was occupied, and a waiting list was necessary. On the other hand, there have been vacant beds always available on the male side.

As in previous years, the library has been widely used by the patients, to whom it is a boon. It has been added to by several packages from the British Red Cross Society, by 100 novels from Councillor W. V. Longfield, and by numerous other private contributors.

The X-Ray plant has continued to be employed widely, and has been of the utmost value in three directions :—

(a) In aiding in differential diagnosis in doubtful cases admitted for observation and opinion.

(b) In deciding whether cases are suitable for treatment by artificial pneumothorax.

(c) As a control in treatment by artificial pneumothorax by showing the degree of compression of the lung produced by the pneumothorax, and the presence of any complication.

In the report for 1923, which was written four months after the installing of the X-Ray plant, it was stated that an X-Ray film was taken of each case shortly after admission, but in fact this was not continued after April, 1924, on account of the vast amount of time required, which was not available, and also by reason of the cost. At the present time films are taken, as a routine only, of cases in which tubercle bacilli have not been demonstrated in the sputum, and in patients where the prospect of artificial pneumothorax arises. In other cases a film is taken only if there is some special reason for so doing During the year 161 films were completed and filed, and innumerable examinations with the fluorescent screen (or " screenings ") were made in connection with the artificial pneumothorax work.

Admissions.—The number of cases admitted during 1924 has been substantially the same as in 1923, most Authorities sending approximately similar numbers as in the previous three years. The number of Newcastle patients admitted was increased by 6, and the West Hartlepool total was reduced by 10. No cases have been forthcoming from other authorities to fill the 30 beds which prior to 1922 were occupied by cases from the Northumberland County Council.

50 of the cases admitted during the year had been in residence previously, and were disposed as follows :—

Newcastle Corporation—13 out of 99.
Gateshead Corporation—19 out of 42.
Northumberland County Countil—8 out of 15.
West Hartlepool Corporation—10 out of 24.

ADMISSIONS TO THE SANATORIUM DURING 1924.

Authority.	Male.	Female.	Total.
*Newcastle Corporation	64	35	99
*Northumberland County Council	15	..	15
Gateshead Corporation	42	..	42
Tynemouth Corporation	3	4	7
West Hartlepool Corporation	15	9	24
South Shields Corporation	1	..	1
Tynemouth Union	1	..	1
Armstrong, Whitworth's Employés' Medical Fund	..	1	1
Private Cases	8	2	10
Ministry of Pensions	1	..	1
	150	51	201
During 1923	155	52	207
During 1922	212	55	267
During 1921	220	60	280

* Including one patient admitted twice and counted as two.

The cases discharged from the Sanatorium corresponded in the main with those of other years. There was only one case of summary dismissal, the first since the Corporation acquired the Sanatorium in February, 1921.

On the whole, the Medical Superintendent's recommendations to patients as to length of treatment were accepted willingly, only 7 cases leaving against medical advice. In these cases the reasons given were that they were unable to settle down (6), or feared that they would lose their work (1).

7 cases were discharged soon after admission, because they appeared to be too ill to justify prolonged treatment, and all of these are known to have died.

One case was sent home on account of uncontrollable insomnia, and in 15 cases patients were discharged within a short time of admission, as observation and

examination showed clearly that they were not suffering from pulmonary tuberculosis; 32 other cases were judged to be not suffering from pulmonary tubercle, but the condition was more obscure, and the differential diagnosis took some time to establish.

DISCHARGES FROM THE SANATORIUM DURING 1924.

Authority.	Male.	Female.	Total.
*Newcastle Corporation	66	28	94
*Northumberland County Council	18	..	18
Gateshead Corporation	42	..	42
Tynemouth Corporation	2	5	7
West Hartlepool Corporation	15	10	25
South Shields Corporation	2	..	2
Durham County Council	..	1	1
Tynemouth Union	1	1	2
Armstrong, Whitworth Employés' Medical Fund	..	..	..
Private Cases	5	1	6
Ministry of Pensions	1	..	1
	152	46	198
During 1923	167	52	219
During 1922	229	65	294
During 1921	212	62	274

* Including one case discharged twice and counted as two cases.

SUMMARY OF MOVEMENTS OF PATIENTS DURING 1924.

	In residence night of Dec. 31st, 1923.	Admitted during 1924.	Discharged during 1924.	In residence night of 31st Dec., 1924.
Newcastle Corporation	30	99	94	35
Northumberland County Council	5	15	18	2
Gateshead Corporation	10	42	42	10
Tynemouth Corporation	2	7	7	2
West Hartlepool Corporation	3	24	25	2
South Shields Corporation	1	1	2	..
Durham County Council	1	..	1	..
Tynemouth Union	1	1	2	..
Armstrong, Whitworth Employés' Medical Fund	1	1	..	2
Private Cases	..	10	6	4
Ministry of Pensions	..	1	1	..
	54	201	198	57

The particulars of patients, and the results of their treatment are based on the discharged, that is completed, cases.

As stated, 198 patients left the institution during the year, but 47 cases were judged not to be suffering from pulmonary tuberculosis, and they are excluded from the particulars and results of treatment which follow later, and which refer only to the 151 cases of definite tuberculosis of the lungs or pleuræ

The number of non-tuberculous cases is large, but in many (27) of them the diagnosis of pulmonary tuberculosis had been made by Medical Boards a varying number of years ago, and handed on to the Tuberculosis Medical Officers for treatment, while others were sent for observation. Several of these cases had been in the Sanatorium at some time previously and marked as doubtful cases or non-tuberculous, and it is since the installation of the X-Ray plant that an amended diagnosis can be given with assurance. When a given case states a history of continuous chronic chest trouble for some years, and at the end of that period there are only indefinite and inconclusive signs of lung impairment, coupled with the absence of bacilli from the sputum on repeated examination, a diagnosis of pulmonary tuberculosis is not justifiable, but when under these conditions an X-Ray film of the lungs shows no evidence of changes characteristic of tuberculosis, then the diagnosis of pulmonary tuberculosis can be set aside with confidence. 30 of the 47 non-tuberculous cases fell into this category. The diagnosis of these 47 cases were as follows :—chronic bronchitis (20), chronic bronchitis with emphysema (5), bronchiectasis (6), pulmonary

fibrosis following gassing (1), mitral stenosis (3), lymphosarcoma of lung (1), simple pharangitis and laryngitis (1), other infections (4), no definite lesion detected (6).

Only 10 cases (M.4, F.6) sent from the Newcastle Dispensary, were judged not to be suffering from tuberculosis of the lungs. One of the non-tuberculous cases—that of lymphosarcoma—died in the Sanatorium.

Some of the details of the 151 definite cases discharged during the year are appended.

SOCIAL STATUS.

	Male.	Female.	Total.
Single	47	19	66
Married	66	13	79
Widowers	3	..	3
Widows	..	3	3
	116	35	151

AGE.

Years.	Male.	Female.	Total.
16—20	8	4	12
20—25	16	11	27
25—30	16	6	22
30—35	23	7	30
35—40	20	4	24
40—45	13	2	15
45—50	12	1	13
50—55	6	..	6
55—60	2	..	2
	116	35	151

Occupations of 116 Male Cases :—

Labourers	19
Engineering and Metal Workers	16
Clerks	14
Miners	11
Railway Employés	5
Shoemakers	3
Bar Managers and Barmen	3
Letter Press Printers	3
Commercial Travellers	2
Seamen	2
Tailors	2
Screeners	2
Checkers	2
Telephone Operators	2
Motor Drivers	2
Joiners	2

and one each of the following occupations :—

Baker, Cartman, Cabinet Maker, Film Renter, Casual Worker, Builder, Bacon Roller, Glass Bottle Maker, Electric Crane Driver, Farm Worker, Wharfman, Interpreter, Moulder, Furnaceman, Chemist, Shipwright, Rivetter, Shop Assistant, School Teacher, Ordnance Map Mounter, Caulker, Police Constable, Blacksmith's Striker, Stoker, Hawker, Blacksmith.—Total——116.

Occupations of 35 Female Cases :—

Housewives	20
Domestic Servants	3
Nurses	3
Clerks	3
Shop Assistants	3

and one each of the following occupations :—

Barmaid, Messenger, and one had no occupation. Total—35.

45 cases (39 males, 6 females) of the full number discharged had been in residence before.

The average duration of treatment of all cases was 116·3 days, but these figures include the period of residence of the non-tuberculous cases, in whom sanatorium treatment was discontinued as soon as it was clear that they were not suffering from tuberculosis of the lungs, as mentioned earlier in the report. The average period of residence of all the tuberculous cases only was 131·9 days; that for the Newcastle tuberculous cases alone being 159·6 days. The 94 Newcastle patients averaged a period of treatment of 140·9 days, the 66 males staying 135·7, and the females 153·4. This is almost exactly the same as in 1923, when it was 140·6 days. The longest stay made by any completed case was 637 days, and the shortest was 8 days. The average number of beds occupied daily during the year was 68·6 (68 in 1923), the average for males being 48·1 (51·7 in 1923) and that for females 20·5 (16·3 in 1923).

The total number of patient days was 25,125, divided into male 17,628, and female 7,497.

Below is given an analysis of the average number of beds occupied, and the number of patient days :—

Authority.	Average Beds occupied daily.	Patient Days.
Newcastle Corporation	41·6	15,256
Northumberland County Council	3·7	1,356
Gateshead Corporation	9·9	3,629
Tynemouth Corporation	2·0	732
West Hartlepool Corporation	6·6	2,433
South Shields Corporation	0·25	93
Durham County Council	0·42	157
Tynemouth Union	0·59	219
Armstrong, Whitworth Employés' Medical Fund	1·4	523
Private Cases	1·7	643
Ministry of Pensions	0·22	84

The diagnosis of pulmonary tuberculosis was confirmed bacteriologically either before admission or during residence in 131 cases ; 103 males, and 28 females. 61 patients, 47 males and 14 females, were apparently without tubercle bacilli in the sputum, and 2 males and 4 females said they had no expectoration. 1,059 sputum examinations were made at the Sanatorium during the year, and of these 227 were positive as regards the presence of tubercle bacilli, and 832 were negative. 944 complete physical examinations of the chest were made during the year, together with routine examinations of the larynx and the urine on admission of the patients, and subsequently when necessary.

Treatment.—Nothing has been changed in the routine of treatment. The greatest emphasis has been laid on securing rest in bed when the bodily temperature has been seen to show any departure from the normal, and in the majority of cases showing pyrexia on admission, a normally ranging temperature has been secured by this means.

In such a strength-reducing disease as pulmonary tuberculosis, abundance of rest is essential, and cases with normal temperatures rest in the recumbent position for several periods daily, which allows the resisting powers of the body as a whole to be recruited, and further, patients are urged to avoid any exertion which accelerates the rate of respiration and thereby subjects the diseased foci in the lungs to stress and strain. In this way, local rest to the lung is obtained best, apart from operations of pneumothorax, thoracoplasty, etc., which in suitable cases secure physical immobilization. By these means, and a full, generous diet, the needs of the consumptive are best served. Graduated exercise,

morning and afternoon, is undertaken by all patients who are without raised temperature. The walks are prescribed by the Medical Superintendent to each individual patient daily, according to requirements and conditions. Treatment by tuberculin has been abandoned finally.

Artificial pneumothorax treatment has been employed to a considerable degree, and the results obtained are highly encouraging. 28 cases were judged to be suitable for this form of treatment, 18 being male cases, and 10 female. In 13 cases (9 male, 4 female) changes within the chest prevented the treatment being employed, leaving 15 cases in which an artificial pneumothorax was induced actually. In addition to these were 5 patients in whose cases a pneumothorax had been carried out at Walker Gate prior to admission to Barrasford, making a total of 20 cases. In connection with these 33 cases, 171 operations were performed to maintain the collapse of the lung, and the total number of inductions carried out during the year was 322. Of the 20 cases in which the procedure was carried out, 6 showed no improvement and the pneumothorax was abandoned. In the remaining 14 cases the results were excellent. Cough and spit were abolished in several cases, and reduced very considerably in the remainder, and 3 cases were restored to apparent health who appeared hoplessly ill on admission. 10 of the 20 cases developed fluid in the pleural space on the side of the pneumothorax, and although the onset of this condition caused systemic disturbance in some cases, it soon subsided. However, the occurrence of an effusion is usually the first step in the gradual obliteration of the pleural space by adhesions, though in some few cases the

fluid appears to be completely absorbed. As in other years, the incidence rate seems to be 1 in 2. The effusions are tuberculous in nature, but the cause of the production of this condition does not seem to be clear—some cases have very numerous refills and never develop fluid ; others show an effusion after a few refills, whilst the technique is the same in all cases.

