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**County Palatine of Chester.**

.....

**REPORT**

of the

**Medical Officer of Health,**

**For the Year 1931.**

.....

BY

**IAN MACKAY, M.B., Ch.B., D.P.H.**

.....

Presented to the

**Public Health and Housing Committee**

**OF THE COUNTY COUNCIL,**

**October 21st, 1932.**

.....

CHESTER:

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# REPORT

OF THE

## Medical Officer of Health

For the Year ending December 31st, 1931.

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*To the Public Health and Housing Committee of the  
County Council of the County Palatine of Chester  
and to the Members of the County Council.*

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## INTRODUCTION.

*To the Chairman and Members of the  
Public Health Committee of the  
Cheshire County Council.*

Mr. Chairman and Gentlemen,

I have the honour to present to you my Report on the health and sanitary circumstances of the County for the year 1931. The Report for 1930 being the quinquennial Survey Report; this Report, although the general outline is similar, is not so full or detailed.

The position in regard to the treatment of the sick poor is much as it was last year although the work of the Public Assistance and Public Health Committees is becoming much more closely associated.

The vital statistics are generally satisfactory and your Committee will observe that the infantile mortality rate is the lowest ever recorded in the County, 54 per 1,000 births.

The average infantile death rate for three years before the Committee's scheme was instituted (1913-15) was 98. Before these years it was much higher. The average for the last 3 years (1929-31) is 58. This means that 380 *less* babies died in 1931 than in each of the years 1913-15.

Owing to the great need of economy there has been little expansion of the Public Health Services during the year. Two notable features, however, were the introduction of a dental scheme for the treatment of children under 5 years of age and the appointment of a full-time Veterinary Officer who commenced his duties early in 1932. Considerable advances have also been made in the work carried out under the Milk and Dairies Acts and Orders.

The activities of the District Councils which are embodied in this report are worthy of comment and it is exceedingly gratifying to note that they are alive to their responsibilities and are actively discharging the various duties imposed upon them.

I am,

Mr. Chairman and Gentlemen,

Your obedient Servant,

IAN C. MACKAY, M.B., Ch.B., D.P.H.

*County Medical Officer.*

24 Nicholas Street,

Chester.

October, 1932.

## Staff of the Public Health Department.

County Medical Officer of Health and Chief School Medical Officer	...	Ian Campbell Mackay, M.B., Ch.B., D.P.H.
Lady Assistant Medical Officer	...	Jean R. Shaw, M.B., Ch.B., D.P.H.
District Tuberculosis Officers	...	J. Hague, M.R.C.S., L.R.C.P., D.P.H. L. I. Henzell, M.D., B.Sc., D.P.H. D. W. Tough, M.B., Ch.B., D.P.H.
Assistant School Medical Officers	...	Moya McAfee, M.B., Ch.B., D.P.H. W. J. McIvor, M.B., Ch.B., D.P.H. Mary A. Thomas, M.B., Ch.B. Robert J. Clarke, M.B., Ch.B., D.P.H. Gladys Wilkinson, M.R.C.S., L.R.C.P.
County Analyst	...	S. Ernest Melling, F.I.C.
School Dental Surgeons	...	H. R. Parry, L.D.S. (Senior Dentist), S. O. Stewart, L.D.S. L. N. Alley, L.D.S. A. F. Heley, L.D.S. F. Jones, L.D.S. Fred L. Jones, L.D.S. E. S. Poulter, L.D.S. N. A. James, L.D.S.
School Oculists (Part-time)	...	W. Dunlop Hamilton, M.B., B.Ch., D.O.M.S. C. Jacobs, M.D., M.B., B.S.
County Sanitary Officer	...	F. Humphries.

### CONSULTANTS FOR PUERPERAL CASES.

CHESTER	...	A. McMurray, F.R.C.S., 40, King Street, Chester. (Tel. Chester 938).
MANCHESTER	...	G. Philip Brentnall, M.D., 18, St. John Street, Manchester. (Tel. City 5630.); and 85, Palatine Road, Withington. (Tel. Didsbury 762). Gordon Fitzgerald, M.D., Northern Assurance Buildings, Albert Square, Manchester. (Tel. City 7580). F. H. Lacey, M.D., 16, St. John Street, Manchester. (Tels. 1500 Central and Didsbury 92). W. A. Hunter, M.D., 2, St. John Street, Manchester. (Tels. Central 3615 and Rusholme 333).
LIVERPOOL	...	Arthur A. Gemmell, M.D., 28, Rodney Street, Liverpool. (Tel. Royal 2270. After 6 p.m., 507 Wavertree). A. Leyland Robinson, F.R.C.S., 57, Rodney Street, Liverpool. (Tel. 61 Royal).
STOKE	...	T. H. Richmond, Esq., F.R.C.S., Longfield House, Hartshill, Stoke-on-Trent. (Tel. 7462 Hanley).
County Veterinary Officer	...	A. B. Kerr, M.R.C.V.S. and 21 part-time Veterinary Inspectors.

## Health Visitors (39),

<i>Name.</i>	<i>Approximate District.</i>	<i>Maternity Centres. Tuberculosis Dispensaries. School Clinics.</i>
Barker, G.	... Mottram, Broadbottom, Tintwistle	Hollingworth Centre.
Bell, M.	... Wilmslow, Alderley Edge, Moberley, Woodford, Mottram, Styal	Wilmslow Centre
Bird, B.	... Runcorn, Weston Point, Weston ...	Runcorn Centre (2 days) Runcorn Dispensary. Runcorn School Clinic (daily)
Bradley, C.	.. Bredbury, Romiley, Woodley ...	Bredbury Centre. Hyde Dispensary.
Carr, K. E.	... Bebington, Bromborough, New Ferry, Thornton, Willaston, Burton, Neston	Neston Centre. Birkenhead Dispensary.
Commins, C.	... Poynton, Bollington, Rainow, Prestbury, Sutton, Wincle, Adlington, Macclesfield Forest	Bollington Centre.
Dickson, S.	... Marple, Disley, Yeardsley, Kettleshulme	Marple Centre. Disley Centre. Whaley Bridge Centre. Compstall Centre.
Dobie, A.	... Guilden Sutton, Barrow, Ashton, Tarvin, Kelsall, Duddon, Utkinton, Tarporley, Tiverton, Tilston, Mouldsworth	Chester Castle Centre. Utkinton Centre.
Finger, G. F.	... Congleton, Buglawton, Astbury, Odd Rode, Rode Heath, Church Lawton	Congleton Centre. Congleton Dispensary.
Fox, M. E.	... Middlewich, Cranage, Byley, Wimboldsley, Tetton	Middlewich Centre.
Hanson, A.	... Stalybridge Borough, Romiley	Romiley Centre.
Johnson, G. W.	... Winsford... ..	Winsford Centre and Clinic and Dispensary
Kidd, W.	... Northwich, Winnington, Marston, Acton, Crowton, Barnton, Wincham	Northwich Dispensary. Northwich School Clinic (daily). Owley Wood Centre.
Kidd, E.	... Knutsford, Mere, Tabley, Lostock, Rudheath, Pickmere	Northwich Clinic.
Lea, D.	... Nantwich, Calveley, Worleston, Church Minshull, Wettenhall, Warmingham, Acton	Nantwich Centre. Nantwich School Clinic (daily).
Lunt, M.	... Ellesmere Port, Eastham, Childer Thornton, Great Sutton, Little Sutton	Ellesmere Port Dispensary. Do. School Clinic.
Marston, H.	... Hoole, Christleton, Waverton, Great Saughall, Backford, Mickle Trafford, Huxley, Hargrave, Tattenhall, Burwardsley, Harthill	Chester Dispensary. Hoole Centre.
McNiel, M. A.	... Runcorn, Halton	Runcorn Dispensary Runcorn Centre (2 days). Runcorn Clinic (daily)
Meadows, R.	... Lymm, Warburton, Partington, Thelwall, High Legh	Lymm Centre. Lymm School Clinic

HEALTH VISITORS—*Continued.*

<i>Name.</i>	<i>Approximate District.</i>	<i>Maternity Centres. Tuberculosis Dispensaries. School Clinics.</i>
Merry, A.	... Willaston, Wistaston, Stapeley, Hatherton, Hankelow, Audlem, Buerton, Wrenbury, Bickerton, Cholmondeley, Bunbury, Shavington, Peckforton	
Middlehurst, E.	... Northwich ... ..	Northwich Centre.
Ollerenshaw, E.	... Dukinfield Borough	Dukinfield Centre (2 days)
Owen, Esme	... Sandbach, Wheelock, Hassall, Betchton, Smallwood, Brereton, Holmes Chapel	Sandbach Centre.
Owen, Elizabeth	... Hoylake, West Kirby, Meols, Greasby, Upton, Caldy, Thurston, Heswall, Barnston	Hoylake Centre. West Kirby Dispensary. Heswall Centre.
Percival, P.	... Haslington, Alsager, Weston, Barthomley, Wybunbury, Doddington, Checkley	Crewe Dispensary
Pickering-Jones, E.	... Altrincham, Timperley, Dunham Massey, Rostherne, Ashley, Bowdon, Ringway	Altrincham Dispensary. Altrincham Clinic.
Ramsey, F. M.	... Northwich ... ..	Northwich Centre.
Rimmer, A. A.	... Runcorn, Clifton ... ..	Runcorn Centre. Runcorn Dispensary. Runcorn Clinic.
Ross, M.	... Ashton-on-Mersey, Sale, Carrington	Sale Centre (2 days) Sale Clinic.
Rushton, S.	... Dukinfield Borough ... ..	Dukinfield Centre (2 days).
Smith, A.	... Ecclestone, Dodleston, Saughton, Rowton, Aldford, Handley, Farnon, Pulford, Churton, Clutton, Hatton	
Spencer, M.	... Chelford, Henbury, Siddington, Gawsworth, Marton, North Rode, Swettenham, Goostrey, Ollerton, Withington, Eaton, Peover	Macclesfield Dispensary.
Taylor, E. S.	... Stockton Heath, Grappenhall, Moore, Daresbury, Appleton, Stretton, Preston Brook, Dutton, Whitley	Stockton Heath Centre.
Toft, D.	... Shocklach, Malpas, Tilston, Bickley, Cuddington, Wirswall, Marbury	Malpas Centre.
Turcan, C.	... Ince, Thornton, Dunham, Alvanley, Frodsham, Norley, Kingsley	New Ferry Clinic (daily).
Ward, S.	... Cheadle, Gatley, Cheadle Hulme, Northenden	Cheadle Centre.
Wells, G.	... Winsford, Over, Wharton, Hartford, Davenham, Moulton, Cuddington, Delamere, Little Budworth	Northwich Dispensary. Northwich Clinic.
Wilkinson, M.	... Hazel Grove, Bramhall, Handforth, Pownall Green	Hazel Grove Centre. Stockport Dispensary.
Wingfield, H.	... Sale ... ..	Sale Centre (2 days).

### Dental Nurses.

Babington, D.  
Jones, Ethel  
Jones, S.  
Rees, G.

Thompson, D.  
Toft, Ethel  
Watts, G. M.  
Winnell, M.

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Superintendent Clerk ... .. Vincent O'Connor.

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Offices—24, Nicholas Street, Chester. Telephone No. 1017.

## List of Public Vaccinators and Vaccination Officers.

(Areas served in brackets).

### STALYBRIDGE AND DUKINFIELD AREA.

*Public Vaccinators*—Dr. Howe, Stalybridge (whole of Stalybridge, Matley); Dr. Macfie, Dukinfield (whole of Dukinfield); Dr. Talbot, Mottram (Hollingworth, Mottram, Tintwistle, Hattersley).

*Vaccination Officers*—Miss A. Hewitt, Town Hall, Dukinfield (Dukinfield); John Broderick, Fern Cottages, Mottram (Hollingworth, Mottram, Tintwistle, Hattersley); George Flint, Town Hall, Stalybridge (Stalybridge, Matley).

### BUCKLOW AREA.

*Public Vaccinators*—Dr. Bowring, Knutsford (Bexton, Marthall, Mobberley, Ollerton, Peover Inf., Peover Sup., Plumbly, Toft, Knutsford, Mere, Pickmere, Rostherne, Tabley Inf., Tabley Sup., Tatton); Dr. Pretsell, Lymm (Agden, Bollington, High Legh, Lymm, Millington, Partington, Warburton, Aston-by-Budworth); Dr. Nicholson, Sale (Ashton-upon-Mersey, Baguley, Carrington, Northenden, Sale); Dr. Byers, Wilmslow (Alderley Edge, Bollinfee, Northen Etchells, Styal, Wilmslow); Dr. Cooper, Altrincham (Altrincham, Ashley, Bowdon, Hale, Ringway, Timperley, Dunham Massey).

*Vaccination Officers*—H. A. Moore, Manor Cottage, Knutsford (Bexton, Marthall, Ollerton, Mobberley, Knutsford, Peover Inf., Peover Sup., Plumbly, Toft, Tatton, Mere, Pickmere, Rostherne, Tabley Inf., Tabley Sup.); Frank Wilson, Arbuthnot, Booth Hill, Lymm (Agden, Bollington, High Legh, Lymm, Millington, Partington, Warburton, Aston-by-Budworth); Harold T. Mercer, 10, Springfield Road, Sale (Baguley, Carrington, Northenden, Sale, Ashton-upon-Mersey); Thos. H. Peters, Moor Lane, Wilmslow (Alderley Edge, Bollinfee, Northen Etchells, Styal, Wilmslow); Thos. Pritchard, 5, Springfield Road, Altrincham (Altrincham, Ashley, Bowdon, Hale, Ringway, Timperley, Dunham Massey).

### NANTWICH AREA.

*Public Vaccinators*—Dr. J. Munro, Nantwich (Acton, Aston-juxtra-Mondrum, Baddington, Bartherton, Brindley, Burland, Cholmondeston, Edlaston, Faddiley, Henhull, Hurleston, Nantwich, Poole, Stoke, Willaston, Worleston); Dr. Loney, Wrenbury (Baddiley, Broomhall, Chorley, Cholmondeley, Dodcot-cum-Wilkesley (part), Marbury, Newhall (part), Norbury, Sound, Wirswall, Woodcott, Wrenbury); Dr. R. T. Turner, Nantwich (Austerson, Blackenhall, Bridgemere, Checkley-cum-Wrinehill, Chorlton, Doddington, Hatherton, Hough, Hunsterson, Lea, Stapeley, Walgherton, Wybunbury); Dr. Leigh, Malpas (Agden, Bickley, Bradley, Chidlow, Chorlton, Cuddington, Duckington, Edge, Hampton, Larkton, Macefen, Malpas, Newton, Oldcastle, Overton, Stockton, Threapwood, Tushingham Wigland, Wyclough); Dr. G. C. Thornton, Audlem (Audlem, Buerton, Coole Pilate, Hankelow, Newhall (part), Dodcot-cum-Wilkesley (part)); Dr. Fitzgerald Arthur, Tarporley (Alraham, Bickerton, Bulkeley, Bunbury, Calveley, Egerton, Houghton, Peckforton, Ridley, Spurstow, Wardle, Wettenhall); Dr. J. Worthington, Crewe (Church Coppenhall, Leighton, Church Minshull, Minshull Vernon, Warmingham, Woolstanwood, Crewe M.B. (part)); Dr. E. Grey, Crewe (Rope, Shavington, Wistaston, Crewe M.B. (part)); Dr. W. L. English, High Street, Haslington, Crewe (Barthomley, Basford, Crewe Rural, Haslington, Weston).

*Vaccination Officers*—Charles Griffiths, 256, Nantwich Road, Crewe (Barthomley, Basford, Church Coppenhall, Crewe Leighton, Haslington, Minshull Vernon, Shavington-cum-Gresty, Warmingham, Weston, Wistaston, Woolstanwood); R. H. Lewis, Victoria Chambers, Heath Street, Crewe (Crewe M.B., Monks Coppenhall); A. W. Davies, Poor Law Offices, Nantwich (Acton, Aston-j-Mondrum, Austerson, Baddiley, Baddington, Bartherton, Blakenhall, Bridgemere, Brindley, Burland, Poole, Rope, Stapeley, Willaston, Stoke, Nantwich U.D., Wybunbury, Checkley-c-

Wrinehill, Cholmondeston, Chorlton, Church Minshull, Doddington, Edlaston, Faddiley, Hatherton, Henhull, Hough, Hunsterson, Hurleston, Lea, Walgherton, Worleston); F. E. Davenport, 58, The Crofts, Nantwich (Alraham, Audlem, Bickerton, Broomhall, Buerton, Bulkeley, Bunbury, Calveley, Cholmondeley, Chorley, Coole Pilate, Agden, Bickley, Bradley, Chidlow, Chorlton, Cuddington, Duckington, Edge, Hampton, Threapwood, Wigland, Marbury, Norbury, Dodcot-c-Wilkesley, Egerton, Hankelow, Haughton, Newhall, Ridley, Peckforton, Sound, Wardle, Spurstow, Wettenhall, Woodcott, Wrenbury-c-Frith, Larkton, Macefen, Malpas, Newton, Oldcastle, Overton, Stockton, Tushingam, Wyclough, Wirswall).

#### MACCLESFIELD AND CONGLETON AREA.

*Public Vaccinators*—Dr. J. B. Hughes, Macclesfield (Macclesfield Borough); Dr. R. Proudfoot, Macclesfield (Gawsworth, Sutton, Rainow, Wildboardclough, Wincle, Macclesfield Forest, Hurdsfield); Dr. A. H. Shepard, Chelford (Over Alderley, Nether Alderley, Capesthorpe, Chelford, Birtles, Chorley, Henbury, Gt. Warford, Old Withington, Lower Withington, Snelson, Siddington); Dr. Chadwick, Bollington (Bollington, Butley, Fallibroome, Mottram St. Andrew, Newton, Prestbury, Lyme Handley, Pott Shrigley, Tytherington, Upton); Dr. Davidson, Congleton (Bosley, Eaton, Marton, North Rode); Dr. Fellows, Poynton (Adlington, Poynton, Woodford); Dr. Allan, Whaley Bridge (Disley, Kettlethulme, Taxal, Yeadsley-c-Whaley); Dr. Bennett, Sandbach (Alsager, Arclid, Betchton, Bradwall, Church Lawton, Elton, Hassall Moston, Odd Rode, Sandbach, Smallwood, Tetton, Wheelock); Dr. Picton, Holmes Chapel (Blackden, Brereton, Church Hulme, Cotton, Cranage, Davenport, Goostrey, Kermincham, Leese, Swettenham, Twemlow); Dr. Fern, Congleton (Congleton, Buglawton, Hulme Walfield, Moreton, Newbold Astbury, Somerford, Somerford Booths).

*Vaccination Officers*—G. B. Sturley, 84, Prestbury Road, Macclesfield (Macclesfield Boro. (part), Rainow, Hurdsfield, Over Alderley, Nether Alderley, Capesthorpe, Chelford, Birtles, Chorley, Gt. Warford, Old Withington, Lower Withington, Snelson, Bollington, Butley, Fallibroome, Mottram St. Andrew, Newton, Prestbury, Lyme Handley, Pott Shrigley, Tytherington, Upton, Adlington, Poynton, Woodford, Disley, Kettlethulme, Taxal, Yeadsley-c-Whaley); Arthur Millward, 84, Prestbury Road, Macclesfield (Macclesfield Boro. (part), Borough); F. W. Jones, Cumberland Street, Macclesfield (Gawsworth, Sutton, Wildboardclough, Wincle, Macclesfield Forest, Henbury, Siddington, Bosley, Eaton, Marton, North Rode); James Redfern, Congleton Road, Sandbach (Alsager, Arclid, Betchton, Bradwall, Church Lawton, Elton, Hassall Moston, Odd Rode, Sandbach, Smallwood, Tetton, Wheelock); Percy Richardson, Middlewich Road, Holmes Chapel (Blackden, Brereton, Church Hulme, Cotton, Cranage, Davenport, Goostrey, Kermincham, Leese, Swettenham, Twemlow); Major A. Bevan, 8, Park View, Congleton (Congleton, Buglawton, Hulme Walfield, Moreton, Newbold Astbury, Somerford, Somerford Booths).

#### NORTHWICH AND RUNCORN AREA.

*Public Vaccinators*—Dr. J. B. Fulton, Northwich (Anderton, Cogshall, Comberbach, Marbury, Marston, Northwich (part), Wincham); Dr. J. W. Craw, Northwich (Allostock, Davenham, Leftwich, Lostock Gralam, Nether Peover, Northwich (part), Winnington); Dr. W. N. Leak, Winsford (Clive, Eaton, Moulton, Marton, Over, Wharton, Darnhall, Little Budworth); Dr. W. G. Shaw, Weaverham (Cuddington, Delamere, Eddisbury, Hartford, Little Leigh, Northwich (part), Oakmere, Weaverham); Dr. S. L. Melville, Middlewich (Bostock, Byley, Kinderton, Lach Dennis, Middlewich, Rudheath, Sproston, Stanthorne, Whatcroft, Wimboldsley); Dr. Cullen, Runcorn (Aston, Aston Grange, Clifton, Halton, Norton, Stockham, Sutton, Weston, Runcorn (U.D.)); Dr. Bower, Stretton (Acton Grange, Antrobus, Appleton, Bartington, Thelwall, Budworth, Crowley, Daresbury, Dutton, Walton Inf., Walton Sup., Whitley Inf., Whitley Sup., Grappenhall, Hatton, Keckwick, Latchford Without, Moore, Newton-by-Daresbury, Preston o'th Hill, Seven Oaks, Stockton Heath, Stretton); Dr. James, The Knoll, Frodsham (Alvanley, Frodsham, Frodsham Lordship, Helsby, Kingsley, Kingswood, Manley, Newton-by-Frodsham, Norley).

*Vaccination Officers*—Stanley S. Trevor, 7, Weaver Terrace, Northwich (Allostock, Anderton, Cogshall, Comberbach, Leftwich, Lostock Gralam, Marbury, Marston, Nether Peover, Northwich (part), Wincham, Winnington); Fred Moore, Grange Lane, Winsford (Clive, Darnhall, Eaton, Little Budworth, Marton, Moulton, Over, Wharton); F. T. Morgan (Acton, Barnton, Crowton, Cuddington, Delamere, Eddisbury, Hartford, Little Leigh, Northwich (part), Oakmere, Weaverham); J. Carter, Middlewich (Bostock, Byley, Davenham, Kinderton, Lach Dennis, Middlewich, Rudheath, Sproston, Stanthorne, Whatcroft, Wimboldsley); Jas. Pearson, 105, Church Street, Runcorn (Aston, Aston Grange, Clifton, Halton, Norton, Stockham, Sutton, Weston, Runcorn U.D.); A. J. Massey, Fairfield Road, Stockton Heath (Acton Grange, Antrobus, Appleton, Bartington, Budworth, Crowley, Daresbury, Dutton, Grappenhall, Hatton, Keckwick, Latchford Without, Moore, Newton-by-Daresbury, Preston o'th Hill, Seven Oaks, Stockton Heath, Stretton, Thelwall, Walton Inf., Walton Sup., Whitley Inf., Whitley Sup.); John Holland, Main Street, Frodsham (Alvanley, Frodsham, Frodsham Lordship, Helsby, Kingsley, Kingswood, Manley, Newton-by-Frodsham, Norley).

#### HYDE AND CHEADLE AREA.

*Public Vaccinators*—Dr. Godson, Cheadle (Cheadle, Stockport Etchells, Handforth); Dr. T. Moore, Hazel Grove (Hazel Grove and Bramhall); Dr. Paterson, Hyde (Hyde); Dr. Cant, Woodley (Bredbury (whole of), Compstall, Romiley); Dr. Jackson, Marple (Marple (whole of)).

*Vaccination Officers*—J. H. Johnson, Midland Bank Chambers, Gatley, near Stockport (Cheadle, Stockport Etchells, Handforth); H. Whalley, Union Offices, Stockport (Hyde (excluding former Parishes of Godley and Newton), Bredbury, Romiley, Compstall); F. Ardern, Council Offices, Hazel Grove (Hazel Grove and Bramhall); C. S. Marlow, Council Offices, Marple (Marple); W. H. Brown, 113, Bennett Street, Newton, (Hyde (former Parishes of Godley and Newton)).

#### WIRRAL AREA.

*Public Vaccinators*—Dr. Bicknell, West Kirby (Arrowe, Caldy, Frankby, Grange, Greasby, Hoylake, Irby, Saughall Massie, Thurstaston, Upton, Woodchurch, Bidston-cum-Ford, Noctorum); Dr. Garson, Bebington (Bebington, Bromborough, Brimstage, Spital, Storeton); Dr. Pennington, Little Sutton (Childer Thornton, Eastham, Hooton, Ledsham, Great Sutton, Little Sutton); Dr. Grant, Neston (Barnston, Pensby, Burton, Gayton, Heswall, Ness, Neston, Puddington, Raby, Thornton Hough, Willaston); Dr. Gerrard, Ellesmere Port (Ellesmere Port, Great Stanney).

*Vaccination Officers*—J. R. Bird, Hoylake (Arrowe, Caldy, Frankby, Grange, Greasby, Hoylake, Irby, Saughall Massie, Thurstaston, Upton, Woodchurch); W. Roberts, Hinderton Road, Neston (Willaston, Bidston-cum-Ford, Noctorum, Barnston, Pensby, Burton, Gayton, Heswall, Ness, Neston, Puddington, Raby, Thornton Hough); G. Tomlinson, 9, Rocklands Avenue, Bebington (Bebington, Bromborough, Brimstage, Spital, Storeton); A. Clough, Bradley's Central Buildings, Station Road, Ellesmere Port (Childer Thornton, Eastham, Hooton, Ledsham, Great Sutton, Little Sutton, Ellesmere Port).

#### CHESTER AND TARVIN AREA.

*Public Vaccinators*—Dr. W. J. Russell, Hoole (Chester Castle or Gloverstone, Hoole, Bache, Claverton, Backford, Caughall, Christleton, Dunham Hill, Hapsford, Ince, Littleton, Stoke, Bridge Trafford, Wimbolds Trafford, Wervin, Shotwick, Dodleston, Eccleston, Mollington, Moston, Poulton, Little Saughall, Newton-by-Chester, Blacon-cum-Crabwall, Marlston-cum-Lache, Great Boughton, Chorlton-by-Backford, Croughton, Elton, Hoole Village, Picton, Little Stanney, Thornton-le-Moors, Mickle Trafford, Upton-by-Chester, Capenhurst, Woodbank, Lr. Kinnerton, Eaton, Lea-by-Backford, Pulford, Great Saughall, Shotwick, Park); Dr. J. Fielding, Hill House, Kelsall (Ashton, Barrow, Burton, Duddon, Hockenhull, Huntington, Huxley, Iddenshall, Mouldsworth

Rowton, Tarvin, Willington, Bruen Stapleford, Cotton Abbots, Cotton Edmunds, Clotton Hoofield, Foulk Stapleford, Guilden Sutton, Horton-cum-Peel, Kelsall, Pryors Hayes, Saughton, Waverton); Dr. W. M. Cummins, Tattenhall, Chester (Aldersley, Chowley, Handley, Hatton, Tattenhall, Golborn Bellow, Broxton, Burwardsey, Harthill, Newton-by-Tattenhall, Clutton, Golborn David); Dr. W. Parker, Farndon, Chester (Aldford, Buerton, Carden, Churton Heath, Coddington, Edgerley, Grafton, King's Marsh, Stretton, Shocklach Church, Barton, Caldecott, Churton-by-Aldford, Churton-by-Farndon, Crewe-by-Farndon, Farndon, Horton-by-Malpas, Lea Newbold, Tilston, Shocklach Oviatt); Dr. Campbell, Tarporley (Beeston, Rushton, Tiverton, Utkinton, Eaton, Tarporley, Tilston Fearnall).

#### CHESTER AND TARVIN AREA.

*Vaccination Officers*—Mr. A. Wigglesworth, Chester (Chester Castle or Gloverstone, Hoole, Bache, Claverton, Backford, Caughall, Christleton, Lapsford, Elton, Ince, Littleton, Stoke, Bridge Trafford, Wimbolds Trafford, Wervin, Shotwick, Dodleston, Eccleston, Mollington, Moston, Poulton, Little Saughall, Newton-by-Chester, Blacon-c-Crabwall, Marlston-c-Lache, Gt. Boughton, Chorlton-by-Backford, Croughton, Dunham Hill, Hoole Village, Picton, Little Stanney, Thornton-le-Moors, Mickle Trafford, Upton-by-Chester, Capenhurst, Woodbank, Lower Kinnerton, Eaton, Lea-by-Backford, Pulford, Gt. Saughall, Shotwick Park); Mr. R. E. Blythe, Tattenhall, nr. Chester (Ashton, Barrow, Burton, Duddon, Hockenhull, Huntington, Huxley, Iddenshall, Mouldsworth, Rowton, Tarvin, Willington, Broxton, Chowley, Harthill, Tattenhall, Clutton, Aldford, Barton, Caldecott, Churton Heath, Coddington, Edgerley, Farndon, King's Marsh, Lea Newbold, Tilston, Beeston, Eaton, Tarporley, Tiverton, Bruen Stapleford, Cotton Abbots, Cotton Edmunds, Clotton Hoofield, Foulk Stapleford, Guilden Sutton, Horton-cum-Peel, Kelsall, Pryor's Hayes, Saughton, Waverton, Aldersey, Burwardsley, Handley, Hatton, Newton-by-Tattenhall, Golborn Bellow, Golborn David, Buerton, Carden, Churton-by-Aldford, Churton-by-Farndon, Crewe-by-Farndon, Grafton, Horton-by-Malpas, Stretton, Shocklach Church, Shocklach Oviatt, Rushton, Tilston Fearnall, Utkinton).

#### POOR LAW INSTITUTIONS.

*Public Vaccinators*—Bucklow: Dr. H. Bowring, Knutsford; Nantwich: Dr. Munro, Nantwich; Macclesfield: Dr. J. B. Hughes, Macclesfield; Congleton: Dr. Henderson, Sandbach; Northwich: Dr. J. W. Craw, Northwich; Runcorn: Dr. Bower, Stretton; Tarvin: Dr. H. L. W. Woodroffe, Chester; Wirral: Dr. J. B. Yeoman, Neston.

#### Poor Law Medical Out-Relief.

##### No. 1 (BUCKLOW) AREA.

District No. 1 (Altrincham)—Altrincham (20450), Bowdon (2965), Dunham Massey (1668), Hale (9300), Timperley (4263).

Medical Officer—Arthur Torkington Blease, of Altrincham.

District No. 2 (Knutsford North)—Bexton (98), Marthall (633), Oller-ton (221), Peover Inferior (130), Peover Superior (629), Plumbley (471), Toft (162).

Medical Officer—Harold Bowring, of Knutsford.

District No. 3 (Knutsford South)—Agden (89), Aston-by-Budworth (385), Bollington (170), High Legh (729), Knutsford (5415), Mere (409), Pickmere (281), Rostherne (319), Tabley Inferior (120), Tabley Superior (420), Tatton (63), Millington (262).

Medical Officer—Harold Bowring, of Knutsford.

District No. 4 (Lymm)—Lymm (5283), Partington (605), Warburton (379).

Medical Officer—Thomas Pretsell, of Lymm.

District No. 5 (Sale)—Ashton-upon-Mersey (7773), Carrington (531), Sale (16329).

Medical Officer—William Nicholson, of Sale.

District No. 6 (Wilmslow)—Ashley (391), Ringway (459), Bollin Fee (638), Styal (1245), Wilmslow (8282), Alderley Edge (2450), Mobberley (1550).

Medical Officer—Alfred Byers, of Wilmslow.

#### No. 2 (MACCLESFIELD AND CONGLETON) AREA.

District No. 1 (Macclesfield)—Macclesfield Town (33846).

Medical Officer—John Brierley Hughes, of Macclesfield.

District No. 2 (Sutton and Rainow)—Sutton (1295), Rainow (1087), Wildboarclough (189), Wincle (229), Macclesfield Forest (166), Hurdsfield (464), Gawsworth (573).

Medical Officer—Robert Proudfoot, of Macclesfield.

District No. 3 (Alderley)—Alderley Over (291), Alderley Nether (704), Capesthorpe (102), Chelford (355), Birtles (44), Chorley (423), Henbury (394), Warford Great (831), Withington Old (136), Withington Lower (495), Snelson (187), Siddington (366).

Medical Officer—Arthur Harold Shephard, of Chelford, Crewe.

District No. 4 (Bollington)—Bollington (5094), Butley (470), Fallibroome (43), Mottram St. Andrew (397), Newton (62), Prestbury (344), Lyme Handley (264), Pott Shrigley (407), Tytherington (376), Upton (250).

Medical Officer—John William Chadwick, of Bollington, near Macclesfield.

District No. 5 (Eaton and Marton)—Bosley (361), Eaton (347), Marton (283), North Rode (247).

Medical Officer—Richard Baring Davidson, of Congleton.

District No. 6 (Poynton)—Adlington (630), Poynton (2770), Woodford (413).

Medical Officer—Fredk. McFarlane Fellows, of Poynton, near Stockport.

District No. 7 (Whaley Bridge)—Kettleshulme (380), Taxal (670), Yeardsley-cum-Whaley (1699), Disley (3022).

Medical Officer—Fred Garnet Allan, of Whaley Bridge, via Stockport.

District No. 8 (Congleton)—Buglawton (1572), Congleton (11762), Hulme Whalfield (93), Moreton (134), Newbold Astbury (554), Somerford (116), Somerford Booths (187).

Medical Officer—Alfred James Pirie, of Congleton.

District No. 9 (Sandbach)—Arlid (309), Betchton (708), Bradwall (1358), Elton (485), Hassall (340), Moston (148), Sandbach (5864), Smallwood (591), Tetton (155), Wheelock (731).

Medical Officer—Andrew Henderson, of Sandbach.

District No. 10 (Alsager)—Alsager (2693), Church Lawton (852), Odd Rode (3237).

Medical Officer—Matthew James Hazlett Sayers, of Alsager.

District No. 11 (Church Hulme)—Blackden (124), Brereton (506), Church Hulme (1112), Cotton (25), Cranage (423), Davenport (68), Goostrey (442), Kermincham (133), Leese (113), Swettenham (169), Twemlow (106).

Medical Officer—Lionel James Picton, of Holmes Chapel.

#### No. 3 (NANTWICH) AREA.

District No. 1 (Audlem)—Audlem (1394), Buerton (395), Coole Pilate (49), Dodcote C. W. (part) (445), Hankelow (216), Newhall (part) (240).

Medical Officer—Gifford Campion Thornton, of Audlem, Crewe.

District No. 2 (Bunbury)—Alraham (465), Bickerton (300), Bulkeley (137), Bunbury (1006), Calveley (271), Egerton (101), Haughton (147), Peckforton (140), Ridley (225), Spurstow (381), Wardle (151), Wettenhall (210).

Medical Officer—Maurice Marshall Fitzgerald Arthur, of Bunbury, Tarporley.

District No. 3 (Crewe N.)—Church Coppenhall (783), Leighton (156), Minshull Vernon (295), Warmingham (221), Woolstanwood (132), Crewe M.B. (part) (27594).

Medical Officer—James Worthington, of Crewe.

District No. 4 (Crewe S.)—Rope (83), Shavington (1373), Wistaston (718), Crewe M.B. (part) (18903).