The treatment of pulmonary tuberculosis by artificial pneumothorax remains one of the few bright spots in the life of the tuberculosis physician.

Results of Treatment.—As in the past, the immediate results of treatment have been excellent. The table below shows the details of the total 151 definite cases who completed treatment.

	Male.	Female.	Total.
Fit for Work	37	18	55
Improved	45	9	54
Without Improvement	23	5	28
Worse	11	3	14
	116	35	151

The results of treatment so far as the 84 tuberculous Newcastle-upon-Tyne discharged cases alone are concerned, are as follows :—

	Male.	Female.	Total.
Fit for Work	25	10	35
Improved	15	6	21
Without Improvement	12	3	15
Worse	10	3	13
	62	22	84

The weight records of the 151 definitely tuberculous completed cases, and those of the 45 non-tuberculous, are as follows :—

		Gained up to 7 lbs.	Gained 7 to 14 lbs.	Gained over 14 lbs.	Remained stationary.	Lost up to 7 lbs.	Lost over 7 lbs.	Not weighed on discharge.	Total.
151 definite cases.	Gained weight..	57	48	28	..	..	..	..	133
	Lost weight....	..	..	..	..	13	4	.	17
	Stationary	..	..	..	..	..	..	..	..
	Not weighed on discharge....	..	..	..	..	..	..	1	1
	Total.....	57	48	28	..	13	4	1	151
47 non tuber-culous cases.	Gained weight..	30	10	2	..	..	..	..	42
	Lost weight ..	..	..	..	..	1	..	..	1
	Stationary	..	..	..	3	..	..	..	3
	Not weighed on discharge ...	..	..	..	..	..	..	1	1
	Total.....	30	10	2	3	1	..	1	47

The excellence of these results would be much marred if re-examined after a space of, say 2 years, but nevertheless the sanatorium remains the only known agent which can give results at all comparable. It seems undoubted that a small proportion will obtain permanent relief from symptoms, and a majority will regain their working capacities for a period, which would not have occurred without their having had sanatorium treatment. Much suffering will have been saved, and many fatal terminations delayed indefinitely.

Only 85 patients of the 151 definite cases showed normal temperatures throughout their residence. 66 cases were febrile at some time or other during their stay, and an analysis of the cases with regard to bodily temperature is given.

Afebrile throughout Treatment.	Febrile on Admission, Afebrile on Discharge.	Febrile Intermittently	Febrile throughout Treatment.
85	30	14	22

The majority of cases showed considerable extent of disease on admission. The following classification has been used to define the extent of tuberculous disease :—

Group 1.—Disease limited to small areas of one lobe on either side, which in the case of affection of both apices, does not extend beyond the spine of the scapula or the clavicle, or in the case of affection of the apex of one lung, does not extend below the second rib in front.

Group 2.—Disease more extensive than in Group 1, but affecting at most the whole of one lobe.

Group 3.—All cases of greater extent than Group 2, and all those with considerable cavitation.

When extent of disease is considered in these terms, it appears that :—

15 cases fell into Group 1.
67 cases fell into Group 2.
69 cases fell into Group 3.

It is obvious that it is much more difficult to obtain healing in a widespread condition than when the disease is limited, but observation seems to indicate that when the disease first causes symptoms in the lungs, it does so as the result of the sowing through the medium of the blood stream of a large number of bacilli which infect a comparatively large area of lung tissue from the commencement. The popular theory that a few bacilli commence work at one or other apex of the lungs, and gradually spread their activities, and that it is possible

therefore with systematic examinations to catch cases with very limited pulmonary disease, does not seem sound. The disease in the lungs is of comparatively wide extent to start with. Some cases, of course, come for treatment earlier than others, but in all cases an X-Ray film shows considerably more extensive disease than the physical signs indicate. This seems to be an added reason to explain the difficulty experienced universally in obtaining for treatment cases with very limited disease.

After-care still continues to be the weakest link in the chain which endeavours to draw the consumptive back to health. Considerable consideration has been given to this matter during the year by the Health Committee, especially in connection with the establishing of a Municipal Workshop where cases can work in accordance with their limitations, after receiving first the rest and graduated exercise that the Sanatorium alone can provide. This was referred to in the last annual report.

The position of the Barrasford Sanatorium in its distance from any centre makes impossible the consideration of the founding of any after-care scheme there; but it is hoped that Newcastle will shortly give a lead by the establishment of a workshop in the city for the employment of its tuberculous workers who are capable of work—many of them to a considerable degree—if protected and supervised.

The efficiency and tone of the Sanatorium owes much to the Matron, to whom my thanks are due for her assistance.

Yours faithfully,

CECIL G. R. GOODWIN,

Medical Superintendent.

Barrasford Sanatorium,

March 31*st*, 1925.

REPORTS OF THE VETERINARY OFFICER
AND INSPECTOR OF PROVISIONS,
AND OF THE INSPECTOR UNDER THE FOOD AND
DRUGS ACTS (SENIOR SANITARY INSPECTOR),

V.—FOOD.

BOVINE TUBERCULOSIS.
INSPECTION OF MEAT AND PROVISIONS.
INSPECTION OF FOOD AND DRUGS.

BOVINE TUBERCULOSIS, AND THE INSPECTION OF MEAT AND PROVISIONS AND FOOD AND DRUGS.

TUBERCULOUS MILK.

During the year seven samples of milk were reported to be tuberculous. The affected milks were from five different farms in Northumberland (3) and Cumberland (2).

In one of the cases the tuberculin test was applied to the herd, and of twenty-six cows eight reacted, of which two only showed clinical signs of tuberculosis.

At two farms clinical examination of the cows revealed affected animals. These were removed and samples from the milk of the remainder in each case were reported negative.

The cases of the remaining two farms, however, are illustrations of the difficulties which arise in dealing with tuberculous milk.

In the first of these a clinical examination disclosed one cow with a tuberculous udder. A check sample from the remainder of the herd was also reported positive, but on a second careful overhaul no cow could be discovered showing any clinical symptom of tuberculosis. It was ascertained, however, that after this check sample was obtained, four animals had been disposed of. A third sample was therefore taken, and this

was reported negative. In the other instance no cows could be discovered with clinical signs of tuberculosis. It was stated that subsequent to the taking of the sample, several animals had been sold, and that one of these on slaughter was found to have a tuberculous udder. A check sample, however, was also reported tuberculous, and after a second examination, one cow was excluded. A sample from the remainder was reported not to contain tubercle bacilli.

The following statement shows the percentage of milks found to be tuberculous each year since the institution of the bacteriological tests in 1906.

Year.	Percentage of Samples found Tuberculous.
1907	5·9
1908	3·8
1909	9·0
1910	5·4
1911	3·0
1912	10·4
1913	8·4
1914	6·7
1915	5·8
1916	8·7
1917	3·1
1918	2·9
1919	3·6
1920	6·3
1921	5·5
1922	7·0
1923	4·5
1924	3·2

INSPECTION OF MEAT AND PROVISIONS.

Report of the

Veterinary Officer, Inspector of Meat, etc.

To the Medical Officer of Health.

Sir,

I beg to submit herewith my Report upon that portion of my duties which fall within the scope of the Public Health Acts.

Diseases of Animals Acts, 1894-1922.

During the year under report, 19 outbreaks of contagious disease (as defined by the Acts) occurred amongst the animals within the City, as compared with 8 the previous year.

The Dairies, Cowsheds, and Milk Shops Orders, 1885-1899.

Within the City there are 22 cow-keepers, who occupy 34 cowsheds on 23 premises, and possess a total of 436 milch cows. During the year 39 visits were made to the cowsheds and dairies for the purpose of inspecting the buildings, and the conditions as to cleanliness, etc.

Bovine Tuberculosis.

Dairy herds within the City have been examined from time to time, although not with regularity, owing to the large number of outbreaks of foot and mouth disease within the District, including the City. Indeed,

during several months many of the registered cowsheds were not only empty, but were kept under strict isolation restrictions following upon the slaughtering out process of the Ministry of Agriculture. Towards the Autumn, however, most of the dairy herds were brought up to their usual strength, numerically.

TABLE No. 1.

DISEASED COWS FOUND IN REGISTERED PREMISES WITHIN THE CITY.

Year.	No. of Cow-keepers.	No. of Registered Cowsheds.	No. of Dairy Premises.	No. of Milch Cows in City.	No. of Diseased Cows.				
					Tuberculosis		Other Diseases		Destroyed.
					Of Udder.	Other than Udder.	Udder.	Other than Udder.	
1909	41	..	..	527	5	2	4	1	5
1910	38	41	..	503	1	1	8	..	1
1911	37	44	38	497	1	..	4	..	1
1912	37	44	37	465	2	..	1	..	..
1913	31	43	33	489	2	2	..	..	..
1914	31	43	32	510	1	1	1	..	..
1915	31	43	33	554	3	..	6	..	..
1916	30	44	32	536	2	2	12	..	1
1917	30	44	32	512	1	..	..	..	..
1918	29	43	31	622	..	..	..	..	..
1919	27	41	29	594	..	..	..	..	..
1920	26	40	28	565	.	..	..	..	..
1921	25	38	26	575		..	..	..	..
1922	25	39	26	489	..	..	..	..	..
1923	25	39	26	484	2	..	8	..	1
1924	22	34	23	436	3	2	2	..	4

Rabies.

During the year under report, three cases of suspected Rabies within the City, as affecting the dog, were reported. The animals, upon examination by the Veterinary Officer, were found not to be suffering from the disease.

Since the year 1922, only one case of Rabies has occurred in Great Britain.

TABLE No. 2.

DISEASED AND DEAD ANIMALS FOUND AND HOW DISPOSED OF.

	How found.	Oxen.	Calves.	Sheep.	Swine.
Sent from Lairs to Official Destructor	Dead	—	—	2	2
Sent from London & North Eastern Railway Docks to Official Destructor	do.	1	2	19	53
Sent from Piggeries to Knacker's Yard	do.	—	—	—	7
Sent from Field to Knacker's Yard.	do.	1	—	—	—
Sent from Slaughter-house to Official Destructor	do.	1	—	—	—

Live Stock and Meat Supplies.

TABLE No. 3.

NUMBER OF ANIMALS EXHIBITED WITHIN THE NEWCASTLE CATTLE MARKET.

Year.	Cattle.	Calves.	Sheep.	Swine.	Cows.
1887	110,074	8,780	325,473	28,964	—
1897	99,084	7 804	340,382	31,798	—
1908	87,447	8,145	302,608	38,466	—
1909	85,110	6,950	323,780	31,189	—
1910	77,317	6,469	306,703	27,089	—
1911	70,337	5,841	305,418	37,754	—
*1912	48,222	4,646	227,046	32,562	—
1913	63,683	4,455	271,867	27,468	—
1914	55,617	4,376	258,976	26,507	—
1915	53,689	3,677	248 291	25,062	—
1916	52,251	980	248,356	23,796	—
1917	47,906	1,192	216,920	15,474	—
1918	32,948	42	201,071	148	—
1919	33,664	329	145,613	89	—
1920	32,577	2,064	129,606	5,923	—
1921	35,000	1,765	210,000	1,154	—
*1922	21,921	1,432	140,389	16,521	278
*1923	28,828	1,665	138,447	5,545	99
*1924	18,555	458	68,654	15,694	—

* Market closed for some time during each of these years owing to extensive outbreaks of Foot-and-Mouth Disease in the district.

Animals Slaughtered for Food.

During the year 1924, 148,918 animals were slaughtered within the City, as compared with 123,283 slaughtered the year previous.

TABLE No. 4.

ANIMALS SLAUGHTERED ON LICENSED PREMISES WITHIN THE CITY.