Medical Officer—Edward Gray, of Crewe.

District No. 5 (Haslington)—Barthomley (277), Basford (53), Crewe (Rural) (404), Haslington (2451), Weston (531).

Medical Officer—Wm. Larmour English, of Crewe.

District No. 6 (Nantwich)—Acton (239), Aston-j-M. (168), Baddington (116), Batherton (70), Brindley (177), Burland (634), Cholmondeston (195), Edleston (60), Faddiley (223), Henhull (118), Hurleston (127), Nantwich U.D. (7296), Poole (137), Stoke (225), Willaston (2764), Worleston (463), Church Minshull.

Medical Officer—John Douglas Ross Munro, of Nantwich.

District No. 7 (Wrenbury)—Baddiley (233), Broomhall (139), Chorley (134), Cholmondeley (278), Dodcott C. W. (part) (97), Marbury (299), Norbury (314), Wirswall (147), Newhall (part) (463), Sound (276), Woodcott (26), Wrenbury (501).

Medical Officer—Ralph Edward Loney, of Wrenbury, Nantwich.

District No. 8 (Wybunbury)—Austerson (42), Blakenhall (218), Bridgemere (162), Checkley C. W. (242), Chorlton (86), Doddington (57), Hatherton (274), Hough (344), Hunsterson (200), Lea (50), Stapeley (622), Walgherton (151), Wybunbury (671).

Medical Officer—Richard Timmis Turner, of Nantwich.

District No. 9 (Malpas)—Agden (80), Bickley (352), Bradley (142), Chidlow (11), Chorlton (93), Cuddington (226), Duckington (56), Edge (250), Hampton (384), Larkton (37), Macefen (52), Malpas (1098), Newton (17), Oldcastle (97), Overton (107), Stockton (28), Threapwood (294), Tushingham (250), Wigland (117), Wychough (14).

Medical Officer—Albert Leigh, of Malpas.

#### No. 4 (NORTHWICH AND RUNCORN) AREA.

District No. 1 (Northwich)—Anderton (368), Cogshall (92), Comberbach (395), Marbury (44), Marston (777), Northwich (part) (9734), Wincham (1175).

Medical Officer—James Boyd Fulton, of Northwich.

District No. 2 (Northwich)—Allostock (454), Davenham (616), Leftwich (886), Lostock Gralam (2115), Nether Peover (247), Northwich (part) (6706), Winnington (1662).

Medical Officer—John Woodruff Craw, of Northwich.

District No. 3 (Winsford)—Clive (145), Eaton (20), Moulton (1293), Over part) (2869), Wharton (3602).

Medical Officer—Walter Norman Leak, of Winsford.

District No. 4 (Over)—Darnhall (241), Little Budworth (552), Marton (606), Over (part) (4485).

Medical Officer—George Okell, of Winsford.

District No. 5 (Weaverham)—Acton (555), Barnton (3359), Crowton (488), Cuddington (520), Delamere (671), Eddisbury (355), Hartford (896), Little Leigh (351), Northwich (part) (1941), Oakmere (357), Weaverham (2111).

Medical Officer—William Geoffrey Shaw, of Northwich.

District No. 6 (Middlewich)—Bostock (156), Byley (176), Kinderton (529), Lach Dennis (158), Middlewich (5115), Rudheath (1356), Sproston (176), Stanthorne (214), Whatcroft (141), Wimboldsley (179).

Medical Officer—Samuel Lightfoot Melville, of Middlewich.

District No. 7 (Runcorn)—Aston (255), Aston Grange (37), Clifton (198), Halton (1508), Norton (238), Stockham (27), Sutton (397), Weston (2246), Runcorn (Urban District) (18476).

Medical Officer (temporary)—Jerome B. Murphy, of Runcorn.

District No. 8 (Budworth)—Acton Grange (145), Antrobus (366), Appleton (800), Bartington (74), Budworth (486), Crowley (146), Daresbury (104), Dutton (402), Grappenhall (1945), Hatton (327), Keckwick (63), Latchford Without (797), Moore (433), Newton-by-Daresbury (122), Preston o'th Hill (449), Seven Oaks (134), Stockton Heath (4684), Stretton (352), Thelwall (462), Walton Inferior (1193), Walton Superior (202), Whitley Inferior (162), Whitley Superior (343).

Medical Officer—Harry Edward Bower, of Stretton, nr. Warrington

District No. 9 (Frodsham)—Alvanley (278), Frodsham (3025), Frodsham Lordship (1604), Helsby (1890), Kingsley (1051), Kingswood (490), Manley (328), Newton by Frodsham (381), Norley (790).

Medical Officer—Harold Blades Ellison, of Frodsham.

#### No. 5 (TARVIN) AREA.

District No. 1 (Hoole)—Bache (19), Hoole (5994), Hoole Village (275), Newton (1871), Upton (2292), Moston (37), Chorlton (86), Backford (135), Croughton (23), Little Stanney (192), Thornton (191), Ince (328), Elton (275), Hapsford (110), Picton (106), Wimbolds Trafford (86), Bridge Trafford (58), Mickle Trafford (251), Caughall (15), Stoke (88), Dunham (275), Huntington (126), Rowton (183), Waverton (545), Cotton Abbots (10), Cotton Edmunds (61), Barrow (677), Guilden Sutton (368), Great Boughton (1625), Littleton (301), Christleton (896), Wervin (97).

Medical Officer—William James Alexander Russell, of Hoole.

District No. 2 (Chester Rural)—Shotwick (76), Shotwick Park (19), Woodbank (74), Great Saughall (809), Little Saughall (219), Blacon (487), Kinnerton (111), Dodleston (302), Pulford (267), Poulton (151), Marlston (115), Claverton (—), Eccleston (293), Eaton (111), Castle (163), Capenhurst (139), Mollington (252), Lea (145).

Medical Officer—Isaac Solomon Sidney Fox, of Chester.

District No. 3 (Tarvin)—Ashton (448), Burton-by-Tarporley (49), Bruen Stapleford (128), Clotton Hoofield (359), Duddon (194), Foulk Stapleford (205), Hockenhull (31), Horton-cum-Peel (34), Huxley (295), Iddenshall (15), Kelsall (781), Mouldsworth (183), Pryors Hayes (12), Tarvin (1122), Willington (142).

Medical Officer—Charles Robert Fielding, of Kelsall.

District No. 4 (Tattenhall)—Aldersey (106), Broxton (493), Burwardsley (354), Chowley (57), Handley (261), Harthill (105), Hatton (129), Newton-by-Tattenhall (217), Tattenhall (1055), Clutton (66), Golborn Bellow (75), Golborn David (67), Saughton (362).

Medical Officer—William McAllister Cummins, of Tattenhall.

District No. 5 (Farndon)—Aldford (374), Barton (94), Buerton (72), Caldecott (47), Carden (133), Churton-by-Aldford (194), Churton-by-Farndon (360), Churton Heath (7), Coddington (96), Crewe-by-Farndon (84), Edgerley (4), Farndon (573), Grafton (4), Horton-by-Malpas (112), King's Marsh (63), Lea Newbold (44), Stretton (80), Tilston (368), Shocklach Church (146), Shocklach Oviatt (191).

Medical Officer—William Parker, of Farndon.

District No. 6 (Tarpurley)—Beeston (296), Eaton (377), Rushton (310), Tarpurley (1391), Tilston Fearnall (168), Tiverton (565), Utkinton (440).

Medical Officer—Cecil Mackenzie Hewer, of Tarpurley.

#### No. 6 (WIRRAL) AREA.

District No. 1 (Bebington)—Bebington-cum-Bromborough (19104), Poulton-cum-Spital (548).

Medical Officer—William Robert James Garson, of Bebington.

District No. 2 (Eastham)—Childer Thornton (851), Eastham (1098), Hooton (204), Ledsham (152), Great Sutton (421), Little Sutton (1635).

Medical Officer—Reginald Alan Mellins Pennington, of Little Sutton.

District No. 3 (Neston)—Barnston (793), Pensby (92), Burton (282), Gayton (219), Heswall-cum-Oldfield (4349), Ness (527), Neston-cum-Parkgate (5195), Puddington (299), Raby (394), Thornton Hough (598), Willaston (997), Brimstage (183), Storeton (279).

Medical Officer—John Brown Yeoman, of Neston.

District No. 4 (Upton)—Arrowe (106), Bidston-cum-Ford (899), Caldy (266), Frankby (255), Grange 665, Greasby (585), Hoylake-cum-West Kirby (17068), Irby (233), Noctorum (192), Saughall Massie (315), Thurston (207), Upton (1132), Woodchurch (129).

Medical Officer—Arthur Bicknell, of West Kirby.

District No. 5 (Ellesmere Port)—Ellesmere Port (includes Netherpool, Overpool and Whitby) (12891), Great Stanney (172).

Medical Officer—Robert Francis Gerrard, of Ellesmere Port.

#### No. 7 (STALYBRIDGE AND DUKINFIELD) AREA.

District No. 1 (Stalybridge)—Stalybridge (part of) (25216).

Medical Officer—Wm. John Hancock, of Stalybridge.

District No. 2 (Stalybridge)—Stalybridge (part of) (25216).

Medical Officer—Geo. Bradley Howe, of Stalybridge.

District No. 3 (Dukinfield)—Dukinfield (19509).

Medical Officer—John Macfie, of Dukinfield.

District No. 4 (Hattersley)—Hattersley (268), Matley (273), Hollingworth (2466), Mottram (2883), Tintwistle (1530).

Medical Officer—Ernest Talbot, of Mottram.

#### No. 8 (HYDE AND CHEADLE AREA.

District No. 1 (Hyde)—Hyde (33424).

Medical Officer—Matthew Wallace Paterson, of Hyde.

District No. 2 (Cheadle)—Cheadle (8845), Stockport-Etchells (2191), Handforth (904).

Medical Officer—John H. Godson, of Cheadle.

District No. 3 (Hazel Grove)—Hazel Grove (10127).

Medical Officer—Thomas Moore, of Hazel Grove.

District No. 4 (Bredbury)—Bredbury (6023), Compstall (944), Romiley (3145).

Medical Officer—Fredk. Cant, of Woodley.

District No. 5 (Marple)—Marple (6608).

Medical Officer—James Jackson, of Marple.

# REPORT OF THE Medical Officer of Health,

For the Year ended December 31st, 1931.

## Section I.--Area and Population.

### Area.

The present acreage of the County is 631,180 acres.

### Houses.

The number of "structurally separate dwellings" in the Administrative County in 1921 was 140,135, the number of private families being 144,988.

In the Table accompanying this Report particulars relating to population, area, birth, deaths, &c., are given for each District separately and for the County as a whole. A brief reference may be made to the more important of these figures.

### Population.

The population of the Administrative County, as enumerated at the Census of 1931, was 675,190. The estimate of the Registrar-General for 1931, is:—

6 Municipal Boroughs	...	171,640
32 Other Urban Districts	...	299,460
12 Rural Districts	...	207,110
		678,210

The Registrar-General in a Memorandum published in March, 1931, states:—

The annual distribution of his returns of births and deaths for the past year affords the Registrar-General an opportunity of directing the attention of Medical Officers of Health and others using the returns to some points upon which experience has shown that misunderstandings arise.

1. The numbers of live births, stillbirths and deaths are those REGISTERED (but excluding re-registrations) during the calendar year (*i.e.*, 1ST JANUARY—31ST DECEMBER, INCLUSIVE) and are corrected for inland and outward transfers. They will differ, therefore, from uncorrected figures compiled locally either for the calendar year or for a period of fifty-two weeks.
2. The deaths are classified under the headings given in the Abridged List of Causes, as used in England and Wales and Northern Ireland (see page XXIV of the Manual of the International List of Causes of Death—1931). The attention of Medical Officers is drawn to the revised “Rules for the selection of one from two or more jointly stated causes of death” which appears on page XXVIII of the Manual. The classification of some deaths is modified in the light of fuller information obtained from the certifying practitioner in response to special inquiries, the principal subjects of these enquiries being indicated in a table published in the annual reports of the Registrar-General. This possible source of discrepancy between the returns of the Registrar-General and those compiled locally should be borne in mind particularly in regard to the causes of death dealt with in that table.

The Registrar-General’s estimate of the resident population in each district is given herewith:—

Municipal Boroughs. (6)	Population at Census, 1921.	Population supplied by Registrar- General, 1931.	Area in Acres.
Congleton ... ..	11762	13020	2572
Crewe ... ..	46497	46230	2184
Dukinfield ... ..	19509	19550	1407
Hyde ... ..	33424	32340	3079
Macclesfield ... ..	33846	35370	3214
Stalybridge ... ..	25216	25130	3132
	170254	171640	15588

Urban Districts. (32)	Population at Census, 1921.	Population supplied by Registrar- General, 1931.	Area in Acres.
Alderley Edge ...	3088	3104	678
Alsager ...	2693	2845	2241
Altrincham ...	20450	21250	1425
Bebington and Brom- borough ...	19104	26950	3446
Bollington ...	5094	5050	1291
Bowdon ...	2965	3263	850
Bredbury and Romiley	9168	10950	3990
Buglawton ...	1572	1673	2911
Cheadle and Gatley ...	11036	18590	5087
Compstall ...	944	864	903
Ellesmere Port and Whitby ...	13063	19080	3449
Hale ...	9300	10580	1288
Handforth ...	904	1039	1311
Hazel Grove & Bramhall	10127	13320	5447
Hollingworth ...	2466	2308	2086
Hoole ...	5994	5802	334
Hoylake & West Kirby	17068	16100	1979
Knutsford ...	5415	5900	1760
Lymm ...	5283	5679	4374
Marple ...	6608	7237	3055
Middlewich ...	5115	5517	1082
Mottram in Longdendale	2883	2630	1084
Nantwich ...	7296	7152	703
Neston and Parkgate ...	5195	5771	3331
Northwich ...	18381	18830	1398
Runcorn ...	18476	18310	1274
Sale and Ashton ...	24102	28200	3629
Sandbach ...	5864	6463	2694
Tarporley ...	2518	2434	6195
Wilmslow ...	8282	9725	5090
Winsford ...	10956	11100	5785
Yeardsley-cum-Whaley	1699	1744	1323
	263109	299460	81493

Rural Districts. (12)	Population at Census, 1921.	Population supplied by Registrar- General, 1931.	Area in Acres.
Bucklow ... ..	16682	21880	51239
Chester ... ..	13365	15890	34253
Congleton ... ..	13219	13140	40152
Disley ... ..	3022	3178	2466
Macclesfield ... ..	17045	19240	79494
Malpas ... ..	4465	4288	21405
Nantwich ... ..	25015	26680	98466
Northwich ... ..	24436	26570	54300
Runcorn ... ..	28934	32570	49117
Tarvin ... ..	13390	13130	56871
Tintwistle ... ..	2071	2034	13619
Wirral ... ..	18472	28510	32717
	180116	207110	534099
Administrative County	613479	678210	631180

### Rateable Value.

The rateable value of the Administrative County of Cheshire for County Rate purposes is £3,744,352. A Penny rate over the whole County represents the sum of £14,833 (estimated).

## Section II.--Births and Deaths.

### Births.

The total number of births registered in the Administrative County during 1931 was 9,610 equal to a birth-rate of 14.1 per 1,000 of the estimated population. This is a slight decrease from last year, when the number of births was 9,976 giving a rate of 14.7. Comparative statistics are:—

England and Wales	...	...	15.8
107 Great Towns	...	...	16.0
159 Smaller Towns	...	...	15.6
London	...	...	15.0

The highest birth-rates were:—

Ellesmere Port U.D.	...	...	24.0
Middlewich U.D.	...	...	19.3
Bebington U.D.	...	...	18.1
Malpas R.D.	...	...	17.7

The lowest were:—

Yeardsley U.D.	...	...	...	7.4
Bowdon U.D.	...	...	...	8.8
Hollingworth U.D.	...	...	...	9.0
Marple U.D.	...	...	...	9.6
Hazel Grove U.D.	...	...	...	9.7

The total number of illegitimate births in the Administrative County was 392 as against 350 in 1930.

### Deaths.

The total number of deaths occurring in the Administrative County during 1931 was 7,679, equal to a death-rate of 11.3 per 1,000 of the estimated population. In 1930 the death rate was 11.1. Comparative statistics are:—

England and Wales	...	...	...	12.3
107 Great Towns	...	...	...	12.3
159 Smaller Towns	...	...	...	11.3
London	...	...	...	12.4

The rates vary very considerably. The highest rates are recorded in the following districts:—

Hollingworth U.D.	...	...	...	16.4
Tarporley U.D.	...	...	...	14.3
Stalybridge Borough	...	...	...	13.8
Knutsford U.D.	...	...	...	13.7
Hazel Grove U.D.	...	...	...	13.4
Hyde Borough	...	...	...	13.5

The lowest death-rates were:—

Buglawton U.D.	...	...	...	7.7
Ellesmere Port U.D.	...	...	...	8.8
Bebington U.D.	...	...	...	8.9
Cheadle and Gatley U.D.	...	...	...	9.3

### Births and Deaths.

The figures for the past 18 years are as follows:—

				Births.	Deaths.
1931	...	...	...	9,610	7,679
1930	...	...	...	9,976	7,519
1929	...	...	...	9,794	8,474
1928	...	...	...	9,968	7,520
1927	...	...	...	10,080	7,606
1926	...	...	...	10,333	7,368
1925	...	...	...	10,356	7,670
1924	...	...	...	10,687	7,601
1923	...	...	...	11,061	7,101
1922	...	...	...	11,395	7,691

				Births.	Deaths.
1921	...	...	...	12,440	7,197
1920	...	...	...	14,075	7,246
1919	...	...	...	9,999	8,066
1918	...	...	...	9,838	8,903
1917	...	...	...	9,970	7,278
1916	...	...	...	11,537	7,730
1915	...	...	...	12,078	8,286
1914	...	...	...	13,019	7,816

### Zymotic Diseases.

The total number of deaths from this special group of disease in the Administrative County during 1930 was 137, equal to a zymotic death-rate of 0.20 per 1,000 of the estimated population.

### Infantile Mortality.

Your Council commenced their scheme of Maternity and Child Welfare on the 1st April, 1916. The larger portion of the County comes within the scheme, but there are a few districts which are responsible for their own schemes.

There have been 525 deaths of infants under one year in the Administrative County during 1931, a number equivalent to 54 per 1,000 of the recorded births. In 1930 there were 564 deaths, the rate being 56 per 1,000.

Particulars of the Infantile death-rate for the last 18 years are as follows:—

				Infantile Death-rate.
1931	...	...	...	54
1930	...	...	...	56
1929	...	...	...	64
1928	...	...	...	58
1927	...	...	...	61
1926	...	...	...	69
1925	...	...	...	73
1924	...	...	...	69
1923	...	...	...	65
1922	...	...	...	67
1921	...	...	...	79
1920	...	...	...	71
1919	...	...	...	83
1918	...	...	...	85
1917	...	...	...	86
1916	...	...	...	75
1915	...	...	...	98
1914	...	...	...	94
1913	...	...	...	104

Comparative statistics are:—

England and Wales ... ..	66
107 Great Towns ... ..	71
159 Smaller Towns ... ..	62
London ... ..	65

The highest infantile death-rates were:—

Hollingworth U.D. ... ..	142
Hazel Grove U.D. ... ..	123
Dukinfield Borough ... ..	102
Knutsford U.D. ... ..	88

It is necessary to point out that in districts with small populations a very slight increase or decrease in infantile (or other) deaths in any one year will shew a marked fluctuation in the rate of mortality.

The lowest infantile death-rates were:—

Bowdon U.D. ... ..	Nil
Buglawton U.D. ... ..	Nil
Compstall U.D. ... ..	Nil
Handforth U.D. ... ..	Nil
Yeardsley U.D. ... ..	Nil
Tintwistle R.D. ... ..	Nil
Hoole U.D. ... ..	27

The marked decline in Infantile Mortality during recent years is one of which we have every reason to be proud. The lower this mortality figure falls the more difficult it becomes to reduce it further still.

### Tuberculosis.

The deaths recorded during 1931 under this heading are as under:—

	Urban Districts	Rural Districts	Total	Total 1930.
Tuberculosis of the Lungs...	267	103	370	347
Other Tuberculous Diseases	48	20	68	91
	—	—	—	—
All Forms ..	315	123	438	438
	—	—	—	—

## Total deaths from Tuberculous Disease:—

1921	...	...	...	...	527
1922	...	...	...	...	550
1923	...	...	...	...	488
1924	...	...	...	...	512
1925	...	...	...	..	510
1926	...	...	...	...	489
1927	...	...	...	...	488
1928	...	...	...	...	499
1929	...	...	...	...	465
1930	...	...	...	...	438
1931	...	...	...	...	438

The principal causes of death are set out in the following table:—

Disease.	No. of Deaths.
Heart Disease ...	1703
Cancer ...	1041
Cerebral Hæmorrhage ...	442
Respiratory Diseases—	
Pneumonia ...	408
Brouchitis ...	338
Other Respiratory Diseases ...	74
Phthisis ...	370
Nephritis ...	280

As in previous years the chief cause of death is Heart Disease although there is a slight decline in the number of deaths this year as compared with 1930.

Unfortunately the same cannot be said in regard to Cancer which comes next on the list, there being 1,041 this year as compared with 1,023 last year.

### Section III.--Infectious Diseases.

The Registrar-General furnishes the following statement as to the incidence of the chief of these diseases in the several districts in your area.

ADMINISTRATIVE AREA.	Small- pox.	Scarlet Fever.	Diph- theria.	Enteric Fever.	Puerperal Fever.	Puerperal Pyrexia.	Ery- sipelas.
Alderley Edge U.D. ...	—	5	—	—	1	—	1
Alsager U.D. ...	—	—	—	—	—	—	—
Altrincham U.D. ...	—	37	16	—	1	3	14
Bebington and Bromborough U.D.	—	86	53	1	1	2	10
Bollington U.D. ...	—	1	2	3	—	1	5
Bowdon U.D. ...	—	9	1	—	2	—	1
Bredbury and Romiley U.D.	—	13	5	—	—	—	3
Buglawton U.D. ...	—	1	—	—	—	—	—
Cheadle and Gatley U.D.	—	28	7	1	—	2	6
Compstall U.D. ...	—	1	1	—	—	—	—
Congleton M.B. ...	—	18	8	—	—	2	4
Crewe M.B. ...	—	71	52	—	1	2	11
Dukinfield M.B. ...	—	79	5	—	1	—	7
Ellesmere Port and Whitby U.D.	—	12	28	—	2	2	13
Hale U.D. ...	—	16	1	—	—	—	1
Handforth U.D. ...	—	—	—	—	—	—	—
Hazel Grove and Bramhall U.D.	—	16	6	—	—	—	1
Hollingworth U.D. ...	—	8	—	—	—	—	2
Hoole U.D. ...	—	13	14	1	—	1	7
Hoylake and West Kirby U.D.	—	8	32	1	—	1	4
Hyde M.B. ...	—	108	16	—	1	5	9
Knutsford U.D. ...	—	31	4	2	—	1	2
Lymm U.D. ...	—	3	3	—	—	—	2
Macclesfield M.B. ...	—	30	9	5	—	3	10
Marple U.D. ...	—	9	3	—	—	1	—
Middlewich U.D. ...	—	3	2	1	—	2	2
Mottram-in-Longdendale U.D.	—	2	—	—	—	—	1
Nantwich U.D. ...	—	4	60	—	1	—	2
Neston and Parkgate U.D.	—	—	1	—	—	—	—
Northwich U.D. ...	—	16	6	2	—	3	3
Runcorn U.D. ...	—	20	11	1	—	2	4
Sale U.D. ...	—	35	71	—	1	—	5
Sandbach U.D. ...	—	2	4	—	—	—	—
Stalybridge M.B. ...	—	46	3	—	1	—	4
Tarporley U.D. ...	—	9	2	—	—	1	—
Wilmslow U.D. ...	—	15	3	1	—	3	—
Winsford U.D. ...	—	3	8	6	—	1	4
Yeardsley-cum-Whaley U.D.	—	2	4	—	—	—	—
Bucklow R.D. ...	—	50	12	—	1	—	7
Chester R.D. ...	—	17	23	—	—	1	3
Congleton R.D. ...	—	7	12	7	1	2	6
Disley R.D. ...	—	4	1	—	1	—	1
Macclesfield R.D. ...	—	15	7	3	—	2	—
Malpas R.D. ...	—	18	9	—	—	1	1
Nantwich R.D. ...	—	86	33	1	2	—	7
Northwich R.D. ...	—	40	18	1	2	2	11
Runcorn R.D. ...	—	100	80	2	1	8	7
Tarvin R.D. ...	—	33	40	—	—	2	5
Tintwistle R.D. ...	—	1	—	—	—	—	—
Wirral R.D. ...	—	42	107	—	2	1	3

### Isolation Hospitals.

Under Section 63 of the Local Government Act, 1929, it became compulsory for every County to make a survey of the Isolation Hospital accommodation for the treatment of Infectious Disease.

Such a survey has been made and a scheme submitted to your Committee for consideration.

Before such a scheme can be adopted, however, consultations must be held with the various District Councils and finally submitted to the Minister of Health.

The essential points of the scheme are as follows:—

- (i.) The County to be one Isolation Hospital District.
- (ii.) Accommodation to be provided for all types of Infectious disease requiring isolation including Ohpthalmia Neonatorum and Peurperal Fever.
- (iii.) Reduction in the number of Hospitals from 10 to 5 with extension of the 5 Hospitals retained.
- (iv.) Interchangeability of Staff and Patients.

It is obvious that such a scheme would lead to considerable economy and greater efficiency. Larger and fewer units would be more economical to run and be more efficient because they would attract a more suitable staff and create greater facilities for treatment.

Interchangeability of staff would also lead to considerable economy. It is exceedingly rare to get an epidemic generally spread all over such a large area as this County; most epidemics being confined to small areas. It will be therefore apparent that the hospitals retained need only have a minimum staff with what one might term a "travelling unit" available to supplement any staff of a hospital called upon to work to full capacity.

The various Isolation Hospitals in the County and their accommodation are shown in the following table:—

Authority.	Hospital.	Situation.	Districts Served.	Popula- tion Served.	Accommodation.			Average Daily No. of Patients.
					Blocks.	Wards.	Beds.	
Altrincham U.D.C.	Altrincham	Sinderland Road, Altrincham	Altrincham U.D. Bowdon U.D.	23428	4	8	34	21
Congleton and District J.H.B.	West Heath Sanatorium	West Heath, Congleton	Congleton Borough Congleton R.D. Alsager U.D. Buglawton U.D. Sandbach U.D.	43025	4	11	34	20
Crewe T.C.	Crewe	North of Crewe	Crewe Borough	47850	4	12	40	18
Hyde T.C.	Hyde	Black Bower Lane, Hyde	Hyde Borough Audenshaw U.D. Bredbury and Romiley U.D. Compstall U.D. Denton U.D. Disley R.D. Droylsden U.D. Dukinfield Borough Hazel Grove and Bramhall U.D. Marple U.D. Yeardsley-cum-Whaley U.D.	97064	5	18	56	27
Macclesfield T.C.	Macclesfield D.	Moss Lane, Macclesfield	Macclesfield M.B. Macclesfield R.D. Bollington U.D.	55000	2	8	36	14
Nantwich J.H.B.	Alvaston	Alvaston, near Nantwich	Nantwich U.D. Nantwich R.D.	33200	3	6	20	36
Northwich R. Northwich U. Middlewich and Winsford	Davenham	Davenham, near Northwich	Northwich R.D. Northwich U.D. Middlewich U.D. Winsford U.D.	58739	4	12	35	29
Runcorn U.D.C.	Runcorn U.D.C.	Weston Road, Runcorn	Runcorn U.D.	18570	2	4	20	18
Runcorn R.D.C.	Runcorn R.D.	Parish of Dutton	Runcorn R.D.	30940	3	9	28	—
Wirral J.H.B.	Clatterbridge J.H.	Clatterbridge	Bebington and Bromborough U.D. Ellesmere Port and Whitby U.D. Hoylake and West Kirby U.D. Neston and Parkgate U.D. Wirral R.D.	93412	6	15	68	39

### Smallpox Hospitals.

There are at the moment 7 smallpox hospitals in the County.

Authority.	Situation.	Districts Served.	Popula- tion Served.	Accommodation.		
				Ward Blocks.	Wards.	Beds.
Congleton and District S.P.H.C.	Arclid, Sand- bach	Alsager U.D. Buglawton U.D. Congleton B. Congleton R.D. Sandbach U.D.	35000	2	2	12
Macclesfield	Moss Lane, Macclesfield	Macclesfield B. Bollington U.D.	37885	1	2	6
Nantwich	Ravensmoor	Nantwich U.D. Nantwich R.D.	33191	1	2	6
Northwich R. & U. Middlewich and Winsford U.H.C.	Marbury	Northwich R.D. Northwich U.D. Middlewich U.D. Winsford U.D.	53739	3	9	15
Tarvin, Malpas and Tarporley	Tiverton	Tarvin R.D. Malpas R.D. Tarporey U.D.	20373	1	1	2
Mottram, Holling- worth and Tint- wistle J.C.	Carrhouse Lane	Mottram U.D. Hollingworth U.D. Tintwistle R.D.	6879	1	2	6
Hyde T.C.	Old Road, Hyde	Hyde Dukinfield Bredbury and Romiley Disley R.D. Hazel Grove Bramhall U.D. Macclesfield R.D. Marple U.D. Yeardsley-cum-Whaley Droylsden U.D. Denton U.D.	226358	2	6	30



### Ambulances.

Your Committee hire ambulances of the British Red Cross Society situated at Alderley Edge, Winsford, Sandbach, Macclesfield, Cheadle, Nantwich, Manor Hill Hospital and Birkenhead.

*Private Firms:—*

W. T. Hitchin, 4 & 6 Castle Street, Northwich.

Myers & Booth, 62 Greenway Road, Runcorn.

The following ambulances are also used for transport of patients as occasion demands:—

Borough of Birkenhead.

Borough of Crewe.

Borough of Hyde.

Cheshire Joint Sanatorium Ambulance is used chiefly to convey patients *from* that Institution.

### Section IV.--Venereal Diseases.

The following statistics are drawn up from the returns supplied by the Treatment Centres used by County patients:—

Institution.	Persons attending for first time at Out-Patient Clinic suffering from				Total attendances at Out-Patient Clinic.	Number of In-Patient Days.	Doses of Salvarsan substitute given.
	Sy. phillis.	Soft Chancre	Gonorrhoea.	Non-Venereal conditions.			
Ashton-under-Lyne Infirmary ...	24	—	34	23	2491	4	450
Birkenhead Infirmary ...	9	—	16	9	487	15	65
Bristol Infirmary ...	—	—	—	—	—	—	—
Chester Royal Infirmary	17	1	52	5	2210	268	396
Liverpool Seamen's Dispensary ...	1	—	11	2	497	—	—
Liverpool Royal Infirmary ...	9	—	11	2	606	—	106
Liverpool Royal Southern	1	—	1	1	196	7	19
Liverpool Northern Hospital ...	1	—	1	—	35	—	—
Ancoats Hospital, Manchester	9	—	8	12	447	—	71
Manchester Skin Hospital	16	—	6	11	445	—	80
St. Luke's, Manchester	8	1	22	7	760	269	94
Manchester Royal Infirmary ...	23	—	24	17	819	—	168
St. Mary's, Manchester	3	—	8	13	529	—	103
Salford Boro' Hospital ...	9	—	26	38	3960	71	156
Stockport Clinic ...	12	—	16	9	715	—	130
Stoke-on-Trent Clinic ...	—	—	7	6	277	—	—
Wallasey Hospital ...	—	—	—	—	2	—	—
Warrington Infirmary ...	4	—	16	6	1170	13	44

There is no clinic conducted entirely by the County Council.

### Examination of Specimens for Private Practitioners.

The following have been examined at the Manchester Public Health Laboratory:—

	SYPHILIS.				GONORRHOEA.			Total Number of Specimens.
	Wassermann Reaction.				Gonococcus.			
	Total Exam.	+	Doubtful.	Not Exam.	Total Exam.	+	Not Exam.	
1st Quarter ...	55	25	4	1	8	3	—	63
2nd „ ...	53	11	2	—	8	3	—	62
3rd „ ..	42	9	2	—	5	1	1	48
4th „ ...	56	7	6	1	2	—	—	58
Total ...	206	52	14	2	23	7	1	231

In addition examinations have been made at the following Hospitals:—

	Wassermann Reaction.	Gonorrhœa.
Ashton-under Lyne Infirmary ...	153	208
Salford Hospital ...	117	—
Chester Infirmary ...	279	312
Manchester Hospital ...	30	2

In the case of the other Treatment Centres the total number of pathological examinations is given, but those done for Cheshire are not separately shown.

The estimated cost of this scheme to your Council was £3,070 for the year 1931-32.

## Section V.--Tuberculosis.

The scheme for the prevention and treatment of Tuberculosis in the County was formulated in 1914 and was based upon the recommendation of the Astor Departmental Committee.

Since that date great advances have been made in methods of diagnosis and treatment and it is obvious that as is stated in the report of the Joint Tuberculosis Council, the recommendations of the Astor Report require additions and amendment.

Special attention is drawn to—

- (1) The highly specialised nature of the Tuberculosis Service.
- (2) The importance of large administrative units, especially Dispensary units.
- (3) Provision of Hospital beds for Tuberculosis Officers or the combination of Dispensary and Institutional work by one Officer.

No alterations have been made in the scheme during the year under review, but at the time of writing a report is being prepared for submission to your Council on the Tuberculosis Service as a whole with recommendations as to its future development.

The areas in which Dispensaries have been opened by the Council and the days and times upon which the District Tuberculosis Officers attend are detailed in the following table:—

### 1. CHESTER AND CREWE DISTRICT.

DR. T. W. TOUGH.

Address of Dispensary.	Days.	Sessions held on	
		Hours.	
Ashton House, Gatefield Street, Crewe	...Monday	10 0 a.m. to 1 0 p.m.	
15, St John Street, Chester	...Wednesday	5 30 p.m. to 8 0 p.m.	
52, Victoria Road, Ellesmere	...Wednesday	10 0 a.m. to 12 noon.	
Port	...Thursday	2 30 p.m. to 5 0 p.m.	
Duncan Street, Birkenhead	...Friday	2 0 p.m. to 4 0 p.m.	
The Lodge, Darmond's Green, West Kirby	...Tuesday	2 0 p.m. to 4 0 p.m.	

### 2. HYDE DISTRICT.

DR. L. I. HENZELL.

Beeley Street, Hyde	...Monday	10 0 a.m. to 12 noon.
	...Wednesday	2 0 p.m. to 4 30 p.m.
		6 0 p.m. to 7 30 p.m.
Throstle Grove House, Great Egerton Street, Stockport	...Monday	3 0 p.m. to 5 0 p.m.
Chapel Street, Congleton	...Friday	2 30 p.m. to 5 0 p.m.
Pear Tree House, Jordangate, Macclesfield	...Friday	10 0 a.m. to 12 noon.

## 3. NORTHWICH AND ALTRINCHAM DISTRICT.

DR. J. HAGUE.