YEAR 1924.			1923.	1922.	1921.	1920.
Horses		2,710	1,487	888	1,131	456
Cows	912					
Heifers	12,990					
Bulls	321	19,788	16,941	16,284	15,740	19,977
Bullocks	5,565					
Calves		4,348	3,945	2,847	3,221	2,347
Sheep		70,788	69,190	88,902	91,951	61,024
Pigs		51,284	31,720	30,281	17,819	17,540
Total Animals		148,918	123,283	139,202	129,862	101,344

TABLE No. 5.

Cattle, Calves and Pigs Slaughtered within the City. (See also Table No. 8.)	Number of Animals found Diseased, Unsound or otherwise unfit for Human Consumption.		*Number of Animals found Tuberculous.	
	Whole Carcasses Condemned.	Parts or Organs Condemned.	Whole Carcasses Condemned.	Parts or Organs Condemned.
Year 1924.	Year 1924.			
Cows 912	33	124	31	120
Heifers 12,990	18	47	18	47
Bulls 321	1	3	1	3
Bullocks 5,565	14	39	11	34
Totals 19,788	66	213	61	204
Calves 4,348	10	..	2	..
Pigs 51,284	84	256	21	116

* The figures representing the numbers of animals found tuberculous on slaughter do not necessarily indicate the total number of animals affected with disease, because under the present slaughter-house system it is impossible to guarantee that all those slaughtered are subjected to inspection.

The Inspection of Meat and Other Foods.

During the year 1924, a total of 245¾ animal carcasses, together with 2 tons 10 cwts. 1 qr. ½ lb. of meat (excluding offal, etc.) were condemned within the City and destroyed as being unfit for human consumption, as compared with 312¼ animal carcasses and 10 tons 17 cwts. 3 qrs. 2 lbs. of meat condemned and destroyed the year previous.

Of the 245¾ carcasses, 90¾ (84 carcasses and 27 quarters) were condemned on account of tuberculosis, as compared with 77½ (76 carcasses and 6 quarters) the previous year.

TABLE NO. 6.

CARCASSES OF BEEF CONDEMNED WITHIN THE CITY DURING THE PAST FIFTEEN YEARS.

Total Condemned.		Numbers condemned on account of Tuberculosis.	Percentage Tuberculous.
Year.	Carcasses.	Carcasses.	Per Cent.
1910	116	110	94·82
1911	88	79	89·77
1912	79	73	92·40
1913	92	89	96·73
1914	83	70	84·43
1915	96	88	91·66
1916	109	103	94·49
1917	98	92	93·87
1918	230	182	79·13
1919	306	267	73·0
1920	198	171	86·36
1921	90	78	86·66
1922	85	79	92·94
1923	69	58	84·05
1924	66	61	93·95

NOTE.—The above refers to whole carcasses and quarters, but does not indicate the total animals found tuberculous, and therefore does not include those carcasses in which only the organs or parts were found diseased and condemned. See Table 5.

TABLE No. 7.

NUMBER OF VISITS AND INSPECTIONS OF PREMISES DURING THE YEAR 1924.

Slaughter Houses.	Central Markets.			Meat Shops.		Fish Shops.		Provision Shops.		Fruit Shops.		Quayside.		Cold Stores.	Goods Stations (Fish Docks).	Food Preparing Factories.
	Meat and Provisions.	Fruit and Vegetables.	Fish Shops.	Wholesale.	Retail.	Wholesale.	Retail.	Wholesale.	Retail.	Wholesale.	Retail.	Wharves and Vessels.	Fish Market.			
16,189	526	381	355	2,809	416	90	7	56	18	37	5	266	1	2	3	3

Imported Foodstuffs.

During the year 1924, 184 vessels carrying foodstuffs from Denmark, Holland, Norway, America, Canada and Australia arrived at the Quayside, as compared with 182 vessels during the year 1923. 266 visits were made to the wharves and vessels alongside, 574 packages containing meat, etc., being opened and examined. Regarding these visits, 5 were in response to official notices received from the Customs House concerning foodstuffs detained for inspection and certification.

Imported meat arriving within the City by rail is subjected to inspection and supervision within the wholesale shops and cold storage depôts.

Foreign Meat, etc., arriving by Vessel.

Fresh Meat (Carcasses, etc.)

657 Pork, 260 Mutton and Lamb, 754 Veal, 25 casks Pork, 310 casks of Beef and 126 sides Beef.

Offal (casks).

Pigs—5,480 Feet, 1,335 Maws, 873 Tongues, 1,566 Heads, 2 Plucks, 7 Kidneys and 36 Casings.

Calves.—13 Plucks.

Sheep.—1 Head and 4 Plucks.

Frozen Meat (carcasses, etc.)

45,206 Mutton and Lamb, 29 Pork and 71,585 quarters Beef.

Beef.—(packages) 4,839 Cuts, 200 Legs and Rumps and 518 Shin.

Mutton.—(packages) 2 legs, 10 Loins, 20 shoulders and 250 sides of Lamb.

Offal (packages).

Beef.—729 Hearts, 373 Tails, 892 Skirts, 166 Callops, 1,428 Livers, 1,847 Kidneys, 3,280 Tripe, 882 Tongues and 288 Heads.

Sheep.—763 Hearts, 291 Kidneys and 116 Sweetbreads.

Salted Meat.

60 barrels Pork.

Other Goods (cases, etc.)

90,032 American Bacon and Hams, 609,214 Sides Danish Bacon, 24,469 Tinned Meat, 59 Sausages and 371 Cod Roes and Fish.

Table No. 8.

Number of Vessels and Origin, Arriving with Food.

Denmark.	Holland.	Norway.	America.	Canada.	Australia.
96	32	2	10	28	16

Total Weight of Meat and other Foodstuffs Condemned.

The approximate total weight of meat and other foodstuffs condemned during the year was 37 tons 11 cwts. 3 qrs., 1 st. 2 lbs., comprising :—

	tons.	cwts.	qrs.	sts.	lbs.
Beef, Mutton, Veal, Pork	28	5	—	—	2
Offal, Provisions, etc. .	9	6	3	1	—
	37	11	3	1	2

Table No. 9.

Carcasses, etc., Destroyed as being Unfit for Human Consumption during the Year 1924.

	Carcasses, etc.						Lungs				Hearts			Kidneys		Livers			Tails	Heads			Plucks			Tongues			Ox Tripe	Ox Cheeks	Cow's Udders	Pig Intestines.	Sheep Sweetbreads
	Beef	Veal	Mutton	Pork	Venison	Horse	Sets Ox	Sets Sheep	Sets Pig	Sets Horse	Ox	Sheep	Pig	Ox	Pig	Ox	Sheep	Pig	Ox	Ox	Sheep	Pig	Calves	Sheep	Pig	Ox	Calves	Pig					
Tuberculosis	61 + 23 qrs.	2	..	21+2 sides	..	..	169	..	15	..	32	..	3	30	..	71	..	1	..	53	..	67+8 halves	..	..	37	27	..	..	..	..	..	..	..
Swine Erysipelas.	..	..	..	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Catarrh	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Fatty Degeneration	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Necrosis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cirrhosis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	13	1	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pneumonia	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Peritonitis	..	..	..	2 qrs	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pleurisy and Peritonitis	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pericarditis.....	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Enteritis	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mastitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Pyrexia	1	..	..	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Septic Conditions	2	..	5+3 qrs	..	..	..	3	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..
Oedema and Emaciation....	..	..	16	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Abscesses	1 qr. + 33 lbs.	2	1 + 1 qr.	..	..	..	4	1	..	..	1	..	..	2	..	19	..	2	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Parasitic	..	..	..	..	..	..	4	..	2	1	..	..	..	..	..	2	3	28	..	..	..	..	..	..	9	..	..	..	..	..	..	..	..
Traumatism	136 lbs.	..	1 qr.	..	..	2 qrs	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Congestion and imperfectly bled	7 qrs.	1	17	19	..	..	..	..	1	..	..	..	..	..	1	..	..	1	..	..	..	1	..	1	7	..	..	1	..	..	..	..	..
Unmarketable ...	..	..	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Decomposition ..	1+5,212 lbs.	5+2 sides + 2 qrs.	34 + 247 lbs.	19+ 11 qrs. + ½ lb.	2+1 side.	..	29	..	..	..	18	114	..	75 + 43 lbs.	58 lbs.	50+ 83 lbs.	..	4 + 44 lbs.	57	6	55	8 cwts.	1	81	28	3	98 lbs.	..	196 lbs.	42 lbs.	..	35 sets.	820 lbs.

Note.—The heads of three carcasses of Pork from Rotterdam, and one quarter of Chilled Beef from Argentine, are included in the above Table under the heading "Tuberculosis."

Table No. 10.

Poultry, Game, Fish, Fruit and Provisions, etc., Destroyed as being unfit for Human Consumption During the Year 1924.

Cause of unfitness.	Poultry and Game.	Fish.	Fruit and Vegetables.	Provisions.
Unsound or Unwholesome.	10 Chickens. 2 Grouse. 5 Geese. 63 Guinea Fowls 16 Fowls. 42 Rabbits. 11 Turkeys.	lbs. Cases. 172 14 Codfish. 1 Coalfish. 96 Fish (mixed). 8 Grilse. 330 Haddocks. 252 25½ Herrings. 264 Halibut. 17 Lobsters. 56 Ling 400 4 Plaice. 332 Roes. 112 Salmon. 42 Trout. Shell. 5 cwts. Mussels. 5 cases Prawns. 5 bushels Whelks.	1 barrel Apple Pulp. 1 barrel and 5 sieves Apples. 12 Cucumbers. 8 Hampers Cauliflowers 40 Chips Bilberries. 16 Chips Black Currants 12½ lbs. Figs. 601 barrels Pears. 23 barrels, 14 chips, 130 sieves, and 62 cwts. Plums. 10 chips Raspberries. 2 chips Strawberries. 2 deeps Tomatoes.	126 lbs. Bacon. 560 lbs. Rice. 280 Eggs. Tinned Goods. Lbs. Tins. Apples 576 Apricots 4 Crab 1200 Fruit 2674 (mixed) Milk 465 Pine Apples 204 Pork 2 Meat 2207 Tomatoes 600 Lunch 832 Tongue

Legal Proceedings.

Wholesale Fruiterer :—Fined £6 for having sold six barrels of unsound pears, and exposed for sale fourteen barrels of pears also unsound.

Retail Fruiterer :—Fined £5 for exposing for sale unsound figs.

Slaughter Houses.

During the year under report there were 101 separate premises, including two knackers' yards, licensed for slaughtering purposes within the City. Within seven of these no other animals than horses are slaughtered, the carcasses being exported for human consumption on the Continent. The total number of slaughter-houses is made up of five groups, together with ten separate establishments situated in various parts of the City. It is scarcely necessary to add that the whole of the slaughter-house arrangements within the City from the points of view of meat inspection, sanitation, and the prevention of contagious animal diseases cannot be considered satisfactory. It should be noted, however, that the provision of modern slaughtering accommodation in conjunction with new markets and lairages is at present under consideration.

I have the honour to be, Sir,

Your obedient Servant,

THOMAS PARKER, F.R.C.V.S.,

Veterinary Inspector and
Inspector of Meat, Provisions, etc.

Town Hall,
Newcastle upon Tyne,
14th May, 1925.

FOOD AND DRUGS ADULTERATION, Etc.

Total Samples.—The number of samples of all kinds obtained for analysis during the year was 1,258 (against 1,147 in 1923). For details see table on page 200A.

Of this total, only 708 were submitted for analysis to the Public Analyst, the remainder being milk samples which, on being tested in the Health Department, appeared to be genuine.

Informal Samples (included in the foregoing total). 247 samples were obtained. By this means the character of goods sold in any particular locality is fairly well ascertained at a small cost, and with a minimum of time. In case of any contravention further samples are obtained in accordance with the Sale of Food and Drugs Acts.

Milk Samples.—Milk again takes premier position, the number of samples being 1,010. 72 of these were certified to be below the minimal limits fixed by the "Sale of Milk Regulations, 1901."

Samples not Genuine, etc.—The percentage of all samples not genuine to the total number taken was 7·23 (compared with 4·53 for the previous year), and the percentage of non-genuine milk samples to the total number of milk samples obtained was 7·13 (as against 5·59 in 1923). The total number of samples taken was at the rate of 4·40 per 1,000 of the population (estimated) of the City for the year 1924. This is in excess of the number suggested by the Ministry of Agriculture (viz., 3 per 1,000 of the population).