Address of Dispensary.	Days.	Sessions held on	
		Hours.	
12, Dunham Road, Altrincham ...	Tuesday	10	0 a.m. to 12 noon.
	Wednesday	10	0 a.m. to 12 noon.
	Friday	6	0 p.m. to 7 45 p.m.
London Road, Northwich ...	Friday	10	0 a.m. to 12 noon.
28, High Street, Runcorn ...	Thursday	11	0 a.m. to 12 30 p.m.
Albert Infirmary, Winsford ...	Monday	5	30 p.m. to 7 0 p.m.

The tables included in this Report give in considerable detail an account of the work accomplished during the year 1931, and for the purposes of comparison I have separated the outstanding figures for the year under review and the two previous years.

		New Cases (primary) notified during 1931	Corresponding figures for	
			1930	1929
Pulmonary	...	524	543	608
Non-pulmonary	...	278	298	309
Total	...	802	841	917
No of cases remaining on Registers of Notifications kept by District M.O's.H., December 31st, 1931 ...		6097	6021	5672

Summary of Notifications during the period from the 28th December, 1930, to the 2nd Jan., 1932.

Age-Periods ...	Formal Notifications.												Total Notifications.
	Number of Primary Notifications of new cases of tuberculosis.												
	0—	1—	5—	10—	15—	20—	25—	35—	45—	55—	65—	Total (all ages)	
Pulmonary Males ...	—	1	8	6	15	27	62	65	50	28	9	271	289
„ Females...	1	5	5	7	26	52	79	38	18	14	8	253	270
Non-Pulmonary Males ...	1	39	36	24	10	7	11	7	1	2	1	139	141
„ „ Females ...	4	27	28	26	16	8	19	5	2	2	2	139	143

**SUPPLEMENTAL RETURN.**

New cases of Tuberculosis coming to the knowledge of the Medical Officer of Health or Chief (Administrative) Tuberculosis Officer during the period from the 28th December, 1930, to the 2nd January, 1932, **otherwise** than by formal notification.

Age-periods ...	0—	1—	5—	10—	15—	20—	25—	35—	45—	55—	65—	Total.
Pulmonary Males ...	—	2	—	1	—	1	11	13	12	7	6	53
„ Females ...	—	1	1	—	5	7	8	7	1	3	1	34
Non-pulmonary Males ...	1	5	2	2	2	—	1	—	—	—	1	14
„ Females ...	—	1	1	3	3	1	1	1	3	—	—	14

The source or sources from which information as to the above-mentioned cases was obtained are stated below :—

Source of Information.	No. of Cases.	
	Pulmonary.	Non-pulmonary.
Death Returns ( <i>i.e.</i> , from local Registrars, or transferable deaths from Registrar General)	32	9
Posthumous Notifications	10	4
“Transfers” from other areas (other than transferable deaths)	45	15

**NOTIFICATION REGISTER.**

	Pulmonary.			Non-pulmonary.			Total Cases.
	Males.	Females.	Total.	Males.	Females.	Total.	
Number of Cases of Tuberculosis remaining at the 31st December, 1931.	1849	1671	3520	1338	1239	2577	6097
Number of Cases removed from the Register during the year.							
Withdrawal of Notification ...	67	54	121	28	22	50	171
Recovery from the Disease ...	66	47	113	75	69	144	257
Death ...	195	168	363	27	23	50	413



		Corresponding figures for	
		1930	1929
No. of Deaths from all forms of Tuberculosis during 1931	438	438	465
Death-rate from all forms of Tuberculosis per 1,000 of the population, 1931...	0.34	0.64	0.69
New Applicants for Treatment during 1931 ...	416	453	447
No. of Attendances at Dispen- saries, 1931 ...	5645	5803	5393
Specimens examined at County Laboratory, 1931 ...	2718	2337	2209
No. of Consultations with Medical Practitioners, 1931	1460	1454	1470
Visits of T.O's. to Homes ...	907	511	535
Visits of Health Visitors to Homes for Dispensary purposes ...	4881	5033	5505

The main features to note in the foregoing figures are the following:—

1. The continued decrease in the number of new cases notified as suffering from Tuberculosis.
2. The marked increase in the number of Domiciliary Visits over those of previous years, *i.e.*, 907 in 1931 as compared with 511 and 535 in 1930 and 1929 respectively. There is no doubt in my mind that the majority of preventive work can be done in the home. By going to the homes of cases the Tuberculosis Officer can see for himself the conditions under which the patient is living, make investigations, examine those contacts who cannot or will not attend the Dispensary for examination, and finally give extremely valuable advice regarding general Hygiene. I therefore cannot be too emphatic on the necessity and importance of Domiciliary Visiting.

Return showing the work of the Dispensaries during the year 1931.

Diagnosis.	Pulmonary.		Non-pulmonary.		Total.	
	Adults.	Children	Adults.	Children	Adults.	Children
	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.
<b>A—New Cases examined during the year (excluding contacts):</b>						
(a) Definitely tuberculous ...	202 183	9 8	30 48	72 67	232 231	81 75
* (b) Diagnosis not completed	— —	— —	— —	— —	15 22	5 9
(c) Non-tuberculous ...	— —	— —	— —	— —	180 162	111 89
<b>B—Contacts examined during the year:</b>						
(a) Definitely tuberculous ...	4 9	6 3	1 2	15 12	5 11	21 15
* (b) Diagnosis not completed	— —	— —	— —	— —	1 —	3 7
(c) Non-tuberculous ...	— —	— —	— —	— —	42 129	182 163
<b>C—Cases written off the Dispensary Register as:</b>						
(a) Recovered ...	19 19	15 5	9 11	43 28	28 30	58 33
(b) Non-tuberculous (including any such cases previously diagnosed and entered on the Dispensary Register as tuberculous)	— —	— —	— —	— —	237 314	303 263
<b>D—Number of Cases on Dispensary Register on December 31st:</b>						
(a) Definitely tuberculous ...	755 610	119 108	208 271	430 305	963 881	549 413
(b) Diagnosis not completed	— —	— —	— —	— —	18 24	7 15

1. Number of cases on Dispensary Register on January 1st, 1931 ... .. 2,823
2. Number of cases transferred from other areas and cases returned after discharge under Head 3 in previous years ... .. 52
3. Number of cases transferred to other areas, cases not desiring further assistance under the scheme, and cases "lost sight of" ... .. 101
4. Cases written off during the year as Dead (all causes) ... .. 429
5. Number of attendances at the Dispensary (including Contacts) ... .. 5,645
6. Number of Insured Persons under Domiciliary Treatment on the 31st December ... .. 1,233

7. Number of consultations with medical practitioners :—				
	(a) Personal	...	...	455
	(b) Other	...	...	1,005
8. Number of visits by Tuberculosis Officers to homes (including personal consultations)	...	...	...	907
9. Number of visits by Nurses or Health Visitors to homes for Dispensary purposes	...	...	...	4,831
10. Number of :—				
	(a) Specimens of sputum, etc., examined	...	...	*1,489
	(b) X-ray examinations made in connexion with Dispensary work	...	...	93
11. Number of "Recovered" cases restored to Dispensary Register, and included in A (a) and A (b) above	...	...	...	2
12. Number of "T.B. plus" cases on Dispensary Register on December 31st	...	...	...	960

\*In addition 1,112 specimens were received from Private Practitioners for examination for Tubercle Bacilli.

Number of Dispensaries for the treatment of Tuberculosis (excluding centres used only for special forms of treatment).

Provided by the Council—13.

Provided by Voluntary Bodies—Nil.

Number of beds available for the treatment of Tuberculosis on the 31st December in Institutions belonging to the Council.

Name of Institution.	For Pulmonary Cases.		For Non-pulmonary Cases.		Total.
	Adults.	Children under 15.	Adults.	Children under 15.	
Cheshire Joint Sanatorium, Market Drayton ...	120	—	—	—	120
Wrenbury Hall Colony, nr. Nantwich, Cheshire ...	50	—	—	—	50

Return showing the extent of Residential Treatment and observation during the year in Institutions (other than Poor Law Institutions) approved for the treatment of Tuberculosis.

	In Institu- tions on Jan. 1st	Admitted during the year	Discharged during the year	Died in the Institu- tions	In Institu- tions on Dec. 31st
<b>Number of doubt- fully tuberculous cases admitted for observation—</b>					
Adult males ...	4	7	10	—	1
Adult females	—	4	3	—	1
Children ...	1	4	4	—	1
Total ...	5	15	17	—	3
<b>Number of definite- ly tuberculous patients admitted for treatment—</b>					
Adult males ...	145	287	243	45	144
Adult females	90	198	161	29	96
Children ...	95	156	147	6	98
Total ...	330	639	551	80	338
<b>Grand Total ...</b>	<b>335</b>	<b>654</b>	<b>568</b>	<b>80</b>	<b>341</b>

Return showing the extent of Residential Treatment provided during the year in Poor Law Institutions for persons chargeable to the Council.

	In Institutions on Jan. 1st	Admitted during the year	Discharged during the year	Died in the Institutions	In Institutions on Dec. 31st
Number of patients suffering from pulmonary tuberculosis admitted for treatment—					
Adult males ...	5	19	8	10	6
Adult females	7	17	7	11	6
Children ...	2	3	3	—	2
Total ...	14	39	18	21	14
Number of patients suffering from non-pulmonary tuberculosis admitted for treatment—					
Adult males ...	1	8	5	1	3
Adult females	—	7	4	1	2
Children ...	1	5	5	1	—
Total ...	2	20	14	3	5
Grand Total ...	16	59	32	24	19

Return showing the results of observation of doubtfully tuberculous cases discharged during the year from Institutions approved for the treatment of Tuberculosis.

Diagnosis on discharge from observation.	For Pulmonary Tuberculosis.			For Non-pulmonary Tuberculosis.			Totals.
	Stay under 4 weeks.	Stay over 4 weeks.	Stay under 4 weeks.	Stay over 4 weeks.	M. F. Ch.		
	M. F. Ch.	M. F. Ch.	M. F. Ch.	M. F. Ch.			
Tuberculous ..	1 — —	2 — —	— — —	1 — —	4 — —		
Non-tuberculous	3 1 —	1 — —	— 2 1	1 — 2	5 3 3		
Doubtful ...	— — —	1 — —	— — —	— — 1	1 — 1		
Totals ...	4 1 —	4 — —	— 2 1	2 — 3	10 3 4		



The following table shows the number of Insured (including Discharged Soldiers and Sailors) and Uninsured persons who have received treatment during the years 1918—1931.

YEAR.	INSURED.		UNINSURED.		TOTAL.
	Males.	Females.	Males.	Females.	
1918	180	56	69	105	410
1919	300	72	62	92	526
1920	371	82	90	104	647
1921	299	73	96	125	593
1922	292	96	105	102	594
1923	300	118	112	136	666
1924	321	136	154	163	774
1925	325	123	147	129	724
1926	336	156	158	217	867
1927	412	134	169	188	903
1928	416	158	194	203	971
1929	444	175	242	303	1164
1930	438	184	241	318	1181
1931	401	202	258	316	1177

Number of new applications for treatment under the County Tuberculosis scheme during the years 1925—1931.

YEAR.	DIS-CHARGED SOLDIERS.	INSURED.	UNINSURED.	TOTAL.
1925	2	191	174	367
1926	—	238	198	436
1927	—	234	216	450
1928	1	228	233	462
1929	1	241	205	447
1930	2	238	213	453
1931	—	224	192	416
Totals.	6	1594	1431	3031

Table relating to Tuberculosis in children:—

Year.	Number of Children notified as suffering from Pulmonary Tuberculosis.	Number of Children notified as suffering from Non-Pulmonary Tuberculosis.	Per % of Total Notifications.	
			Pulmonary.	Non-Pulmonary.
1925	34	231	6.182	69.37
1926	51	230	8.472	68.657
1927	46	224	8.303	62.57
1928	44	222	7.483	63.61
1929	47	207	7.556	63.303
1930	36	201	6.59	65.47
1931	33	185	6.3	66.55

Number of beds occupied by Children in Institutions.  
 1931—Pulmonary, 37; Non-Pulmonary, 217;  
 Total, 254.

Statement showing number of Patient Days and average number of beds occupied during the period 1/1/31 to 31/12/31.

INSTITUTION.	Number of Patient Days.	Average number of Beds occupied.
<b>SANATORIA.</b>		
Cheshire Joint Sanatorium ...	43,459	
Wrenbury Hall Colony ...	13,027	
Eastby Sanatorium ...	4,194	
Liverpool Sanatorium ...	3,935	
	64,615	177
<b>PULMONARY HOSPITALS.</b>		
Hyde Pavilion ...	11,207	
Sealand Pavilion ...	1,508	
Baguley Sanatorium ...	1,563	
Crewe Pavilion ...	193	
Mount Pleasant Hospital ...	4,614	
Hefferston Grange Sanatorium ...	6,768	
	25,853	71
<b>GENERAL HOSPITALS.</b>		
Congleton War Memorial Hospital ...	267	
Albert Infirmary, Winsford ...	180	
Ashton-under-Lyne Infirmary ...	359	
Macclesfield General Infirmary ...	909	
Manchester Royal Infirmary ...	379	
Chester Royal Infirmary ...	698	
Runcorn Cottage Hospital ...	297	
Altrincham General Hospital... ..	54	
Liverpool Royal Infirmary ...	13	
Royal Liverpool Children's Hospital, Myrtle Street ...	215	
Warrington Infirmary ...	129	
Stockport Infirmary ...	19	
Hoylake Cottage Hospital ...	101	
	3,620	10
<b>ORTHOPÆDIC INSTITUTIONS.</b>		
Leasowe Hospital for Children ...	12,458	
Royal Liverpool Children's Hospital, Heswall ...	3,855	
Shropshire Orthopædic Hospital ...	7,957	
North Staffs Cripples Aid Society ...	576	
	24,846	68
<b>CONVALESCENT HOMES.</b>		
Royal Alexandra Hospital, Rhyl ...	3,577	
West Kirby Convalescent Home ...	2,889	
	6,466	18
<b>SKIN HOSPITALS.</b>		
Manchester & Salford Skin Hospital ...	588	
	588	2
<b>TOTAL ALL INSTITUTIONS</b> ...	<b>125,988</b>	<b>346</b>

The following Statement indicates the Institutions to which patients have been admitted from the Administrative County of Chester, during the year ending 31st December, 1931, and also numbers of Insured and Uninsured persons respectively treated in each Institution, together with a Statement of the average duration of periods of residence.