Milk Adulteration.—Of the 72 milk samples not genuine, 53 were deficient in non-fatty solids, 15 in milk fat, and 4 in both.

The percentage of fat deficiency varied from 6·6 to 70·0 (the average being 20·58), and of solids not fat from 0·6 to 13·1 (average 5·05).

"*Appeal to Cow*" *Samples.*—27 of the samples were taken at farm or byre after seeing the cows milked; 19 of these proved to be genuine and 8 deficient.

It is felt that these "appeal to cow" cases will ultimately be productive of much good in securing a clean and genuine supply of milk to the City. During the visits to the farms, advice is given as to the best methods of dealing with the milk, such as personal cleanliness of the milkers, "stripping" of the cows, placing the entire yield of the herd in one vessel, thoroughly "plunging" or mixing it, and then filling the churns for despatch.

Margarine Act, 1887.—32 samples of margarine (included in the foregoing total of 1,258) were purchased and analysed. All contained boric acid (as below).

Margarine Warehouses.—67 visits were made to margarine warehouses. Some thousands of packages were examined as regards the proper marking, and all found to comply with the Act.

Preservatives in Food.—Of the total number of samples taken for analysis (1,258) all of the margarines (32) contained boric acid (in each case below 0·5 per cent.). 4 samples of British wines contained salicylic acid in amounts varying from 0·53 to 1·14 grains per pint; no action was taken, the presence of this preservative being declared on the label.

ACTION TAKEN WITH RESPECT TO OFFENCES OTHER THAN ADULTERATION.

Offence.	No of Cases.	Proceedings taken, etc.
Sale of Food and Drugs Act, 1899, *Sec.* 9 :— Selling milk from cans or vehicles not inscribed with the name and address of the vendors.	9	In 4 instances summoned, and fined 10s., the remaining 5 being met by a caution.
Margarine Act, 1887, Section 6:— Margarine delivered to purchaser in paper not marked "Margarine."	3	Vendors summoned, and fined 10s. in each case.
Dairies, Cowsheds, and Milkshops' Order, 1885, *Article* 6 :— Selling milk without being registered for the purpose.	1	Offender cautioned.
Total	13	Amount of penalties, £3 10s. 0d.*

* See also * on page 200A.

THE PUBLIC HEALTH (MILK AND CREAM) REGULATIONS, 1912 AND 1917.

Ministry of Health Table.

1.—Milk and Cream not sold as Preserved Cream.

	(*a*) Number of samples examined for the presence of a preservative.	(*b*) Number in which a preservative was reported to be present.
Milk	476	None.
Cream	— (No Samples.)	—

2.—Cream sold as Preserved Cream. No samples.

Samples taken for Analysis during the Year 1924.

Article	No. of Samples obtained.			Result of Analysis.			Action taken.				Remarks.
	Formal.	Informal.	Total.	Genuine.	Not Genuine.	Doubtful.	Prosecutions.	Convictions.	Cases Dismissed.	Cases Withdrawn.	
New Milk	988	22	1010	938	72	..	36	23	13	..	In 8 cases (all "appeal to cow" samples) no proceedings were taken, and in the remaining 28 (of the 72 samples not genuine) the vendors were cautioned by order of the Health Committee.
Skimmed Milk	1	..	1	1	..	..	..	..	..	..	
Dried Milk	..	4	4	4	..	..	..	..	..	..	
Condensed Milk	2	14	16	13	3	..	2	2	..	..	Of the 3 samples "not genuine" (deficient in fat 11·1, 15·5, and 16·7 per cent., respectively), one was taken informally and two formally, from one vendor, who was summoned in respect of the latter, and fined £3 in each case.
Butter	..	29	29	29	..	..	..	..	..	..	All the samples contained undeclared preservative (viz., boric acid—under 0·5 per cent.).
Margarine	3	29	32	..	..	32	..	..	..	..	
Coffee	..	1	1	1	..	..	..	..	..	..	
Cocoa	..	1	1	1	..	..	..	..	..	..	
Tea	..	1	1	1	..	..	..	..	..	..	
Sugar	..	2	2	2	..	..	..	..	..	..	
Flour	..	1	1	1	..	..	..	..	..	..	
Wholemeal	..	1	1	1	..	..	..	..	..	..	
Oatmeal	..	1	1	1	..	..	..	..	..	..	
Corn Flour	..	3	3	3	..	..	..	..	..	..	
"Custard"	3	5	8	..	8	..	5	..	..	3	Of these samples (which contained neither egg nor milk), 5 were obtained informally and 3 formally, from the same vendors. With regard to the latter, summonses were issued, and afterwards withdrawn, on the manufacturers undertaking to bring themselves within the provisions of the Food and Drugs Acts as to labelling.
Custard Powder	..	9	9	9	..	..	..	..	..	..	
Semolina	..	6	6	6	..	..	..	..	..	..	
Rice	..	1	1	1	..	..	..	..	..	..	
Ground Rice	..	10	10	10	..	..	..	..	..	..	
Self-raising Flour (including Cake and Pudding Powders, etc.)	..	7	7	7	..	..	..	..	..	..	
Blancmange Powder	..	2	2	2	..	..	..	..	..	..	
Baking Powder	..	9	9	9	..	..	..	..	..	..	
Ground Ginger	..	5	5	5	..	..	..	..	..	..	
Ground Almonds	..	6	6	6	..	..	..	..	..	..	
Pepper	..	11	11	11	..	..	..	..	..	..	
Mustard	1	5	6	4	2	..	1	1	..	..	Of the 2 samples "not genuine" (both containing wheat flour or starch) one was taken informally, and the other formally, from one vendor, who was summoned and fined 10s.
Vinegar	..	1	1	1	..	..	..	..	..	..	
Egg "Substitute"	..	2	2	2	..	..	..	..	..	..	
Dried Eggs	..	1	1	1	..	..	..	..	..	..	
Jams and Jellies	2	8	10	9	..	1	..	..	..	..	The "doubtful" sample (of Strawberry Jam) contained 1·14 grains of tin per lb. The manufacturers were communicated with by the Medical Officer of Health.
Marmalade	..	1	1	1	..	..	..	..	..	..	
Golden Syrup	..	1	1	1	..	..	..	..	..	..	
Tinned (or Bottled) Peas	2	1	3	3	..	..	..	..	..	..	All contained small quantities of copper compounds ("declared" by label).
Chocolate	..	5	5	5	..	..	..	..	..	..	This "chocolate" was of the cheap variety, and whilst it was of poor quality, the samples contained no deleterious constituents, and were not unwholesome.
Cream of Tartar	..	6	6	6	..	..	..	..	..	..	
Tartaric Acid	..	5	5	5	..	..	..	..	..	..	
Tincture of Rhubarb	..	3	3	3	..	..	..	..	..	..	
Syrup of Rhubarb	..	3	3	3	..	..	..	..	..	..	
Gregory Powder	..	5	5	5	..	..	..	..	..	..	
Paregoric	..	3	3	2	1	..	..	..	..	..	In the case of the sample "not genuine" (which was taken informally, and consisted entirely of tincture of nux vomica) the article was supplied in error. The matter was taken up with the firm concerned by the Medical Officer of Health.
Sweet Spirits of Nitre	1	6	7	5	2	..	1	1	..	..	Of the 2 samples "not genuine" (which were deficient in ethyl nitrite, 44 per cent. and 29 per cent. respectively), one was taken informally and the other formally, from the same vendor, who was summoned and fined 10s.
Glycerine	..	3	3	3	..	..	..	..	..	..	
Olive Oil	..	2	2	2	..	..	..	..	..	..	
Camphorated Oil	..	4	4	4	..	..	..	..	..	..	
British (Fruit) Wines	3	2	5	4	1	..	1	..	1	..	In the case of the sample "not genuine" (which was one of "Blackcurrant" Wine, containing no black currant juice), the vendor was summoned. Case dismissed on proof of warranty from the wholesalers, against whom proceedings were then taken and also dismissed. 4 of the samples contained salicylic acid ("declared") in quantities varying from 0·53 to 1·14 grains per pint.
Whiskey	3	..	3	2	1	..	1	1	..	..	In the case of the sample "not genuine" (which was 46·7 degrees under proof), the vendor was summoned and fined £5.
Rum	1	..	1	..	1	..	1	1	..	..	The sample "not genuine" was 46·4 degrees under proof, and the vendor was summoned and fined £5.
Gin	1	..	1	1	..	..	..	..	..	..	
Totals	1,011	247	†1,258	1,134	91	33	46	29	14	3	Amount of Penalties obtained—£94 *

† Includes 91 samples taken "in course of delivery" (at railway stations, etc.)

In addition, 1 sample (taken for informative purposes only, and not under the Food and Drugs Acts), was submitted to the Public Analyst for examination.

* Total penalties, including those in respect of "offences other than Adulteration," etc. (£3 10s. 0d., see separate table, page 200), £97 10s. 0d.

THE PUBLIC HEALTH (CONDENSED MILK) REGULATIONS, 1923.

16 samples of condensed milk were obtained, of which 13 were genuine and in compliance with the Regulations with regard to labelling, the remaining 3 being deficient in fat to the extent of 11·1, 15·5, and 16·7 per cent. respectively.

The first was taken informally, and the other two formally, from the same vendor, who was summoned and fined £3 in each case.

BACTERIAL IMPURITY OF MILK AND WATER.

Milk.—220 samples were examined by the Bacteriologist for the presence of tubercle bacilli, which were found in 7, or 3·2 per cent.

Action taken is described on page 185.

191 samples were examined for evidence of excremental pollution, which was found to an undesirable degree in 107, or 56 per cent. The vendors and producers were communicated with and warned.

Cleanliness of Milk Churns.—In order to secure as far as possible a thoroughly clean milk supply for the City, 25,015 empty milk churns, awaiting return to the farmers, were examined at the various railway stations in the City, and of this great number only 54 (from 21 different dealers) were found in an uncleansed condition. In each case the offender was warned by the Medical Officer of Health.

It will be seen that this work, which practically occupies two Inspectors one day per week each, is fully justified, for although 5,340 more churns have been examined this year, only 54, as against 95 last year, were found uncleansed.

Water.—189 samples were collected from all parts of the City and at the water works, and examined for the presence of *bacillus coli.*

The results are described on page 126.

PREMISES ON WHICH FOOD IS PREPARED.

Bakehouses.—There are in the City 216 bakehouses, of which 28 are factories and 188 are workshops.

These are kept under rigid and systematic supervision, and are generally found in good order. The number of contraventions is small, and these are usually dealt with by the Inspector at the time, or by informal notice or letter.

The number of " domestic " bakehouses, or private dwelling houses in which the occupier makes bread for sale amongst the neighbours, has decreased from 98 last year to 79 in 1924.

This is most desirable, as under the most favourable conditions, such a food as bread cannot be safely prepared for sale in a small dwelling house. Domestic bakehouses are under the same supervision as when the business is carried on in an ordinary bakehouse.

Restaurant Kitchens (which include hotels, cafés and dining rooms) number 140. These are also regularly inspected, any insanitary conditions (which as a rule are few) being dealt with as in the case of bakehouses above mentioned.

Fried Fish Shops.—The number of these decreased from 147 to 145 during the year. For comments see "Offensive Trades" (page 215).

Ice Cream Manufactories and Retail Shops.—During the year 158 applications were received for permission to make and/or sell ice cream, which was refused in 72 cases, in many on account of the fact that the cream was to be made in or sold from dwelling houses. In others, general insanitary conditions, lack of water supply, drainage, facilities for cleansing, and the storage for sale of vegetables and other goods of a dusty or dirty nature, led to the applications being declined. In many cases where permission was refused it was regarded as a hardship, but a commodity like ice cream is so susceptible to contamination that a high standard must be fixed and rigidly adhered to.

The premises of both manufacturers and dealers are regularly inspected, and it is worthy of note that only a few contraventions of a minor nature have been found.

The number of manufacturers on the register is 134, and of those who sell but do not make, 132.