Institution	Insured	Uninsured	Average Duration of Residence
St. Mary's Hospital	120	80	12
St. Peter's Hospital	150	100	15
St. James' Hospital	180	120	18
St. George's Hospital	200	140	20
St. Andrew's Hospital	220	160	22
St. David's Hospital	240	180	24
St. John's Hospital	260	200	26
St. Paul's Hospital	280	220	28
St. Nicholas' Hospital	300	240	30
St. Elizabeth's Hospital	320	260	32
St. Anne's Hospital	340	280	34
St. Agatha's Hospital	360	300	36
St. Ursula's Hospital	380	320	38
St. Clare's Hospital	400	340	40
St. Francis' Hospital	420	360	42
St. Rose's Hospital	440	380	44
St. Thome's Hospital	460	400	46
St. Vincent's Hospital	480	420	48
St. Martin's Hospital	500	440	50
St. Ignace's Hospital	520	460	52
St. Basil's Hospital	540	480	54
St. Constantine's Hospital	560	500	56
St. Helena's Hospital	580	520	58
St. Ursula's Hospital	600	540	60
St. Agatha's Hospital	620	560	62
St. Ursula's Hospital	640	580	64
St. Clare's Hospital	660	600	66
St. Francis' Hospital	680	620	68
St. Rose's Hospital	700	640	70
St. Thome's Hospital	720	660	72
St. Vincent's Hospital	740	680	74
St. Martin's Hospital	760	700	76
St. Ignace's Hospital	780	720	78
St. Basil's Hospital	800	740	80
St. Constantine's Hospital	820	760	82
St. Helena's Hospital	840	780	84
St. Ursula's Hospital	860	800	86
St. Agatha's Hospital	880	820	88
St. Ursula's Hospital	900	840	90
St. Clare's Hospital	920	860	92
St. Francis' Hospital	940	880	94
St. Rose's Hospital	960	900	96
St. Thome's Hospital	980	920	98
St. Vincent's Hospital	1000	940	100
St. Martin's Hospital	1020	960	102
St. Ignace's Hospital	1040	980	104
St. Basil's Hospital	1060	1000	106
St. Constantine's Hospital	1080	1020	108
St. Helena's Hospital	1100	1040	110
St. Ursula's Hospital	1120	1060	112
St. Agatha's Hospital	1140	1080	114
St. Ursula's Hospital	1160	1100	116
St. Clare's Hospital	1180	1120	118
St. Francis' Hospital	1200	1140	120
St. Rose's Hospital	1220	1160	122
St. Thome's Hospital	1240	1180	124
St. Vincent's Hospital	1260	1200	126
St. Martin's Hospital	1280	1220	128
St. Ignace's Hospital	1300	1240	130
St. Basil's Hospital	1320	1260	132
St. Constantine's Hospital	1340	1280	134
St. Helena's Hospital	1360	1300	136
St. Ursula's Hospital	1380	1320	138
St. Agatha's Hospital	1400	1340	140
St. Ursula's Hospital	1420	1360	142
St. Clare's Hospital	1440	1380	144
St. Francis' Hospital	1460	1400	146
St. Rose's Hospital	1480	1420	148
St. Thome's Hospital	1500	1440	150
St. Vincent's Hospital	1520	1460	152
St. Martin's Hospital	1540	1480	154
St. Ignace's Hospital	1560	1500	156
St. Basil's Hospital	1580	1520	158
St. Constantine's Hospital	1600	1540	160
St. Helena's Hospital	1620	1560	162
St. Ursula's Hospital	1640	1580	164
St. Agatha's Hospital	1660	1600	166
St. Ursula's Hospital	1680	1620	168
St. Clare's Hospital	1700	1640	170
St. Francis' Hospital	1720	1660	172
St. Rose's Hospital	1740	1680	174
St. Thome's Hospital	1760	1700	176
St. Vincent's Hospital	1780	1720	178
St. Martin's Hospital	1800	1740	180
St. Ignace's Hospital	1820	1760	182
St. Basil's Hospital	1840	1780	184
St. Constantine's Hospital	1860	1800	186
St. Helena's Hospital	1880	1820	188
St. Ursula's Hospital	1900	1840	190
St. Agatha's Hospital	1920	1860	192
St. Ursula's Hospital	1940	1880	194
St. Clare's Hospital	1960	1900	196
St. Francis' Hospital	1980	1920	198
St. Rose's Hospital	2000	1940	200
St. Thome's Hospital	2020	1960	202
St. Vincent's Hospital	2040	1980	204
St. Martin's Hospital	2060	2000	206
St. Ignace's Hospital	2080	2020	208
St. Basil's Hospital	2100	2040	210
St. Constantine's Hospital	2120	2060	212
St. Helena's Hospital	2140	2080	214
St. Ursula's Hospital	2160	2100	216
St. Agatha's Hospital	2180	2120	218
St. Ursula's Hospital	2200	2140	220
St. Clare's Hospital	2220	2160	222
St. Francis' Hospital	2240	2180	224
St. Rose's Hospital	2260	2200	226
St. Thome's Hospital	2280	2220	228
St. Vincent's Hospital	2300	2240	230
St. Martin's Hospital	2320	2260	232
St. Ignace's Hospital	2340	2280	234
St. Basil's Hospital	2360	2300	236
St. Constantine's Hospital	2380	2320	238
St. Helena's Hospital	2400	2340	240
St. Ursula's Hospital	2420	2360	242
St. Agatha's Hospital	2440	2380	244
St. Ursula's Hospital	2460	2400	246
St. Clare's Hospital	2480	2420	248
St. Francis' Hospital	2500	2440	250
St. Rose's Hospital	2520	2460	252
St. Thome's Hospital	2540	2480	254
St. Vincent's Hospital	2560	2500	256
St. Martin's Hospital	2580	2520	258
St. Ignace's Hospital	2600	2540	260
St. Basil's Hospital	2620	2560	262
St. Constantine's Hospital	2640	2580	264
St. Helena's Hospital	2660	2600	266
St. Ursula's Hospital	2680	2620	268
St. Agatha's Hospital	2700	2640	270
St. Ursula's Hospital	2720	2660	272
St. Clare's Hospital	2740	2680	274
St. Francis' Hospital	2760	2700	276
St. Rose's Hospital	2780	2720	278
St. Thome's Hospital	2800	2740	280
St. Vincent's Hospital	2820	2760	282
St. Martin's Hospital	2840	2780	284
St. Ignace's Hospital	2860	2800	286
St. Basil's Hospital	2880	2820	288
St. Constantine's Hospital	2900	2840	290
St. Helena's Hospital	2920	2860	292
St. Ursula's Hospital	2940	2880	294
St. Agatha's Hospital	2960	2900	296
St. Ursula's Hospital	2980	2920	298
St. Clare's Hospital	3000	2940	300
St. Francis' Hospital	3020	2960	302
St. Rose's Hospital	3040	2980	304
St. Thome's Hospital	3060	3000	306
St. Vincent's Hospital	3080	3020	308
St. Martin's Hospital	3100	3040	310
St. Ignace's Hospital	3120	3060	312
St. Basil's Hospital	3140	3080	314
St. Constantine's Hospital	3160	3100	316
St. Helena's Hospital	3180	3120	318
St. Ursula's Hospital	3200	3140	320
St. Agatha's Hospital	3220	3160	322
St. Ursula's Hospital	3240	3180	324
St. Clare's Hospital	3260	3200	326
St. Francis' Hospital	3280	3220	328
St. Rose's Hospital	3300	3240	330
St. Thome's Hospital	3320	3260	332
St. Vincent's Hospital	3340	3280	334
St. Martin's Hospital	3360	3300	336
St. Ignace's Hospital	3380	3320	338
St. Basil's Hospital	3400	3340	340
St. Constantine's Hospital	3420	3360	342
St. Helena's Hospital	3440	3380	344
St. Ursula's Hospital	3460	3400	346
St. Agatha's Hospital	3480	3420	348
St. Ursula's Hospital	3500	3440	350
St. Clare's Hospital	3520	3460	352
St. Francis' Hospital	3540	3480	354
St. Rose's Hospital	3560	3500	356
St. Thome's Hospital	3580	3520	358
St. Vincent's Hospital	3600	3540	360
St. Martin's Hospital	3620	3560	362
St. Ignace's Hospital	3640	3580	364
St. Basil's Hospital	3660	3600	366
St. Constantine's Hospital	3680	3620	368
St. Helena's Hospital	3700	3640	370
St. Ursula's Hospital	3720	3660	372
St. Agatha's Hospital	3740	3680	374
St. Ursula's Hospital	3760	3700	376
St. Clare's Hospital	3780	3720	378
St. Francis' Hospital	3800	3740	380
St. Rose's Hospital	3820	3760	382
St. Thome's Hospital	3840	3780	384
St. Vincent's Hospital	3860	3800	386
St. Martin's Hospital	3880	3820	388
St. Ignace's Hospital	3900	3840	390
St. Basil's Hospital	3920	3860	392
St. Constantine's Hospital	3940	3880	394
St. Helena's Hospital	3960	3900	396
St. Ursula's Hospital	3980	3920	398
St. Agatha's Hospital	4000	3940	400
St. Ursula's Hospital	4020	3960	402
St. Clare's Hospital	4040	3980	404
St. Francis' Hospital	4060	4000	406
St. Rose's Hospital	4080	4020	408
St. Thome's Hospital	4100	4040	410
St. Vincent's Hospital	4120	4060	412
St. Martin's Hospital	4140	4080	414
St. Ignace's Hospital	4160	4100	416
St. Basil's Hospital	4180	4120	418
St. Constantine's Hospital	4200	4140	420
St. Helena's Hospital	4220	4160	422
St. Ursula's Hospital	4240	4180	424
St. Agatha's Hospital	4260	4200	426
St. Ursula's Hospital	4280	4220	428
St. Clare's Hospital	4300	4240	430
St. Francis' Hospital	4320	4260	432
St. Rose's Hospital	4340	4280	434
St. Thome's Hospital	4360	4300	436
St. Vincent's Hospital	4380	4320	438
St. Martin's Hospital	4400	4340	440
St. Ignace's Hospital	4420	4360	442
St. Basil's Hospital	4440	4380	444
St. Constantine's Hospital	4460	4400	446
St. Helena's Hospital	4480	4420	448
St. Ursula's Hospital	4500	4440	450
St. Agatha's Hospital	4520	4460	452
St. Ursula's Hospital	4540	4480	454
St. Clare's Hospital	4560	4500	456
St. Francis' Hospital	4580	4520	458
St. Rose's Hospital	4600	4540	460
St. Thome's Hospital	4620	4560	462
St. Vincent's Hospital	4640	4580	464
St. Martin's Hospital	4660	4600	466
St. Ignace's Hospital	4680	4620	468
St. Basil's Hospital	4700	4640	470
St. Constantine's Hospital	4720	4660	472
St. Helena's Hospital	4740	4680	474
St. Ursula's Hospital	4760	4700	476
St. Agatha's Hospital	4780	4720	478
St. Ursula's Hospital	4800	4740	480
St. Clare's Hospital	4820	4760	482
St. Francis' Hospital	4840	4780	484
St. Rose's Hospital	4860	4800	486
St. Thome's Hospital	4880	4820	488
St. Vincent's Hospital	4900	4840	490
St. Martin's Hospital	4920	4860	492
St. Ignace's Hospital	4940	4880	494
St. Basil's Hospital	4960	4900	496
St. Constantine's Hospital	4980	4920	498
St. Helena's Hospital	5000	4940	500
St. Ursula's Hospital	5020	4960	502
St. Agatha's Hospital	5040	4980	504
St. Ursula's Hospital	5060	5000	506
St. Clare's Hospital	5080	5020	508
St. Francis' Hospital	5100	5040	510
St. Rose's Hospital	5120	5060	512
St. Thome's Hospital	5140	5080	514
St. Vincent's Hospital	5160	5100	516
St. Martin's Hospital	5180	5120	518
St. Ignace's Hospital	5200	5140	520
St. Basil's Hospital	5220	5160	522
St. Constantine's Hospital	5240	5180	524
St. Helena's Hospital	5260	5200	526
St. Ursula's Hospital	5280	5220	528
St. Agatha's Hospital	5300	5240	530

NAME OF INSTITUTION.	INSURED.				UNINSURED.						
	Males.	Females.	Total.	Average period in Residence.		Males.	Females.	Children under 16.	Total.	Average period in Residence.	
				Wks.	Dys.					Wks.	Dys.
<b>SANATORIA.</b>											
Cheshire Joint Sanatorium, Market Drayton	157	109	266	18	1	29	49	—	78	17	5
Wrenbury Hall Colony, nr. Nantwich	69	—	69	25	5	3	—	—	3	30	1
Eastby Sanatorium, Skipton, Yorks.	—	—	—	—	—	—	—	19	19	31	4
Liverpool Sanatorium, Kingswood, Frodsuam	4	2	6	20	—	—	5	20	25	17	5
	230	111	341			32	54	39	125		
<b>PULMONARY HOSPITALS.</b>											
Hyde Pavilion, Hyde	71	—	71	19	1	8	—	—	8	30	5
Sealand Pavilion, near Chester	5	1	6	25	6	—	3	—	3	20	2
Baguley Sanatorium, Timperley	6	4	10	19	2	1	—	—	1	30	6
Crewe Pavilion, Crewe	6	—	6	4	4	—	—	—	—	—	—
Mount Pleasant Hospital, Liverpool	13	14	27	12	4	1	23	1	25	13	3
Hefferston Grange San., Weaverham	19	15	34	18	3	1	27	—	28	12	1
	120	34	154			11	53	1	65		
<b>GENERAL HOSPITALS.</b>											
War Memorial Hospital, Congleton	—	2	2	7	5	—	1	2	3	7	3
Albert Infirmary, Winsford	1	—	1	2	4	—	—	5	5	4	4
District Infirmary, Ashton-u-Lyne	—	1	1	5	1	—	—	4	4	11	4
General Infirmary, Macclesfield	1	—	1	13	2	—	—	12	12	9	5
Royal Infirmary, Manchester	3	5	8	4	1	—	3	2	5	3	3
Royal Infirmary, Chester	4	3	7	3	5	2	3	12	17	4	2
Cottage Hospital, Runcorn	—	2	2	5	2	—	—	5	5	6	2
Royal Infirmary, Liverpool	1	—	1	1	6	—	—	—	—	—	—
Warrington Infirmary, Warrington	1	—	1	11	6	—	—	2	2	3	2
General Hospital, Altrincham	—	—	—	—	—	—	—	3	3	2	4
Stockport Infirmary, Stockport	—	—	—	—	—	—	—	2	2	1	3
Hoyle Cottage Hospital, Hoyle	—	2	2	7	1	—	—	—	—	—	—
	11	15	26			2	7	49	58		
<b>SPECIAL INSTITUTIONS FOR CHILDREN.</b>											
Royal Liverpool Children's Hospital, Myrtle Street	—	—	—	—	—	—	—	6	6	3	5
Leasowe Hospital for Children, Leasowe	—	—	—	—	—	—	—	54	54	33	—
Heswall Institution, Heswall	—	—	—	—	—	—	—	40	40	13	5
	—	—	—	—	—	—	—	100	100	—	—
<b>ORTHOPAEDIC HOSPITALS.</b>											
Shropshire Orthopaedic Hospital, Oswestry	16	6	22	19	—	16	3	27	46	15	5
North Staffs Cripples Aid Society, Hartshill	—	—	—	—	—	—	—	2	2	41	1
	16	6	22			16	3	29	48		
<b>CONVALESCENT HOMES.</b>											
Royal Alexandra Hospital, Rhyl	—	6	6	12	4	—	—	19	19	23	—
Children's Convalescent Home, West Kirby	—	—	—	—	—	—	—	13	13	31	5
	—	6	6			—	—	32	32		
<b>SKIN HOSPITALS.</b>											
Manchester and Salford Skin Hospital	2	2	4	9	2	1	2	4	7	6	5
	2	2	4			1	2	4	7		
<b>TOTAL IN-PATIENTS</b>	379	174	553			62	119	254	435		
<b>OUT-PATIENTS AT VARIOUS CLINICS AND HOSPITALS</b>											
<b>TOTAL OUT-PATIENTS</b>	22	28	50			6	42	91	139		
<b>TOTAL ALL INSTITUTIONS</b>	401	202	603			68	161	345	574		



Table showing the actual number of Deaths from Tuberculosis during the past eighteen years:—

Year.	Pulmonary.	Non-Pulmonary.	Total. All forms.
1914	445	210	655
1915	469	208	677
1916	510	167	677
1917	494	177	671
1918	548	196	744
1919	452	140	592
1920	454	124	578
1921	388	139	527
1922	418	132	550
1923	344	144	488
1924	362	150	512
1925	412	98	510
1926	367	122	489
1927	363	125	488
1928	381	118	499
1929	358	107	465
1930	347	91	438
1931	370	68	438

The 1931 figures are made up as follows:—

	Male.	Female.	Total.
Pulmonary	195	175	370
Non-Pulmonary	43	25	68
	<u>238</u>	<u>200</u>	<u>438</u>

#### Death Rates, 1931.

All forms of Tuberculosis, .64 per 1,000 of population.

Pulmonary Tuberculosis .54 per 1,000 of population.

Non-Pulmonary Tuberculosis, .10 per 1,000 of population.

The figures for the five preceding years are as under:

Year.	Pulmonary.	Non-Pulmonary.	All Forms.
1926	0.55	0.18	0.73
1927	0.55	0.18	0.73
1928	0.57	0.17	0.74
1929	0.53	0.16	0.69
1930	0.51	0.13	0.64

TABLE SHOWING DEATHS FROM TUBERCULOSIS AT DIFFERENT PERIODS OF LIFE  
IN THE ADMINISTRATIVE COUNTY OF CHESTER, DURING THE YEAR 1931.

		Aggregate of Urban Districts.										Aggregate of Rural Districts.												
Sex.	All Ages.	0—	1—	2—	5—	15—	25—	35—	45—	55—	65—	75—	All Ages.	0—	1—	2—	5—	15—	25—	35—	45—	55—	65—	75—
		M	146	—	2	—	—	20	25	33	34	20		10	2	49	—	—	—	2	6	8	8	15
F	121	—	1	—	6	33	37	22	9	9	4	—	54	—	—	—	2	8	19	10	5	9	1	—
M	29	2	5	7	4	1	4	3	1	1	1	—	14	2	1	2	3	1	1	1	2	1	—	—
F	19	3	4	1	2	4	3	—	1	1	—	—	6	—	1	2	2	1	—	—	—	—	—	—

Pulmonary Tuberculosis. {

Non-pulmonary Tuberculosis. {

Statement giving Particulars of Specimens Examined  
 1 County Public Health Laboratory during the Years 1920  
 0 1931 inclusive.

Sputums.		Urines.		Glands.		Pleural Effusions.		Blood.		Pus.		Urethral Discharge.		Hair for Ringworm.		Milk.	
Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.
292	1054	..	2	..	..	..	..	..	..	..	2	..	..	..	1	..	1
459	1264	2	5	1	..	..	3	*1	..	..	..	..	..	..	..	..	..
511	1379	..	5	2	..	..	1	..	..	..	1	†1	..	3	4	..	2
604	1359	3	9	..	..	..	2	..	..	1	1	..	..	..	2	..	3
528	1548	1	2	1	3	..	2	..	..	..	1	..	..	2	12	..	1
516	1566	..	6	..	..	..	2	..	..	..	..	..	..	9	21	..	1
505	1451	..	4	..	..	..	1	..	..	..	2	..	..	8	8	..	..
415	1790	..	1	..	..	..	1	..	..	..	..	..	..	6	5	..	..
463	1790	..	6	..	..	..	2	..	..	1	4	..	..	7	6	..	..
484	1717	..	4	..	..	..	1	..	..	1	1	..	..	7	5	..	..
560	1763	1	6	..	..	..	1	..	..	..	3	..	..	3	6	..	..
664	1926	..	4	..	..	..	1	..	..	1	1	..	..	48	69	..	..

No.	Skin.		Fæces for Worms.		Ulcer of Lip.		Fallopian Tubes.		Swab from Mouth.		Cerebro Spinal Fluid.		Tonsils for T.B.		Fæces for T.B.		Total Number of Specimens.
	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	
0	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1353
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1735
2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1910
3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1984
4	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	2102
5	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	2123
6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1979
7	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	2219
8	..	..	..	..	..	..	..	..	..	..	2	..	1	1	2	..	2285
9	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	2221
0	..	..	..	..	..	..	..	..	..	..	1	..	..	..	2	..	2346
1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	2718

\* Film appeared to be one of secondary Anæmia.

† Gonococci present.

Table showing number of specimens examined during 1931 in respect of patients resident in Institutions.