Dairies, Cowsheds, and Milk Shops' Order, 1885; *Article* 6, *and the Milk and Dairies (Amendment) Act,* 1922; *s.* 2.—During the year 75 applications were received for permission to retail milk, 47 being granted, and 28 refused on sanitary grounds. At the close of the year there were 615 retail milk-shops in the City, including 32 belonging to 9 larger dairy companies. Of the total, 99 were shops in which only dairy products and like commodities were retailed, 279 were shops selling other articles, and 37 were hawkers, whilst the remaining 200 sell a sterilised milk in stoppered bottles.

A considerable number of applications for registration as milk purveyors were received from occupiers of dwelling-houses. In all cases these were refused, as it is felt that such an important food stuff cannot with safety to the consumer be kept under such conditions.

The Milk Shops Register is at present under revision, with a view to further eliminating any undesirable conditions and also raising the standard of the milkshops.

C. RAIMES,
Inspector under the Sale of Food and Drug Acts, etc.

Health Department,
Town Hall,
30*th June*, 1925.

REPORT OF THE
SENIOR SANITARY INSPECTOR.

VI.—THE HOME AND THE WORKSHOP.

NUISANCES, HOUSING, FACTORIES AND
WORKSHOPS, Etc.

NUISANCES, HOUSING, FACTORIES AND WORKSHOPS, ETC.

The following is the

Report of the Senior Sanitary Inspector.

To the Medical Officer of Health.

Sir,

I have the honour to submit the following report on the work carried out in my section of the Health Department during the year ended December 31st, 1924.

NUISANCES.

The nuisances reported upon and dealt with during the year numbered 9,657, and have, as in the past, been of a most varied nature. There is a slight increase (690, as compared with 633 last year) in the number of choked drains and W.C.'s., and this may be partly accounted for by the amount of overcrowding in the poorer districts. Houses that have been built for one family are now very often occupied by three, with a corresponding increase in the number of children and lack of parental control.

The following are the numbers of notices and letters issued during the year :—

Total number of notices served :—		
Informal	6,557	
Statutory	345	
		6,902
Number of letters sent		2,805
Number of circular letters sent		1,380
Total		11,087

Overcrowding.

The epidemic of overcrowding which has now been with us for some years shows little, if any, sign of abating, although every endeavour is made to cope with it. As in the past, quite a considerable time has been occupied by the District Inspectors in interviewing house agents and owners, with a view of obtaining better accommodation in the most deserving cases, and it is gratifying to note that this is fully appreciated by those who have been successful in obtaining larger houses. It is not the policy of this Department to serve a notice to "cease the overcrowding," and leave the person to work out his or her own salvation, but every endeavour is made to help them.

It is not proposed to add any startling instances of overcrowding to those given in last year's report, for such cases cannot be said to reflect much credit upon the City in which they occur.

Increase of Rent and Mortgage Interest (Restrictions) Acts, 1920 and 1923.

During the year 11 applications were received from tenants for certificates that their houses were not "in all respects reasonably fit for human habitation," or otherwise not in a reasonable state of repair. This is an increase of 9 over the previous year. In 8 cases the certificate was granted, whilst in the remaining 3 the conditions did not warrant the issue of the certificate. In two of the 3 cases it was only when trouble had arisen between the owner and the occupier that the latter discovered or thought that the house was not in a reasonable state of repair.

Magisterial Proceedings.—Considering the total number of letters sent out and notices served (11,087) it is worthy of note that it was only necessary in eighteen cases (four owners) to take legal proceedings. In each instance the work was subsequently done, and the summons withdrawn. In other 81 cases in which proceedings were ordered by the Health Committee, the necessary work was carried out without the issue of summonses. This reflects much credit upon the staff, who at all times, even after proceedings are ordered, are ready with advice and assistance in having the work carried out. For details see page 218.

Conversion of Dry Closets.

It is satisfactory to note that a greater number of pail-closets and cell privies have been converted to water closets than during any previous year since 1914. When it is realised that in the great majority of cases the conversions have been carried out in flats, and the smaller classes of houses, the owners of which very

frequently occupy them or depend on the rents for their livelihood, the occupiers in many cases being in arrears with their rent, it will be seen that extreme tact and discretion are required. Any cases of hardship, however, receive every consideration by the Health Committee and its officials. On the other hand, it must not be forgotten that such conversions considerably enhance the value of the property, in addition to contributing to the general well-being of the occupiers.

In 46 cases legal proceedings were ordered, but in all of these, with the exception of 3, the work was ultimately done before the summonses were issued.

During the year 464 privies were removed and water-closets provided instead. Of this number 273 were pail-closets, 4 privy ashpits and 187 " cell " privies, a type of sanitary convenience common to the districts of Benwell and Walker, and an undesirable legacy received when these districts were incorporated with the City.

In addition, 82 " dry " ashpits were removed and the regulation galvanised iron dust-bin provided instead.

In connection with these removals, 587 dust-bins were supplied by the Corporation free of charge.

RETURN OF "DRY" CLOSETS IN THE VARIOUS WARDS OF THE CITY

WARDS.	Total No. Privies.	Pail Closets.	Cell Privies.	Privies and Ashpits.	
				Privies.	Ashpits.
St. Nicholas'	7	7	..	..	..
St. Thomas'	24	24	..	..	..
St. John's	27	27	..	..	..
Stephenson	7	7	..	..	..
Armstrong	..	..	..	..	..
Elswick	66	66	..	..	..
Westgate	3	3	..	..	..
Arthur's Hill	..	..	..	..	..
Benwell	33	..	31	2	1
Fenham	51	11	11	29	20
All Saints'	119	119	..	..	..
St. Andrew's	35	35	..	..	..
Jesmond	5	..	..	5	5
Dene	1	..	..	1	1
Heaton	32	25	..	7	7
Byker	738	738	..	..	..
St. Lawrence	1401	1399	..	2	2
St. Anthony's	546	529	..	17	16
Walker	751	..	703	48	32
Total in City	3,846	2,990	745	111	84

Atmospheric Pollution.

Great attention has been given during the year to this important part of the work of the Department. The nuisance and injury to health which is caused by dense volumes of black smoke being poured into the atmosphere cannot be overestimated. But unfortunately the law is weak upon the subject. The question is occupying the attention of both Parliament and Local Authorities. The recent report of the Fuel Research Board makes both interesting and useful reading. To take one case alone: their experiments have proved that by low temperature carbonisation one ton of coal will yield 14 or 15 cwts. of smokeless solid fuel, the general use of which would secure a clean and pure atmosphere, would do much to abolish fogs, and conduce in no small degree to the health and well-being of the nation.

In addition to this, other bye-products from the ton would give about 13 gallons of fuel oil, 2½ gallons of motor spirit, and from 3,000 to 4,000 cubic feet of domestic and commercial gas. If such is the case then, even from an economical point of view, the method should be universally adopted.

The following table gives details as to smoke inspection :—

No. of chimneys watched.	No. of observations made.	No. of chimneys from which black smoke issued in such quantity as to be a nuisance for periods of over 5 minutes in the aggregate during one hour.	No. of times when smoke issued so as to be a nuisance.	No. of notices served for the abatement of smoke nuisances.		No. of Prosecutions.
				Informal.	Statutory	
110	518	7	13	12	1	..

Atmospheric Pollution Records.—An observation station, under the immediate control of the City Analyst, is placed on an open site in Keelman's Hospital, City Road, in connection with similar stations in other towns, the monthly results from all of which are compared and published by the Advisory Committee for the Investigation of Atmospheric Pollution.

The monthly readings from the Newcastle station are appended :—

ATMOSPHERIC POLLUTION.—NEWCASTLE RECORDS, 1924.

MONTH.	RAINFALL. (Millimetres.)	METRIC TONS OF DEPOSIT PER SQUARE KILOMETRE PER MONTH.								
		Insoluble Matter.			Soluble Matter.		TOTAL SOLIDS.	Included in Soluble Matter.		
		Tar.	Other Carbonaceous.	Ash.	Loss on Ignition.	Ash.		Sulphate as SO3	Chlorine as Cl.	Ammonia as NH3
January	46·7	0·79	4·58	6·39	1·68	3·74	17·18	1·91	0·43	0·08
February	27·3	0·67	10·22	14·39	1·69	3·22	30·19	1·50	0·26	0·05
March	23·4	0·18	4·24	5·65	1·03	1·77	12·87	0·98	0·22	0·04
April	No report									
May	133·7	0·47	8·17	9·33	4·01	4·81	26·79	2·20	1·04	0·28
June	70·1	0·39	8·40	13·73	2·24	3·22	27·98	1·64	0·60	0·09
July	123·3	0·39	11·35	13·94	5·18	9·36	40·22	2·79	1·84	0·28
August	74·7	0·24	6·61	9·94	2·09	3·14	22·02	1·49	0·72	0·17
September	66·2	0·15	5·00	6·68	2·25	2·91	16·99	1·50	0·66	0·12
October	80·5	0·55	7·47	7·49	2·09	2·90	20·50	1·80	0·51	0·15
November.....	26·0	0·18	5·48	7·07	1·45	2·66	16·84	1·32	0·31	0·10
December	57·0	0·31	4·54	4·82	2·40	3·54	15·61	1·68	0·45	0·11
Total, 11 months	728·9	4·32	76·06	99·43	26·11	41·27	247·19	18·81	7·04	1·47
Average per month	66·3	0·39	6·91	9·04	2·37	3·75	22·47	1·71	0·64	0·13

An average of 22·47 metric tons of total solids per square kilometre per month is equivalent to 1 *ton* 1 *cwt. per acre per annum, or* 690 *tons per square mile.* This is the third highest deposit since the observations were commenced in 1914. The highest was in 1923, when the fall was equivalent to 832 *tons per square mile.*

For comparison with the foregoing, the following returns of sunshine recorded at the Armstrong College, and at Cockle Park, near Morpeth, are given :—

Month.	Armstrong College. Sunshine (hours).	Cockle Park. Sunshine (hours).
January	27·3	51·4
February	32·7	53·6
March	55·9	127·0
April	70·4	135·0
May	58·0	159·4
June	80·9	168·0
July	94·1	162·4
August	93·8	135·4
September	95·7	136·5
October	66·6	98·8
November	33·8	59·1
December	18·6	26·3
Total for year	727·85	1312·9
Average per month	60·65	109·4

CINEMAS, THEATRES, AND OTHER PLACES OF PUBLIC ENTERTAINMENT.

At the end of the year there were in the City 2 Theatres, 3 Music Halls, 27 Cinemas, and 71 miscellaneous places of public entertainment.

Seven applications for certificates of sanitary fitness (which are required by the Licensing Justices before a licence is granted or renewed) were received, all of which were granted.

All such places are regularly visited during the day, and very frequently at night while the entertainment is in progress.

On the instructions of the Medical Officer of Health it is intended during next year to make a systematic series of air tests in all these places, for it is fully realised that the public cannot only be satisfied with a good show or performance, but require also a pure atmosphere to breathe, so that they run no risk of

headache or the feeling of lassitude which is so often the result of a visit to a hall where the air is impure, or the ventilation inadequate.

OFFENSIVE TRADES.

Fried Fish Shops still constitute the largest number of offensive trades in the City. There is, however, a reduction of 2, the number now on the register being 145, as against 147 last year. They are all kept under inspection, visits being made at night while the business is in progress, as well as during the day.

Considering the number of these places there are remarkably few contraventions, and these are, as a rule, of a minor nature. It is felt, however, that if Bye-laws relating to them were in force in the City, it would conduce to the further raising of the standard. The occupiers would then have knowledge of the requirements of such Bye-laws.

Other Trades.—One bone boiler and one fat melter have been added, whilst one rag and bone dealer and two fish friers ceased business, and were removed from the Register.

The following offensive trades were carried on within the City :—

Specified in Section 112, Public Health Act, 1875 — Bone Boilers (5), Soap Boiler (1), Tripe Boilers (6).

Declared by Local Authority, confirmed by Local Government Board (in accordance with Section 51 Public Health Acts Amendment Act, 1907). — Rag and Bone Dealers (18), Dealers in Hides and Skins (4), Dealer in blood or other putrescible animal products (1), Fat Melters or Fat Extractors (4), Glue and Size Makers (2), Gut Scrapers (2), Fish Friers (145).

The total number of all Offensive Trades in the City is now 188.