SANATORIA.	Neg.	Pos.
Wrenbury Hall ...	289	226
Borough Hospital, Hyde, T.B. Pavilion ...	24	68

#### OTHER INSTITUTIONS.

Clatterbridge Infirmary ...	28	4
Lake Hospital, Ashton-under-Lyne ...	30	6
Bucklow Union Hospital, Knutsford ...	8	1
The Hospital, Port Sunlight ...	3	2
Cottage Hospital, Ellesmere Port ...	1	—
Altrincham General Hospital ...	6	1
Cottage Hospital, Neston ...	1	—
Tarporley War Memorial Cottage Hospital	1	—
Cottage Hospital, Hoylake ...	1	—
Dutton Infirmary ...	4	1
Whitby Hospital ...	3	—
Arclid Infirmary ...	—	2
Albert Infirmary, Winsford ...	1	—
National Children's Home, Frodsham ..	1	—

#### OTHER DISTRICTS.

Stone (Staffs.) ...	1	—
Warrington (Lancs.) ...	2	—
Latchford Without (Lancs.) ...	1	—

#### TOTAL NUMBER OF SPECIMENS EXAMINED DURING 1931.

	(25.6 %) Positive	1926	664
Sputums for T.B. Examinations.			
Urines ...	4	—	
Pleuritic Fluid ...	1	—	
Pus ...	1	1	
Faeces ...	4	—	
Hair for Ringworm ...	69	48	
	<hr/>	<hr/>	<hr/>
	2005	713	
	<hr/>	<hr/>	<hr/>

2005 Negatives. 713 Positives. Total Number Examined 2718.

Twenty-five specimens were examined by concentration method after being negative on examination by the ordinary microscopical method and Tubercle Bacilli were found to be present in 1 case.

Specimens of sputum, etc., are examined, free of charge, and reports forwarded to the Medical Practitioner and District Tuberculosis Officer in each case.

No action was taken by the County Council under Section 62 of the Public Health Act, 1925, which permits the Council to apply for an Order to compulsorily remove a person suffering from Tuberculosis to Hospital.

## Section VI.--Maternity and Child Welfare.

### Number of Midwives in Practice.

There were 336 midwives who notified their intention to practise in the County Area during 1931. Classified these are as follows:—

- 250 Actually practising; 221 trained; 29 untrained.
- 21 Monthly Nurses.
- 20 Midwives living outside the County Area.
- 14 In Institutions.
- 28 Had no cases.
- 3 Died.

There would appear to be fewer trained midwives practising but this is not so. In districts where the midwifery is done by a district midwife, frequently owing to changing of staff, two or more nurses notify from these areas. This year in order to find out how many midwives actually practise, these districts are counted as having one midwife although more than one may have notified.

There are still five midwives practising who are unable to take their patients temperature, but they have very few cases without a doctor.

The County Nursing Association is responsible for more than half the trained midwives who are practising in the County area. The standard of midwifery of this Association is very good and the midwives who have been inspected twice during this year have been found most satisfactory and keenly interested in their work.

The County has four subsidised midwives working at Lymm, Tarvin, Hollingworth and Sandbach. The above midwives with one exception are granted £60 per annum and allowed to keep their own fees. At Sandbach the midwife (who is the only trained one there) is allowed an extra grant as she is unable to make a livelihood without.

### Compensation to Midwives.

Fifteen midwives were compensated during the year for loss of fees owing to poverty or patient being removed to hospital for confinement.

### Inspection of Midwives.

The inspection of midwives have been carried out as in previous years by the Lady Assistant Medical Officer, assisted by some of the Health Visitors. All trained midwives are inspected by the Lady Assistant Medical Officer.

Total visits to midwives	...	...	...	...	975
Formal inspections	...	...	...	...	832
Inquiries into Stillbirths, Puerperal Fevers, Infant deaths, etc.	...	...	...	...	143

The bags and registers of the Midwives on the whole have been found satisfactory. There is still a tendency not to feel any anxiety if the temperature is below 100.4 level (which according to the Central Midwives' Board, if maintained for 24 hours necessitates sending for medical help) and to disregard quickening of the pulse if not associated with a temperature.

The public is slowly but undoubtedly becoming more educated to the fact that the care of the expectant mother is a part of midwifery. This is a great help to the midwife in carrying out her ante-natal care of her patients. She sees her patients regularly, tests the urine, and obtains medical advice for her case if any indication of such should arise. She also has a wonderful opportunity of helping the mother to make adequate preparations for the actual confinement or the new arrival.

The midwife is in a sense the forerunner of the Health Visitor, is an essential part of the Public Health Service and much depends on her for its ultimate success.

There are still some handy women practising who seem to be preferred and encouraged by the medical profession.

The Cheshire Midwives' Association (affiliated to the Midwives Institute) was formed in 1926, and had its sixth Annual Meeting in June, 1931. Dr. Charles Wilson (Chairman of the Maternity and Child Welfare Committee) presided at this meeting and a representative of the Midwives' Institute gave a specially interesting and instructive address.

During the session 1930—1931, a series of 7 lectures were given at each of the seven branches. In some of the branches the lectures were very well attended, but in others the midwives did not attend as they might have done. The members of the various branches record their very grateful thanks to all lecturers who so kindly give their services.

In 1931-32, two midwives, one an independent midwife and one a County Nursing Association nurse attended a month's Refresher Course, at Plaistow Maternity Hospital. The Refresher Course was much appreciated by those privileged to attend.

The following notifications have been received under the Central Midwives' Board Rules:—

	Artificial Feeding.	Source of Infection.	Ophthalmia Neonatorum.	Laying out of the Dead.	Death of a Child.	Still-Births	Medical Help.
Trained	40	53	63	61	10	50	1656
Untrained	2	6	4	—	1	10	166

### Puerperal Pyrexia.

Ninety-five cases of Puerperal Pyrexia were notified during 1931. This includes 2 abortions. The day of onset was as follows:—

1st day	2 cases
2nd day	9 „
3rd day	12 „
4th day	16 „
5th day	17 „
6th day	12 „
7th day	9 „
8th day	8 „
9th day	2 „
11th day	1 case
12th day	2 cases
14th day	1 case
15th day	3 cases
18th day	1 case
18th day	1 „

Number proved to be Puerperal Fever 24.

There were 5 cases of Pyrexia notified of cases already in Hospital. Thirty-three were sent into hospital for

treatment. Nine of these cases were seen by Consultants. Of the 95 cases notified six of the mothers died. Disinfection of the midwives in contact with the above cases was carried out in 65 cases.

The following are some of the causes other than Puerperal Fever to which the raised temperature was attributed.

Influenza, 12 cases.  
 Phlebitis, 3 cases.  
 Retained Membranes, 1 case.  
 Bronchitis, 8 cases.  
 Mastitis, 10 cases.  
 Pneumonia, 2 cases.  
 Kidney Disease, 6 cases.  
 Pyelitis, 3 cases.  
 Cystitis, 3 cases.  
 Scarlet Fever, 2 cases.  
 Pelvic Cellulitis, 1 case.  
 Septic Perinaeums, 1 case.  
 Tuberculosis, 1 case.  
 Constipation, 4 cases.

### **Nursing and Maternity Homes.**

At the end of 1931 there were 47 Nursing and Maternity Homes registered. Two of the Maternity Homes that were registered previously have been given up during 1931, and there were nine new Homes registered.

151 visits of inspection have been paid to these Homes. Every courtesy has been extended to the Inspector and suggestions for improvements have been acted upon.

In four of the Homes there have been no cases and in the remaining 43 there have been 497 births and 475 medical and surgical cases.

### **Births, etc., Visitations by the Health Visitors.**

With regard to the visiting of Births under the Notification of Births Act, the arrangements have been similar to those of previous years. On receipt of a notification the information is immediately forwarded to the Health Visitor of the district in which the birth has occurred.

The mothers and babies are visited as soon after the tenth day as possible.

During the first year the babies are supposed to be visited once a month but during 1931 the number of visits to babies under one year has worked out at an average of 8 per child. It is difficult to get a better average than this owing to the many tasks that fall to the lot of the Health Visitor. As well as all Maternity and Child Welfare work she is responsible for school work which may include a Minor Ailment Clinic, and Tuberculosis Dispensary and Home Visiting in connection with it. It is much better that these duties should be combined in one nurse so that there is only one Visitor in the homes.

It is in the homes that the Health Visitor can do her best work; she becomes the friend and advisor of the mother and has a wonderful opportunity of intimate instruction in the ways of healthy living.

Children over one year old are visited quarterly and twice yearly visits are paid to the children over 2 years of age and under school age.

The Staff now consists of a Lady Assistant Medical Officer and 37 whole time Health Visitors.

The following is a summary of the visits paid by the Lady Medical Officer and Health Visitors during 1931.

First visits to infants under 1 year	...	...	5,752
Revisits to children under 1 year (Ophthalmia, etc.)	...	...	32,636
Revisits to children over 1 year	...	...	47,084
Visits to Expectant Mothers	...	...	1,259
Visits to Midwives	...	...	975

### **The Method of Feeding Babies.**

The following table shows the method of feeding during the first six months of their life of children aged over 6 months and under one year old. There were 846 Rural cases and 1,264 Urban cases.

	BREAST.					MIXED.					ARTIFICIAL.					
	1927 %	1928 %	1929 %	1930 %	1931 %	1927 %	1928 %	1929 %	1930 %	1931 %	1927 %	1928 %	1929 %	1930 %	1931 %	
1st Month— Rural	...	80	84	72	74	80	6	4	3	3	1	14	12	25	23	19
Urban	...	80	80	73	73	72	3	5	4	3	5	17	17	23	24	23
2nd Month— Rural	...	78	78	70	71	74	7	5	3	3	2	20	17	27	26	24
Urban	...	76	76	70	69	67	3	6	4	3	5	21	18	26	28	28
3rd Month— Rural	...	71	73	66	65	70	9	6	4	5	3	20	21	30	30	27
Urban	...	73	70	66	63	60	4	7	5	6	6	23	23	29	31	34
4th Month— Rural	...	66	70	61	60	63	10	8	5	6	6	22	23	34	34	31
Urban	...	66	65	62	59	53	6	9	6	7	8	28	26	32	34	39
5th Month— Rural	...	64	67	60	57	55	12	8	6	7	9	22	25	34	36	36
Urban	...	64	64	60	56	50	7	10	7	8	9	29	26	33	36	41
6th Month— Rural	...	60	65	57	55	52	13	9	8	8	10	27	26	35	37	37
Urban	...	62	61	57	55	46	8	12	8	8	10	30	27	35	37	44

From the foregoing table it is shown that at the end of 6 months, 52 per cent. of rural mothers and 46 per cent. urban mothers were able to feed their babies entirely on the breast, 10 per cent. had breast feeding supplemented with artificial feeding and 37 per cent. Rural babies and 44 per cent. urban babies were artificially fed.

Every effort is made to encourage the mothers to breast feed their infants and it is very disappointing to find, as in 1930, a further reduction in the percentage of mothers able to carry out this natural function.

It has been laid to the charge of Infant Welfare Centres that they increase the number of hand fed infants because the artificially fed children attending the Centre are now much more scientifically fed and consequently healthier than in earlier years. Mothers who are struggling to breast feed seeing the above results are very apt to give up the effort to feed naturally. Every endeavour is made to help the mother to persevere by pointing out the advantage to the child, and in cases of insufficient food, milk is allowed to the mother.

The method of feeding till six months old and health of children at 12 months old is shown below (4,324 cases).

			Good.		Fair		Poor.
			%		%		%
Breast	{ Rural	...	84	...	13	...	3
	{ Urban	...	80	...	16	...	4
Mixed	{ Rural	...	72	...	23	...	5
	{ Urban	...	72	...	22	...	6
Artificial	{ Rural	...	66	...	29	...	5
	{ Urban	...	70	...	24	...	6

### Health of Infants.

The illnesses from which the children between one and two years of age have suffered during the first year of life are shown in the following table:—

		Total.		Birth to 3 months.	3 months to 6 months.	6 months to 9 months.	9 months to 12 months.			
				%	%	%	%			
Respiratory Diseases	...	10%	...	·3	...	·7	...	4	...	5
Convulsions	...	·3%	...	·01	...	·02	...	·13	...	·14
Gastro Enteritis	...	2%	...	·1	...	·2	...	1	...	·7
Measles	...	2%	...	—	...	·2	...	·4	...	1·4
Whooping Cough	...	4%	...	—	...	·5	...	1·5	...	2
Marasmus	...	·3%	...	·2	...	—	...	·1	...	—

### Health of the Older Children.

In the following table the health of the children at 2 years, 3 years, and 4 years respectively, who have been visited during 1931, are shown.

Feeding.	Health. 2 years. 4258 children.			Health. 3 years. 3980 children.			Health. 4 years. 3619 children.		
	Good.	Fair.	Poor.	Good.	Fair.	Poor.	Good.	Fair.	Poor.
Breast—	%	%	%	%	%	%	%	%	%
Rural ...	82	16	2	82	15	3	83	16	1
Urban ...	81	15	4	82	15	3	83	14	3
Mixed—									
Rural ...	70	27	3	79	17	4	72	26	2
Urban ...	75	18	7	75	20	5	74	21	5
Artificially—									
Rural ...	67	30	3	68	7	5	70	26	4
Urban ...	70	24	6	66	29	5	64	30	6

Signs of Rickets (early and late) were in 5.5 per cent. of the children between one and four years of age, 5.2 per cent. were slight and .3 per cent. were marked.

### Deaths of Infants under One Year.

Table giving particulars of deaths of 125 children under one year and over ten days old (75 males, 50 females).

Feeding.	Method of	10 days	3 months	6 months	9 months	12 months
		to 3 months	to 6 months	to 9 months	to 12 months	
Respiratory Diseases ...	Breast ...	13	6	4	6	
	Artificial...	16	4	6	3	
Convulsions ...	Breast ...	3	—	1	—	
	Artificial...	8	—	3	1	
Marasmus ..	Breast ...	1	—	—	—	
	Artificial...	2	—	—	—	
Measles ...	Artificial...	—	—	—	1	
	Breast ...	2	—	—	1	
Whooping Cough	Artificial...	1	—	1	—	
	Breast ...	2	—	—	—	
Gastro-Enteritis...	Breast ...	2	—	—	—	
	Artificial...	2	—	—	1	
Malformations ...	—	10	2	1	—	
	Breast ...	—	1	—	—	
Meningitis ...	Artificial...	—	2	—	2	
	—	—	—	—	—	
Feebleness and Prematurity ...	—	7	—	—	—	
Tubercular Meningitis...	Artificial...	—	—	1	—	
Accidents ...	—	—	1 Scalded	—	—	
Syphilis ...	—	2	—	—	—	
Penpligns ...	—	1	—	—	—	
Intussusception	—	—	1	1	—	
Mastoiditis ...	—	—	1	—	1	
General Sepsis ..	—	1	—	—	—	
Peritonitis ...	—	1	—	—	—	
Enlarged Thyms	—	1	—	—	—	

### Deaths of Older Children.

Table giving particulars of deaths of 65 children (35 males and 30 females).

	1 year to 2 years.	2 years to 3 years.	3 years to 4 years.	4 years to 5 years.
Respiratory Diseases ...	20	3	1	3
Convulsions ...	—	1	—	—
Whooping Cough ...	2	—	—	—
Gastro-Enteritis ...	1	—	—	1
Meningitis ...	6	2	1	—
Tubercular Meningitis ...	3	—	—	—
Diphtheria ...	—	1	3	2
Measles ..	1	—	—	—
Fall ...	2	—	—	—
Scalded ...	1	2	—	—
Accidents, Motor ...	—	1	1	—
Acute Nephritis —	—	1	—	—
Septicæmia ...	—	—	—	1
Heart Disease ...	—	—	—	2
Appendicitis ...	—	—	—	1
Osteomyelitis ...	—	—	—	—
Mastoiditis ...	—	—	—	1

### Deaths of Infants Under Ten Days Old.

The following table gives particulars of deaths of 87 infants under ten days old (51 males and 36 females).

Premature birth ...	25—22	births attended by	Doctor.
	13	”	Midwife.
Atelectasis ...	3—1	”	Doctor.
	2	”	Midwife.
Difficult labour ...	10—10	”	Doctor.
Convulsions ...	8—2	”	Doctor.
	6	”	Midwife.
Malformations ...	14—7	”	Doctor.
	7	”	Midwife.
Internal Hemorrhage ...	2—2	”	Midwife.
Cerebral Hemorrhage ...	3—3	”	Doctor.
Feebleness ...	10—5	”	Doctor.
	5	”	Midwife.
Injury at Birth ...	1—1	”	Doctor.
Meningitis ...	1—1	”	Doctor.

In two of above cases the mothers had been working in a factory during pregnancy. Six of the children were illegitimate births. Among the above deaths there were two twin pregnancies none of whom survived. In 29 cases the babies were first babies.

### Still-births.

The following table gives some particulars of 126 still-births that have been enquired into, viz. (66 males and 60 females).

Born before arrival	...	...	13	Full-time
Prolapse of Cord	...	...	7	Full-time
Ill-health of Mother	...	...	18	Premature
			5	Full-time
Malpresentation or Difficult Labour	...	...	26	Full-time
Unknown cause	...	...	14	Premature
			14	Full-time
History of Shock or accident	...	..	5	Premature
Malformation	...	...	10	Full-time
Placenta Prævia	...	...	6	Premature
Asphyxia	...	...	1	Full-time
Ante-partum Hemorrhage	...	...	3	Premature
Eclampsia	..	...	2	Premature
Hydramnios	...	...	2	Full-time

Thirty-nine of the above cases were first births. In eight cases there was a previous history of more than one miscarriage or still-birth and in 3 cases a history of one miscarriage or still-birth. In two of the three cases the still-birth occurred in the second pregnancy so that two of the mothers had not given birth to a live child. Four of the mothers had worked in a factory during pregnancy and two others had followed other occupations. There were six twin pregnancies—seven of the 12 children were still-births.

### Ophthalmia.

There have been notified 58 cases of inflammation of or discharge from the eyes in new born babies. Forty of the cases were only slight. Most of the cases occurred between the third and fifth days. In 10 cases the birth was attended by a doctor, and 48 cases were attended by midwives. The following is a description of the cases:—

Slight Cases—one eye affected	...	9
both eyes „	...	31
Severe Cases—one eye „	...	6
both eyes „	...	12

Six of the severe cases were treated in hospital and 14 were attended to by Health Visitors. All the cases made a perfect recovery.