UMMARY OF NUISANCES, ETC., FOR THE ABATEMENT OF WHICH NOTICES WERE SERVED DURING 1924.

Foul privies and ashpits (to replace with water-closets)	1
Defective " cell " privies in Walker and Benwell (to replace with water-closets)	188
Foul pail-closets (to replace with water-closets)	311
Defective waste water closets (to replace with fresh water closets with flushing cisterns, etc.)	7
Foul or defective ashpits not connected with privies (to remove and provide dust bins)	88
Insufficient water-closet or privy accommodation (additional water-closets ordered)	24
Defective or insufficient dust bins	1,289
Defective water-closets	767
Defective pail-closets (to repair, provide new pails, etc.)	185
Water-closets without water supply	72
Choked water-closets (mostly served on tenants)	85
Dirty water-closets (all served on tenants)	147
Dirty privies (all served on tenants)	17
Defective drains (to repair, or construct new drains)	252
Insufficient means of drainage	4
Choked drains, etc.	605
Defective or choked sinks, waste pipes, etc.	383
Defective or choked soil-pipes, vent shafts, etc.	33
Sink waste-pipes not trapped	62
Want of or defective pavement in yards and passages	305
Dirty rooms	75
Dirty bedding	9
Damp rooms	307
Overcrowding	35
Dirty yards, passages, stairs, etc.	325
Animals, pigeons, and fowls improperly kept	92
Offensive accumulations	131
Accumulations of manure	50
Want of or defective manure pits	11
Broken roofs and want of or defective or choked spouting	1,359
Want of water	298
Smoke nuisances	25
Want of proper ventilation to rooms (including to floor space), broken window cords in tenements, etc.	313
Structural defects in houses (broken plaster, floors, stairs, etc.)	1,577
Cisterns supplying water to sinks, etc., dirty or defective	10
Slop water or excreta thrown into privy pails, ash-tubs or dust bins	5
Filth thrown on yards, streets, etc.	11
Stables (defective and unsuitable)	5
Piggeries (defective and unsuitable)	3
Food manufactured or stored for sale under improper conditions	23
Ice creameries—Dirty condition (want of cleansing and other unsatisfactory conditions)	8
Bakehouses—Dirty, etc.	47
Bakehouses—Unsuitable, etc.	2
Council (and other) Schools—Choked gully	1
Foul ashpit	1
Defective gully trap	1
Cellar dwellings illegally occupied	2
Unsuitable huts occupied as dwellings	2
Fried fish shops—(Want of cleansing)	3
(Established without consent)	1
Tripery (limewashing required)	1
Milk shops (dirty, etc.)	4
Fish shops (insufficient receptacles for refuse, accumulation of refuse, etc.)	2
Public houses (urinals defective, dirty, etc.)	3
Quarry fencing defective	1
Defects in Cinemas—No dressing room accommodation for artists	1
Insufficient ventilation	1
Insufficient sanitary accommodation	1
Unclassified minor nuisances	86
TOTAL	9,657

DETAILS RELATING TO CERTAIN WORKS CARRIED OUT IN THE ABATEMENT OF NUISANCES AND TO INSPECTIONS MADE DURING 1924.

Length (in yards) of old drains removed	1,775
Length (in yards) of new drains constructed	3,155
New trapped gullies provided to drains	375
Combined privies and ash-pits removed — privies	4
Combined privies and ash-pits removed — ash-pits	4
"Cell" privies removed (in Walker and Benwell)	187
Pail-closets removed	273
Defective water-closets removed	60
Water-closets provided (in place of the foregoing privies and defective water-closets removed, also in 18 cases where the accommodation was previously insufficient)	512
Dry ash-pits removed and replaced by galvanised iron dust bins	82
Dust bins substituted for dry ash-pits where water-closets existed, and provided in cases where privies have been replaced by water-closets	‡587
No. of drains tested	1,048
No. of tests of above drains made by smoke and water	1,251
No. of inspections from complaints made at office (verbally or by letter)	1,910
No. of tenement inspections made	18,397
No. of contraventions of Tenement Bye-laws for which notices have been served to obtain remedy	§1,337
Inspections of houses made from complaints received outdoors or nuisances discovered in the districts, including a large number of minor nuisances, such as choked drains and dirty yards, the abatement of which was accomplished at the time of visit, and without legal notice	5,035
Inspections to learn if works ordered were in progress	12,935
Supervisions of work in progress	3,215
Common yards and courts in the worst localities specially visited on Friday afternoons and Saturday mornings to obtain weekly cleansing	23,878
Inspections after infectious disease	1,168
Inspections of milk shops and ice creameries (including retail shops)	1,038
,, bakehouses	†1,235
,, offensive trades	598
,, wholesale margarine warehouses	67
,, as to limewashing of tenements	2,868
,, of schools	135
,, under Housing, Town Planning, etc., Acts	704
Inspection of Cinemas, etc.	66
Miscellaneous Visits	1,644

‡ Dust bins supplied free by Corporation.

§ In addition to this number, the District Inspectors have daily had premises cleansed on verbal order.

† Including 886 inspections made under the Factory and Workshop Acts by the Assistant Inspectors of Workshops.

SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE THE MAGISTRATES FOR THE ABATEMENT OF NUISANCES, ETC., DURING THE YEAR 1924.

NATURE OF COMPLAINT.	No of Cases.	RESULT.	
		Work done and Nuisances abated without the Summonses being applied for.	OTHERWISE DISPOSED OF.
Public Health Acts :— Drains obstructed	2	2	
Roofs defective, and defective and/or choked spouting	20	14	In 6 cases summones issued, and afterwards withdrawn on work being done.
Ceiling plaster defective .	1	1	
Insufficient ventilation, broken sash-cords.	1	1	
Smells and fumes from solder and lead refining factory.	1	1	
Sink waste-pipe defective	1	1	
Basement floors defective	3	3	
Room in dirty condition .	1	1	
Accumulations of refuse .	5	1	In 4 cases summonses issued and afterwards withdrawn on work being done.
Public Health Act, 1875, *Sec.* 36, *and Newcastle-upon-Tyne Improvement Act*, 1892, *Sec.* 53 :—			
Houses without sufficient waterclosets ; (defective w.c.'s to be repaired, furnished with adequate water supply, etc.)	11	6	In 5 cases summonses issued and afterwards withdrawn on work being done.
Foul privies (pail-closets, " cell " privies, etc., to be replaced by waterclosets).	46	43	In 3 cases summonses issued and afterwards withdrawn on work being done.
Carried forward	92	74	18

SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE THE MAGISTRATES FOR THE ABATEMENT OF NUISANCES, ETC., DURING THE YEAR 1924.—*continued.*

NATURE OF COMPLAINT.	No. of Cases.	RESULT.	
		Work done and Nuisances abated without the Summonses being applied for.	OTHERWISE DISPOSED OF.
Brought forward	92	74	18
Newcastle-upon-Tyne Corporation Act, 1911, *Sec.* 55 :—			
Want of or defective dust-bins for house refuse.	4	4	
Tenemented House Bye-laws :—			
Insufficient w.c. accommodation ; (No. 12)	1	1	
Animals kept, causing filth and unwholesomeness ; (No. 28).	1	1	
Want of domestic water supply ; (No. 34).	1	1	
Total	99	81	18

HOUSING.

That the problem of finding houses is by no means less acute than in previous years is shown by the following return :—

CITY ENGINEER'S CENSUS OF UNOCCUPIED HOUSES.

Class of House.	Nov., 1912	Aug., 1914	Nov., 1918	Nov., 1922	Nov., 1923	Nov., 1924
Self-contained	306	137	29	93	99	103
Flats (each Flat counted as a separate dwelling).	903	75	..	35	26	22
House and Shop combined.....	68	29	2	9	4	8
Tenemented Houses	28	3	..	..	..	..
Total	1,305	244	31	137	129	133

Effect of Bad Housing.—Reference has already been made to the effect of bad housing and overcrowding upon the public health. It is of interest to summarise some of the points. Speaking generally, the Wards with the highest populations per acre have also the highest death rates. The converse does not always hold, as some Wards, such as Walker, may have small densely-packed areas scattered about among wide stretches of open space or farm land. The rates in these will be relatively high. But where the dwellings are evenly distributed and in good sanitary condition, and the population on area is low, the death rate is also low.

Thus the death rates from all causes are high in Byker Ward (16·4), All Saints' Ward (16·8), and low in St. Thomas' Ward (9·3), Benwell Ward (9·7), and Fenham Ward (9·8), which occupy respectively also opposite ends of the scale in regard to quality of housing, and density of population (see tables on pages 49 and 58).

Similarly infantile mortality generally follows the same rule, and the Wards with the highest wastage of child life are again among the most crowded ones. Thus Stephenson Ward had an infantile mortality rate of 123 deaths per 1,000 births, and Armstrong 121, as compared with rates of 49 and 51 in Arthur's Hill and Jesmond Wards respectively.

Over a period of seventeen years, the deaths per 1,000 births in one room, two room, and three room houses have been respectively 141, 120 and 101, and in the year under report were 130, 103 and 91.

In the case of tuberculosis one sees again the influence of congestion and bad houses in the fact that the highest mortalities for the year were in St. John's (2·51), Walker (1·98), Stephenson (1·85), while the lowest occurred in Dene (0·69) and St. Thomas' (0·87). The tuberculosis death rate for the whole City in 1924 was 1·47 per 1,000 population.

Again, about 34 per cent. of the population live in one and two room houses, yet over 40 per cent. of the deaths from consumption were among these.

Housing and Town Planning Acts.

The number of inspections under these Acts was 704; this shows a slight decrease upon the number for last year, and may be accounted for by the extra work and time occupied in the inspection of, and preparation of the reports for, the Pilgrim, Liverpool and Prudhoe Streets insanitary areas. Much good work, however, has been done in the face of difficulty in working Section 28 of the Housing and Town Planning Act, 1919. For it is generally accepted that if this section, which provides that if a notice served under it to keep the house in all respects reasonably fit for human habitation is not complied with, the Local Authority may do the work and recover the expenses. If this were compulsory instead of permissive, or if in case of non-compliance a penalty against the owner were provided for, the results would be much more satisfactory.

Housing.

MINISTRY OF HEALTH TABLE.

YEARS ENDED 31ST DECEMBER, 1923 & 1924.

	1923	1924
Number of new houses erected during the year :—		
(*a*) Total	511	279
(*b*) As part of a municipal housing scheme	263	11
1.—UNFIT DWELLING-HOUSES. Inspection :—		
(1) Total number of dwelling-houses inspected for housing defects (under Public Health or Housing Acts)	2761	3630
(2) Number of dwelling-houses which were inspected and recorded under the Housing (Inspection of District) Regulations, 1910	318	252
(3) Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation	30	10
(4) Number of dwelling-houses (exclusive of those referred to under the preceding sub-heading) found not to be in all respects reasonably fit for human habitation	1986	2417
2.—Remedy of Defects without service of Formal Notices:—		
Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their officers	147	242
3.—Action under Statutory Powers :—		
(*a*) *Proceedings under section* 28 *of the Housing, Town Planning, etc., Act,* 1919 :—		
(1) Number of dwelling-houses in respect of which notices were served requiring repairs	303	261
(2) Number of dwelling-houses which were rendered fit :—		
(*a*) By owners	303	237
(*b*) By Local Authority in default of Owners.	..	..
(3) Number of dwelling-houses in respect of which Closing Orders became operative in pursuance of declarations by owners of intention to close.	..	..
(*b*) *Proceedings under Public Health Acts :—*		
(1) Number of dwelling-houses in respect of which notices were served requiring defects to be remedied	1536	1914
(2) Number of dwelling-houses in which defects were remedied :—		
(*a*) By owners	1507	1890
(*b*) By Local Authority in default of owners	..	..
(*c*) *Proceedings under Sections* 17 *and* 18 *of the Housing, Town Planning, etc., Act,* 1909 :—		
(1) Number of representations made with a view to the making of Closing Orders	..	..
(2) Number of dwelling-houses in respect of which Closing Orders were made	..	..
(3) Number of dwelling-houses in respect of which Closing Orders were determined, the dwelling-houses having been rendered fit	..	..
(4) Number of dwelling-houses in respect of which Demolition Orders were made	..	..
(5) Number of dwelling-houses demolished in pursuance of Demolition Orders	..	..

Unhealthy Areas and Improvement Schemes.

In December the Ministry of Health held a local inquiry into a representation as to three slum areas in the City, which were long overdue for scheduling. These were Lower Pilgrim Street, Prudhoe Street, and the courts about Liverpool Street.

The Council Chamber was crowded with barristers, solicitors, house agents, and property owners, and opposition was vigorous.

The approval, almost *in toto*, by the Ministry of the original schemes put forward, was received in February and April, 1925.

Compensatory housing accommodation was proposed (by the Housing Committee) in Barrack Road (block dwellings of the Sutton type), and at Cowgate, bordering along the north-west extremity of the Town Moor (flats and self-contained houses).

Appended is a summary of the evidence tendered by the Medical Officer of Health, comprising statements that were absolutely sustained.

These clearances will open out considerably some of the oldest parts in the centre of the City, removing the present occupiers, and leaving the streets themselves for business premises.

PILGRIM STREET IMPROVEMENT SCHEME.

General Description of the Area.

For many years past lower Pilgrim Street has been one of the sanitary black spots upon the map of Newcastle, and as far back as the present Medical Officer of Health can remember its condemnation has been under discussion. Before the war it was

included amongst other areas to be scheduled at the earliest opportunity, the general shortage of houses and consequently of alternative accommodation alone preventing the necessary action being instituted long ago.

Lower Pilgrim Street is one of the most ancient and most dilapidated parts of Newcastle. It consists almost entirely of decrepit rookeries, once, centuries ago, the town houses of the northern aristocracy. It may be fairly compared in some respects with the Canongate of Edinburgh, with the difference that structurally the houses in the latter are much more substantial and sound, being massively built with stone, whereas Pilgrim Street is brick.

Lower Pilgrim Street has for long been the abode of those who through lack of means (*e.g.*, casual labour, misfortune, thriftlessness, or unsettled habits of employment), found it less difficult to obtain quarters in such slum property than elsewhere. Among the first mentioned class is included a considerable proportion of the population whose occupation lies upon the Quayside in the loading and unloading of ships, while the common lodging houses, surprisingly well kept and conducted, considering their structural condition and sanitary handicaps, shelter the more migratory classes.

The area contains 10 common lodging houses (with 344 beds) and 43 houses, comprising 151 separate holdings, of which only 4 are self-contained. There are three public houses with dwelling rooms above, and the total resident population is 851, which includes 386 in common lodging houses.

Recently there has been some clearance and demolition at 182, Pilgrim Street, 10, Painter Heugh, and 170 to 176, Pilgrim Street, which have been allowed for in the foregoing summary. 98 per cent. of the houses are condemnable on sanitary grounds, and are too rotten to repair.

Some of the Main Defects.

There is congestion of houses throughout the area, preventing sufficient light and circulation of air. There are no back streets, and yards are either entirely lacking, or small and enclosed. The individual holdings and rooms are crowded together and small, with bad access by narrow, dark, ill-ventilated staircases.

The houses themselves are old and dilapidated, with unrepairable, decayed roofs, mostly of pantiles.

There is lack of the ordinary conveniences of life—such as ovens, food stores, cupboards, and washhouses, while the sanitary accommodation is inconveniently and badly situated.

The individual holdings are overcrowded.

As mentioned above, some clearance has recently taken place in the angle of Low Bridge and Pilgrim Street, on account of the dangerous condition of the buildings.

While the property scheduled on the west side of Pilgrim Street consists mainly of dwelling houses, that on the east side is rather more interspersed with business property, and two public houses.

From All Saints' Church, whose curtilage provides the only open space in the neighbourhood, there is a dense huddle of dwelling houses and warehouses up to the railway. On the north side of the railway are long, narrow courts separating dwellings, for the most part great rambling and ramshackle common lodging houses.

Owing to the level of the land, there is an entire absence of back streets to the houses, many of which are built on the brink of a steep hillside.

The lofty railway viaduct is in itself obstructive, all the arches except that spanning Pilgrim Street being closed in and occupied as workshops.

Most of the warehouses are old, and some are unoccupied.

Class of Dwelling Houses.

As stated above, these consist almost exclusively of tenement holdings and common lodging houses. Single room tenements predominate, the majority being "houses let in lodgings." This means sub-let "furnished rooms" at 4s. 6d. to 10s. per week. All these last lack every amenity, the "furnishings" being generally a misnomer; many have no ovens, there is no convenience for storing food, and no washhouses, and many have not even cupboards. The ground floor rooms are, as a rule, let as small shops, the dwelling rooms being approached by narrow, dark, tortuous staircases.

Of the 151 dwellings, 52 are inhabited at the rate of more than two persons per room

Occupation of the Inhabitants.

An approximate estimate (obtained by direct enquiry) of the occupations of the dwellers in the scheduled area, is as follows :—

Skilled Artisans	6%
Unskilled Labourers.....	80%
Hawkers or Casuals	14%

Place of Employment.

In the locality	90%
At a distance.....	10%
Unemployed at the time of enquiry .	30%

Local occupation consists of Quayside labour and labour in the soap works, warehouses, etc., in the vicinity, while the skilled artisans are sawyers, coopers, etc., employed by local firms. Those who are employed at a distance are for the most part shipyard workers.

Health Statistics.

The outstanding features are a general death rate nearly three times as great as for the City as a whole, a tuberculosis death rate five or six times greater, a pneumonia rate higher both in incidence and fatality, and a diarrhœa death rate four times greater.

The mortality rates, etc., for the area comprised in the Scheme, as compared with the whole of the City, are as follows :—

Year 1923.

	Pilgrim Street.	*Whole City.*
General death rate per 1,000 population	35·5	12·9
Tuberculosis death rate	6·9	1·46
Tuberculosis attack rate	14·9	2·9
Tuberculosis attack rate (year 1922)..	6·9	2·75
Pneumonia attack rate	8·0	3·0
Pneumonia death rate	1·1	1·2
Diarrhœa death rate	1·1	0·36
Measles death rate	2·3	0·54
Dwellings per acre	74	8·5 (net)
Houses per acre	21	—
Persons per acre	409	40 (net)

PRUDHOE STREET IMPROVEMENT SCHEME.

General Description of the Area.

This is a compact residential area, situated right in the business portion of the City. It consists of a series of five court-yards surrounded by houses, forming one big island block, together with an adjoining court, with its contained dwellings, hemmed in all round by lofty business premises.

Practically all the houses concerned are tenements. There are 58 houses containing 183 dwellings, and a population of 656.

70 per cent. of the houses are condemnable on sanitary grounds (congestion, dilapidation, lack of adequate sanitary convenience, insufficient water supply, back to back structures, dampness, etc.). Those not so included comprise houses facing Prudhoe Street, which, while old and often in bad repair, are still not beyond redemption, although it would be a costly matter to modernise them.

Of the 183 dwellings (including six business premises) 88 are inhabited at the rate of more than two persons per room.

These houses include among them many curious features, such as extraordinary burrow-like approaches or tunnels to some of the courts, queer twisting, dark staircases to upper floors, small cottage houses, planted down in courts behind big tenements, wretched little inadequate dark backyards (where these exist at all), while in one court in particular (Smith's Court) are to be found holdings of two rooms, one of which is almost entirely without light or ventilation. There is no egress from these back yards except through the houses.

Condemnation has been long under consideration, owing to the constant trouble and difficulty experienced by the Health Department in enforcing the most elementary sanitary requirements, and the area is fairly describable as a warren of mean hovels.

Occupation of Inhabitants—Liverpool Street and Prudhoe Street Areas.

The occupations of the inhabitants (as ascertained by direct enquiry) are approximately as follows:—

Skilled Artisans	12%
Unskilled Labourers.....	68%
Hawkers or Casuals	20%

Of these, 60 per cent. are normally employed in the locality, 40 per cent. at a distance, and about one-third of them were unemployed at the time the enquiry was made. Those locally employed consist mainly of tramwaymen, plasterers, hawkers, carters and general labourers, while those working at a distance are miners, shipyard and factory workers, artisans and general labourers.

Health Statistics.

In 1923 the death rate was twice that for the City as a whole; the diarrhœa death rate was more than four times that for the City; pneumonia nearly four times, measles nearly six times, and tuberculosis more than three times that for the City.

The mortality rates, etc., for the area comprised in the scheme, as compared with the whole of the City, are as follows:—

Year 1923.

	Prudhoe Street.	*Whole City.*
General death rate per 1,000 population	25·9	12·9
Tuberculosis death rate	4·6	1·46
Tuberculosis attack rate	6·1	2·9
Tuberculosis attack rate (year 1922)	6·1	2·75
Pneumonia attack rate	*	3·0
Pneumonia death rate	4·5	1·2
Measles death rate	3·0	0·54
Diarrhœa death rate	1·5	0·36
Dwellings per acre	221	8·5 (net)
Houses per acre	70	—
Persons per acre	792	40 (net)

* No notifications received.

LIVERPOOL STREET IMPROVEMENT SCHEME.

General Description of the Area.

This is a pocket of old yards and small streets, containing 79 houses, in which are 212 separate dwellings, and a population of 702, off a main thoroughfare in the central business portion of the City, and shut in by high buildings, mostly warehouses or factories.

In the northern portion of the area is Liverpool Street, a narrow thoroughfare, which almost traverses it. On either side of Liverpool Street are small tenemented houses of ground floor and one floor above, with two to three holdings apiece, all old and in bad repair. The street is narrow and dismal, and behind the houses on the north side are tiny, inadequate yards, without egress, except through the house passage, and hemmed in by high buildings. The yards are for the most part ill-paved, foul, and incapable of being kept clean.

In some of the courts (Patterson's Court and Percy Court) the sole water supply for the houses surrounding the court is obtained from a single Kennedy tap in the yard.

Along the south side is Percy Court, a long yard of nondescript houses, all decayed. At the upper portion of the court, numbers 8 to 12 form a big block of the larger type of tenement rookery, with ground floor, first and second floors. These on their front aspect are pretty open, but otherwise hemmed in. They are about the best of a bad lot.

Patterson's Court, between Percy Court and Liverpool Street, consists almost entirely of back-to-back tenements. The enclosed yard is badly paved, and contains a big block of coal-houses, below which is the single Kennedy tap, common to all the houses in the yard, and another big block of water closets. The ashbins stand in the yard. Between the upper portion of Patterson's Court and Liverpool Square is a tangle of dirty stable yards, surrounding a small court known as Liverpool Lane.

The uppermost portion of the area (that adjoining Leazes Lane) consists of two courts of houses, the first, Arthur's Square, being old, pretty well worn out, but in fairly good repair, and with a decent class of tenants. The other, Leazes Court, is as bad as anything to be found in the City in every respect, including the class of tenants. Behind Leazes Court is another stable yard.

This conglomeration of yards and courts has been a continual source of complaint and difficulty to the Health Department as far back as any of the present staff can remember, and except that it is older and more dilapidated, it is little different from what it was when present senior inspectors first entered the Department. The area is incapable of improvement, other than by complete obliteration. Here again condemnation has been postponed from year to year, owing to lack of other houses, and of alternative accommodation.

90 per cent. of the houses are condemnable on sanitary grounds, owing to congestion, dilapidation, lack of adequate sanitary convenience, insufficient water supply, back-to-back construction, and dampness, etc.

Of the 212 dwellings, 96 are inhabited at the rate of more than two persons per room.

Health Statistics.

In examining the mortality records the general death rate for this area was found in 1923 to be one and a half times that for the City as a whole; the diarrhœa death rate was eight times that for the whole City, and the pneumonia incidence was more than double that for the City.

The mortality rates, etc., for the area comprised in the scheme, as compared with the whole of the City, are as follows :—

Year 1923.

	Liverpool Street.	*Whole City.*
General death rate per 1,000 population	18·5	12·9
Tuberculosis death rate	—	1·46
Tuberculosis attack rate	1·4	2·9
Tuberculosis attack rate (year 1922)	8·5	2·75
Pneumonia attack rate	7·1	3·0
Pneumonia death rate	1·4	1·2
Measles death rate	2·8	0·54
Diarrhœa death rate	2·8	0·36
Dwellings per acre	107	8·5 (net)
Houses per acre	40	—
Persons	355	40 (net)

The Newcastle-upon-Tyne Improvement Act, 1882, Section 32.

No houses were dealt with under this Section during 1924.

Houses Demolished, etc.—14 tenemented houses and part of another (comprising 54 holdings), 15 self-contained houses, 3 flats, and 1 common lodging house (accommodating 34 men), have been demolished or otherwise have ceased to be used as dwellings, owing to dilapidations, or for conversion to business premises, etc. Included in the "self-contained" houses are 8 of the Munition Cottages at Scotswood, which were destroyed by fire.

Houses built during the Year 1924.—The City Engineer reports that there were 264 self-contained houses, and 2 houses in flats, built privately during the year under report. In addition, 11 dwellings were provided under housing schemes.

Tents, Vans and Similar Structures.—Bye-laws drafted for the regulation of the above have been approved by the Ministry of Health. A systematic inspection is being made of all such dwellings in the City, and the provisions of the Bye-laws enforced.

Tenemented Houses.—The number of tenemented houses in the City is 3,494, containing 9,885 holdings, as follows :—

1 Room.	2 Rooms.	3 Rooms.	4 Rooms.	5 Rooms.	Total.
3,285	5,442	1,054	101	3	9,885

Tenement Byelaws.

The new Bye-laws have now been confirmed by the Ministry of Health. A copy has been sent to owners and agents of such properties. The various provisions are now in force, and it is expected that a considerable improvement will be made in the conditions under which tenement dwellers live.

New Buildings and Sanitary Alterations.—389 plans were examined by the Medical Officer of Health before their submission to the Town Improvement and Streets Committee and, where necessary, suggestions forwarded to the City Engineer for his consideration, as compared with 410 during the previous year.

COMMON LODGING HOUSES.

There are at present on the Register 44 Common Lodging Houses, compared with 46 at the end of last year.. The two removed were 170, Pilgrim Street, to make way for the new Bridge, and 49, New Bridge Street, which has been demolished and the site utilised for a new Cinema and Dancing Hall.

As will be seen from the table which follows lodging houses for men constitute by far the greatest number. There is a real lack of accommodation of this type for single women and married couples. All the houses are kept in a cleanly state, and considering that many of the older ones are in a somewhat bad structural condition, to keep them up to a high standard is no easy proposition.

No serious contravention of the Statutes or Bye-laws has been found, those of a minor nature being dealt with by your Inspector without having to report to the Health Committee.

Generally speaking, all the houses are well conducted and kept in a cleanly state, in fact in such a condition as to compare favourably with many houses of a more pretentious nature. The majority of the keepers, it is believed from personal observation, are anxious to comply with the law and do their best for the inmates.

The following summary shows in detail the accommodation as at the end of the year :—

Description of Lodgers.	No. of			Accommodation.			
	Houses.	Single Beds	Double Beds	Married Couples	Single Women	Single Men	Total.
Married couples and single women ...	3	40	21	21	40	..	82
Single women and single men	1	43	..	..	15	28	43
Single men, single women and married couples .	3	144	19	19	61	83	182
Women only	2	35	..	..	35	..	35
Men only	35	1142	..	..	..	1142	1142
	44	1404	40	40 (80 persons)	151	1253	1484

The total number of lodgers for which the houses were registered was thus 1,484, as against 1,580 at the close of 1923 (a decrease of 96 in the total accommodation), due to the removal of two houses and a re-arrangement in one of the others. The average number of

lodgers per night was 1,383, the highest and lowest numbers on any one night being 1,392 and 1,372, respectively.

REGISTERED COMMON LODGING HOUSES.

SUMMARY OF WORK DONE AND VISITS MADE DURING THE YEAR 1924.

Number of Houses on the register at the end of the year	44
Applications for re-registration (Newcastle Corporation Act, 1911, Sec. 63); all granted	46
Houses ceased to be occupied as common lodging houses	2
Inspections made in the day-time	5,318
Inspections made in the night-time	231
Notices served (*re* washing of bed clothes, 180) (*re* limewashing of houses 90)	270
Contraventions of Bye-laws, etc. :—	
Beds not properly "aired" during prescribed hours	29
Slops not emptied before 10 a.m.	2
Structural defects in houses	5
Lack of proper ventilation (broken sash-cords, etc.)	4
Defective water-closets	23
Defective roofs and defective or choked spouting	21
Sinkwaste pipe obstructed or defective	7
Choked W.C.'s and drains	53
Dust bins defective or insufficient	19
Burst water pipe	1
Number of prosecutions	None
Deaths reported (non-infectious disease)	1
Cases of infectious disease reported (tuberculosis 10, erysipelas 1, measles 10)	21

FACTORIES AND WORKSHOPS.

There are at present on the Register 1,426 workshops, and in addition 139 "domestic" workshops, 283 workplaces, 26 laundries and 216 bakehouses (28 of the latter being factories).

Particulars as to the nature of the various trades, number of inspections, defects found and dealt with, outworkers, etc., are given in the following tables.

During the year 66 lists of outworkers have been received, 19 employers having sent in their lists twice and 28 employers once. Included in the lists were 14 names and addresses of outworkers employed in other

towns, and these were forwarded to the Local Authorities of the respective districts, as required by the Factory and Workshop Act, whilst one of the lists was received from a firm in another district employing as an outworker a person resident in Newcastle.

50 notices as to insanitary conditions in factories and workshops were received from H.M. Inspector of Factories; 23 of these related to factories (which are not visited by the Inspectors of the Health Department except on receipt of complaint from H.M. Inspector), and 27 to workshops. Many of the latter, however, had been dealt with before receipt of the complaint. All of the complaints were duly investigated, dealt with, and the necessary works carried out without legal proceedings being taken.

ADMINISTRATION OF THE FACTORY AND WORKSHOP ACT, 1901, IN CONNECTION WITH FACTORIES, WORKSHOPS, WORKPLACES AND HOMEWORK, DURING THE YEAR 1924.

Home Office Tables.

1.—INSPECTION.

INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS.

PREMISES. (1)	NUMBER OF		
	Inspections. (2)	Written Notices. (3)	Prosecutions. (4)
Factories (Including Factory Laundries.)	247	419	..
Workshops (Including Workshop Laundries.)	8,138		
Workplaces (Other than Outworkers' premises included in Part 3 of this Report.)	1,353		
Total	9,738	419	..

2.—DEFECTS FOUND.

Particulars.	Number of Defects.			Number of Prosecutions.
	Found.	Remedied.	Referred to H.M. Inspector.	
(1)	(2)	(3)	(4)	(5)
**Nuisances under the Public Health Acts:—*				
Want of cleanliness	235	235	1	..
Want of ventilation	10	10	1	..
Overcrowding	..	..	..	..
Want of drainage of floors	..	..	..	..
Other nuisances	62	62	..	..
†Sanitary accommodation — insufficient	31	29	..	..
†Sanitary accommodation — unsuitable or defective	82	81	..	..
†Sanitary accommodation — not separate for sexes	19	18	..	..
Offences under the Factory and Workshop Act: —				
Illegal occupation of underground bakehouse (s. 101)	..	..	..	..
Breach of special sanitary requirements for bakehouses (ss. 97 to 100)	74	74	..	..
Other offences (Excluding offences relating to outwork which are included in Part 3 of this Report.)	..	..	1	..
Total	513	509	3	..

* Including those specified in sections 2, 3, 7 and 8 of the Factory and Workshop Act as remediable under the Public Health Acts.

† Sec. 22 of the Public Health Acts Amendment Act, 1890, is in force. The standard fixed by the Sanitary Accommodation Order (No. 89) of 4th February, 1903, is followed as a model.

FACTORY AND WORKSHOP ACTS—*continued.*

3.—HOME WORK.

Nature of Work.	Outworkers' Lists, Section 107.									Outwork in Unwholesome Premises, Section 108.			Outwork in Infected Premises, Sections 109, 110.		
	Lists received from Employers.						Notices served on Occupiers as to keeping or sending Lists.	Prosecutions.							
	Twice in the Year.			Once in the Year.											
	Lists.†	Outworkers.†		Lists.	Outworkers.			Failing to keep, or permit inspection of Lists.	Failing to send Lists.	Instances.	Notices served.	Prosecutions.	Instances.	Orders made (Section 110).	Prosecutions (Sections 109, 110.)
		Contractors	Workmen.		Contractors	Workmen.									
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Wearing Apparel Making, etc. ..	38	16	71	27	10	49	§ 51	..	..	4	* 4	..	..	..	..
Quilt-making	..	..	..	1	..	2	..	..	..	..	..	..	..	..	..
Total	38	16	71	28	10	51	51	..	..	4	4	..	..	..	..

Notes.—† The figures in columns (2), (3), and (4) are the total number of lists (received from employers who sent them both in February and August as required by the Act) and of the entries of names of outworkers in those lists. They are, therefore, double of the number of such employers and (approximately) double of the number of individual outworkers whose names are given, since in the February and August lists of the same employer the same outworker's name is often repeated.

Columns (3), (4), (6), and (7)—Employers seldom state whether their Outworkers are "Contractors" or "Workmen," hence the numbers given above may not be properly divided.

§ In 47 of these cases the lists of outworkers were not received in the month of February or August as required by the Act, but in every case they were subsequently received on the employers being reminded of their default. In the remaining 4 cases (of failing to keep or permit inspections of lists of outworkers) notice was also given and complied with.

* In each case the Notice was served upon the Outworker, and was duly complied with.

4.—REGISTERED WORKSHOPS.

Workshops on the Register (s. 131) at the end of the year. (1)	Number. (2)
Workshops	1,426
Domestic Workshops	139
Workplaces	283
Laundries	26
Bakehouses	216*
Total	2,090

* Includes 28 "Factory" and 79 "Domestic" Bakehouses.

5.—OTHER MATTERS.

Class. (1)		Number. (2)
Matters notified to H.M. Inspector of Factories:—		
Failure to affix Abstract of the Factory and Workshop Act (sec. 133)		9
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (s. 5).	Notified by H.M. Inspectors	50
	Reports (of action taken) sent to H.M. Inspectors	50
Other:—		
Underground Bakehouses (s. 101):—		
Certificates granted during the year		..
In use at the end of the year		7

6.—TRADES.

Particulars as to the number and nature of the various trades carried on in the workshops of the City.

Trades.	Workshops.	Domestic Workshops.	Workplaces.
Athletic Outfitters, etc.	10	..	..
Bacon Curing, Pickles, etc.	51	1	2
Bags, Waterproofs, etc. (making and repairing)	19	2	2
*Bakehouses	216	..	..
Blacksmiths, Plumbers, etc.	108	..	3
Bouquets and Wreaths (making, etc.)	11	..	..
Boots, etc. (making and repairing)	117	25	..
Dressmaking, Underclothing, etc.	259	64	..
Drysalters, Cleaning & Packing Fruit, Tea, etc.	33	1	50
Furniture Making, Joiners, etc.	190	7	..
Harness, etc. (making and repairing)	22	..	..
Jewellery, Watches, etc. (making and repairing)	67	2	..
Laundries	26	..	..
Machines and Tools (making and repairing)	134	3	3
Miscellaneous Warehouses, Stables, etc.	90	..	72
Painters, Engravers, Photographers, etc.	82	2	11
Restaurant Kitchens, etc.	..	..	140
Tailoring, Shirts, etc.	233	32	..
Totals	1,668	139	283

* Includes 28 "Factory" and 79 "Domestic" Bakehouses.

COUNCIL AND OTHER SCHOOLS.

Sanitary Inspections.—135 inspections of these schools were made during the year, and out of that number only 3 cases of insanitary conditions were found. These were reported to the school authorities, and were all remedied. The details are given on page 216.

RAG FLOCK ACT, 1911.

Eight samples of rag flock were taken under the above Act and submitted for analysis to the Public Analyst.

All conformed to the standard of cleanliness laid down by the Regulations under the Act, which provide that a sample of flock must not contain more than 30 parts of chlorine in 100,000 parts of flock, the amounts of chlorine varying from 6 to 30 parts per 100,000 of flock.

I am, Sir,

Your obedient servant,

C. RAIMES,

Senior Sanitary Inspector,
Inspector of Common Lodging Houses, etc.

Health Department,
Town Hall,
30*th May*, 1925.