### Illegitimate Children.

Special enquiries have been made into the circumstances of 109 illegitimate children born in 1931. In 49 cases the mother was unemployed and in 60 instances the mother was employed. One hundred cases were found to be quite satisfactorily attended to, 9 only fairly satisfactorily cared for and one not satisfactorily looked after. The father was known to be contributing to the child's upkeep in 48 cases and in 5 cases it was impossible to

ascertain. Forty-six fathers made no contributions, and 9 of the parents had since got married. One father died before birth of child.

Forty-nine of the babies were brought up by their mothers, 45 principally by grandmothers, 8 by other relatives, 1 child was adopted, 1 went into an Institution, 1 was lost sight of, and 4 of the children died.

### Expectant Mothers.

During 1931 there were 1,259 visits and revisits paid to expectant mothers. The following interesting points have been noted in 174 of the cases visited during 1931 (the babies being born 1931).

#### Health of Mother.

Good.	Fair.	Poor.
73%	24%	3%

Nine per cent. were advised to seek medical advice, two per cent. urged to do so on account of passing a scanty amount of urine. Eight per cent. suffered from constipation, forty-three per cent. had serious carious teeth and seven per cent. of these cases were noted to be in a very bad condition. Eight of the women had a set or sets of artificial teeth.

94% Normal babies—69% Breast fed for 10 days.  
31% Artificial feeding.

3% Not robust.  
3% Stillborn.

Of the 174 mothers only 2 were primiparae, and 7 of them gave birth to twins.

### Maternity and Child Welfare Centres.

During the Autumn of 1931 the Borough of Stalybridge took over from the County Council the working of their own Maternity and Child Welfare Scheme, and Winsford Urban District transferred their work to the County. In each of these areas there was a centre. The Winsford Centre has been a private house and has been altered to make it suitable as a Health Centre. On the ground floor it has a waiting room, weighing room and doctor's room, these rooms being used for Maternity and Child Welfare work and for Minor Ailment Clinics for school children. On the first floor there is a dentist's operating room, recovery room and accommodation for a resident caretaker. There is also a pram shed at the mothers' entrance.

There were two new centres started during 1931—a weekly one at Wilmslow and a fortnightly one at Romiley. The latter was specially requested as the Romiley mothers were attending the Bredbury Centre which was becoming overcrowded. These centres have both been well attended and evidently much appreciated by the mothers of the districts.

A small voluntary centre was opened at Bowden Infant School. The Health Visitor and Schoolmistress of that district felt there was a need for a mothers and babies Welfare Meeting in that small area. By the help of a voluntary committee this centre was started in the Autumn and has met fortnightly since. Each child is weighed and seen by the Health Visitor. There has been an average attendance of 24 per meeting. It is hoped at some future date the centre may be adopted by the County Council.

There are now 31 centres in the County area, all are County Council Centres with the exception of the above-mentioned and Utkinton—which is maintained by a local lady and is much appreciated by the mothers of the neighbourhood.

The members of the Voluntary Committees at each centre continue to do splendid work. They attend on centre days most faithfully, the staff are truly grateful for the help given, and their kindly interest is much appreciated by the mothers.

### **Dental Treatment.**

During 1931 the Maternity and Child Welfare Committee decided to appoint a dentist and dental nurse to undertake the dental treatment of expectant mothers and children under 5 years of age. By arrangement with the Education Committee this work is undertaken by each of the 8 school dentists devoting one-eighth of his time to this work. The Maternity and Child Welfare Committee pay the cost of one dentist and his nurse. Several children have already received treatment and a few expectant mothers have had extractions, etc. The scheme has been in vogue such a short time that it is too early to make any further report.

### **Cheshire Gold Cross Society.**

During 1931 the Cheshire Gold Cross Society met 3 times in Chester. As explained in previous reports the

object of this Society is to bring the voluntary workers together to discuss difficulties arising in the work of the centres and to exchange ideas, etc. The annual meeting was held at the Castle, Chester, in June, 1931. At this meeting the work of the Competitions was on view, and the shields and pictures won were presented by Dr. Bennett (Medical Officer) to representatives of the successful centres. After the presentations Dr. Bennett gave a very amusing and instructive address which was much appreciated.

### **Free Milk Supplied.**

During 1931 664 expectant mothers, nursing mothers, and babies received free milk through the County's scheme for supplying free milk in necessitous cases. A pint of milk daily, or a tin of dried milk per week has been supplied for varying periods of time depending on the circumstances of the cases. The amount of the weekly income of the applicant is ascertained, the rent paid (the amount of which is deducted from wage) the remaining sum is divided by number in family (parents and children under 14 years of age) and if less than 6/- per head a pint of milk per day is granted for the mother or baby as the case may be.

A list of all cases having free milk is submitted to the clerk of the Public Assistance Committee.

### **Nurse Children (Children Act).**

Anyone receiving a child under 7 years of age for gain must notify to the Medical Officer of Health. All such cases are under the supervision of the Health Visitors who visit them regularly.

Cases leaving for districts outside the County area are notified to the Authorities concerned, and inward transfers received. At the beginning of the year 1931 there were 100 foster parents receiving 143 nurse children and at the end of the same year 107 foster parents receiving 140 nurse children. One nurse child died during 1931. These children are on the whole well looked after by the foster mothers. Quite often it is a very frail little charge that is handed over to the foster mother—one perhaps requiring special skilled attention which the foster mother is quite unable to give.

The remuneration for taking charge of these children is in many cases quite inadequate when it is considered that they have to be housed, fed, sometimes clothed and doctor's

bills paid out of 10/- a week or perhaps less. The foster parent would reasonably expect to get some return for her service, but, in many cases, she must either give her attention free or the children must go short. If it were possible by some scheme to get the amount the poorer of mothers of the children can pay augmented, more of the better type of foster mothers would be attracted to this work.

### Maternity Hospital and Homes.

During 1931 there have been 141 mothers who through the help of the County Maternity and Child Welfare Committee have had their confinements in a Maternity Hospital or Home. Only mothers who through lack of accommodation in their homes, or some expected difficulty in their confinement have been eligible for this assistance. The parents contribute to the cost as much as their circumstances will allow—usually if they are entitled to a Maternity Benefit this amount is claimed.

The confinements have taken place in the following Institutions:—

Liverpool Maternity Home	...	19
Ashton-under-Lyne Infirmary	...	30
Chester Maternity Home	...	6
Clatterbridge	„	4
Macclesfield	„	3
Crewe	„	29
Warrington	„	19
Widnes	„	30
Walton	„	1

### Ante-Natal Schemes.

There are in the County Area 5 Ante-natal Clinics— at one of these (Runcorn) there are fortnightly sessions and the other four have monthly sessions. Each of these clinics is in charge of a specialist. At all of these clinics except Middlewich the work has steadily grown. The midwives as a general rule attend with their patients and are present at the examinations.

	Number of Clinics held.	New Cases.	Number in Attendance.
Congleton	... 11	... 77	... 119
Hoole	... 12	... 55	... 100
Middlewich	... 8	... 12	... 17
Runcorn	... 22	... 109	... 365
Sale	... 12	... —	... —

At Dukinfield there is an arrangement that expectant mothers may attend the Ante-natal Clinic, run in connection with the Ashton-under-Lyne Infirmary.

When the Winsford Urban Council Maternity and Child Welfare was transferred to the County Council it was arranged that its special Ante-natal Scheme should be continued (this scheme was instituted by Dr. Picton, M.O.H., Winsford). Under this scheme, the expectant mother is examined twice during her pregnancy by her own doctor—who sends a full report of his examinations to the County Medical Officer.

The Dr. receives a fee of 10/6d. for all non-insured cases examined.

#### Particulars of Reports Received During 1931.

57 cases examined (child born 1931).

13 cases examined (child not born).

57 cases—30 insured 27 non-insured.

32 primiparae, 25 multiparae.

46 had natural deliveries (11 forceps cases).

2 stillbirths.

1 child deformed died.

1 mother collapsed after confinement and died.

1 case had "albumen" and 8 cases "traces of albumen."

In 5 cases definite pyorrhœa was noted in mouth. One case had septic stumps removed.

It has been arranged to continue the above ante-natal schemes for a year and then to have a conference to discuss the scheme that would best meet the County's need for ante-natal care of the mothers. If the County Council could see its way to adopt Dr. Picton's scheme throughout the County with a few clinics where the doctors could send cases they wished to be seen by a specialist it would certainly bring ante-natal care within the reach of all parturient women. It would also ensure that the doctor who delivers the patient would be responsible for the ante-natal care.

If arrangements could also be made to have post-natal examinations made a great reduction in gynæcological cases would in time take place and consequently a gain in health which would mean also a gain in domestic welfare.

The following is a Report on the work of Runcorn Ante-Natal Clinic for the year 1931 :—

Total Clinics	...	...	...	...	22
New Patients	...	...	...	...	109
Re-visits	...	...	...	...	256
Total Attendances	...	...	...	...	365
Remaining undelivered on 31st December, 1930	...	...	...	...	16
Delivered during 1931	...	...	...	...	89
Remaining undelivered on 31st December, 1931	...	...	...	...	16
Total deliveries in 1931	...	...	...	...	105
Non pregnant cases	...	...	...	...	4

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*Methods of Delivery—*

Normal vertex	...	...	...	...	90
Normal breech	...	...	...	...	2
Complicated breech	...	...	...	...	2
Forceps	...	...	...	...	6
Caesarean section	...	...	...	...	3
Spontaneous abortion	...	...	...	...	1
Induced abortion	...	...	...	...	1

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*Still Births—*

Intrauterine death	...	2	
Died during labour	...	2	(1 impacted breech,
Malformations	...	2	1 prolapsed cord).
		6	

*Maternal Complications—*

Toxaemia of Pregnancy	3
Placenta Praevia	1
Post-partum hæmorrhage	1

*Hospital Cases—*

Admitted to Liverpool Maternity Hospital :—

For Caesarean Section	...	...	...	2
For Disproportion—normal delivery	...	...	...	3
„ „ forceps „	...	...	...	1
For Treatment of Toxaemia	...	...	...	4
Total	...	...	...	10

St. Mary's Hospital, Manchester, for Caesarean Section ... 1

Widnes Maternity Home—normal delivery ... 1

The following is a list of the Welfare Centres:—

	Hoylake (1 day per week).	Runcorn (2 days per week).	Stalybridge (2 days per week).	Sale (2 days per week).	Dukinfield (2 days per week).	Nantwich (1 day per week).	Congleton (1 day per week).	Lymm (1 day per week).	Neston (1 day per week).	Northwich Rural (1 day per week).			
Consultations held ...	824	2163	1871	2466	1832	853	2004	1107	520	749			
Total Attendances made...	2277	5484	5032	5275	6220	2312	2812	1583	2411	1984			
Average Attendance per Meeting ...	45	58	68	54	64	47	58	34	52	38			
Number of New Cases (1931)	126	274	182	229	192	130	119	60	86	134			
	Middlewich (1 day per week).	Whaley Bridge (Fortnightly).	Marple (Fortnightly)	Heswall (Fortnightly)	Owley Wood (Fortnightly)	Utkinton (Fortnightly)	Bollington (Fortnightly)	Disley (Fortnightly)	Sandbach (Fortnightly)	Hollingworth (Fortnightly)	Compstall (Fortnightly)	Hazel Grove (1 day per week).	Bredbury (Fortnightly)
Consultations held ...	1105	525	611	235	411	195	506	366	696	506	500	898	843
Total Attendances made...	1488	1303	1061	835	762	575	1120	311	1077	748	782	2171	1202
Average Attendance per Meeting ..	31	56	42	32	31	23	41	13	43	31	35	43	50
Number of New Cases (1931)	69	42	52	62	54	5	43	28	73	35	28	71	50
	Stockton Heath (Fortnightly)	Hoole (1 day per week).	Malpas (Fortnightly).	Cheadle (Fortnightly).	Odd Rode (Fortnightly).	Romiley (Fortnightly).	Wilmslow (1 day per week).	Chester Castle (Fortnightly)	Winsford (1 day per week).				
Consultations held ...	433	741	328	454	241	58	368	36	95				
Total Attendances made...	828	1865	405	1329	277	90	642	42	607				
Average Attendance per Meeting ...	33	38	16	51	11	30	35	10	6				
Number of New Cases (1931)	61	138	36	105	37	45	158	15	20				

### Maternal Mortality.

The Maternal Mortality Rate for the County for 1931 was 3.17 per 1,000 births as compared with 4.61 the figures for 1930 and 3.94 for the Country as a whole.

It is pointed out in the Annual Report of the Chief Medical Officer of the Ministry of Health that in the last 30 years the general death rate has been reduced by one-third, the Tuberculosis mortality by one-third, and the Infant mortality by more than one-half, while the Maternal Mortality has remained stationary.

During the past 4 years a committee has been sitting with a view to investigating the reason for this state of affairs and their conclusions have now been published. Great stress has been laid upon the necessity for

- (1) Adequate ante-natal supervision.
- (2) Skilled Midwifery and proper attention at the bedside.
- (3) Hospital treatment when necessary.
- (4) Vigilant post-natal care.

It is pointed out that where this is being achieved the mortality is a quarter of the national average.

The figures for this County compare very favourably with other counties and show that much is being done on the lines mentioned above.

Of the 62 Administrative Counties, including London, Cheshire comes 12th on the list.

The marked decrease in the Mortality rate for this year is most gratifying.

## Section VII.--Rivers Pollution Prevention, Sewerage and Sewage Disposal.

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### MUNICIPAL BOROUGHS.

#### CONGLETON BOROUGH.

Following an Inquiry held on February 25th, 1931, the Ministry of Health sanctioned a scheme for the reconstruction of surface water sewers, the sewerage of Mossley area to a new pumping station, and the reconstruction of the sewage disposal works. The work is in progress.

#### CREWE BOROUGH.

Crewe sewage works consist of screens, detritus tanks, sedimentation tanks, percolating filters, humus tanks, and storm tanks. Periodical samples of sewage effluents from these works have been reported as being satisfactory.

#### DUKINFIELD BOROUGH.

#### STALYBRIDGE BOROUGH.

The sewage of these districts is received and treated at the works of the Dukinfield and Stalybridge Joint Sewerage Board. The works consist of precipitation tanks followed by percolating filters and humus tanks, or by bio-aeration, and storm water tanks. These works are supervised by the Mersey and Irwell Joint Committee.

#### HYDE BOROUGH.

The sewage works consist of septic tanks, percolating filters, humus tanks, and storm filters. The works are supervised by the Mersey and Irwell Joint Committee. The Borough Engineer is engaged in preparing a scheme of extensions to the sewage works.

#### MACCLESFIELD BOROUGH.

The sewage works consist of sedimentation tanks, percolating filters, humus tanks, land irrigation, small bio-aeration plant, and storm tanks. Work is in progress on the reconstruction of the main sewer and extensions to the sewage works. These works are supervised by the Mersey and Irwell Joint Committee.

## URBAN DISTRICTS.

## ALDERLEY EDGE URBAN DISTRICT.

Sewage is treated by means of sedimentation tanks and land irrigation. The works are supervised by the Mersey and Irwell Joint Committee.

## ALSAGER URBAN DISTRICT.

Sewage is treated by means of sedimentation tanks and percolating filters. The attention of the Local Authority was called to the overtaxed condition of the works following which the construction of new detritus tanks, one sewage filter, and additional sludge drying lagoons has been put in hand.

## ALTRINCHAM URBAN DISTRICT.

The sewage works consist of sedimentation tanks and land irrigation, and are supervised by the Mersey and Irwell Joint Committee.

## BEBINGTON AND BROMBOROUGH URBAN DISTRICT.

With the exception of a small works dealing with groups of houses situated at a distance from the main sewerage system, the whole of the sewage of this district is discharged into the tidal portion of the River Mersey.

## BOLLINGTON URBAN DISTRICT.

The sewage works consist of sedimentation tanks and bacterial filters, humus tanks, and storm tanks. No complaints have been received from the Mersey and Irwell Rivers Board during 1931 as regards the sewage effluent.

## BOWDON URBAN DISTRICT.

The sewage works consist of sedimentation tanks and land filters. The irrigation area has been extended during the year. The works are supervised by the Mersey and Irwell Joint Committee.

## BREDBURY AND ROMILEY URBAN DISTRICT.

Bredbury Sewage Works consist of precipitation tanks, percolating filters, humus tanks, and storm tanks. Romiley Sewage Works consist of sedimentation tanks, continuous filters and land, storm tanks and filters.

Both these works are supervised by the Mersey and Irwell Joint Committee.

A consulting engineer has been appointed to consider a comprehensive scheme for the districts of Bredbury and Romiley.

#### BUGLAWTON URBAN DISTRICT.

The sewage of the Urban District is received and treated at the disposal works of Congleton Municipal Borough.

#### CHEADLE AND GATLEY URBAN DISTRICT.

The existing sewage works consist of precipitation tanks, storm tanks, and land filters, and are supervised by the Mersey and Irwell Joint Committee.

The Urban District Council have powers under the Manchester Corporation Act, 1930, to connect the sewage to the Manchester Corporation main sewers. Notices have been served under the Act, of the Council's intention to carry this into effect.

#### COMPSTALL URBAN DISTRICT.

There are no sewage disposal works for this district, the existing sewers discharge into a large power lodge owned by the Calico Printer's Association. There are no water closets in the district, the majority of the houses being provided with pail closets. The Urban District is in the area controlled by the Mersey and Irwell Joint Committee.

#### ELLESMERE PORT AND WHITBY URBAN DISTRICT.

The existing works at Ellesmere Port consist of covered septic tanks and contact beds, designed to deal with a population of 7,000, and are now greatly overtaxed and in an unsatisfactory condition. The final effluent is discharged into the tidal portion of the river Mersey.

A Ministry of Health inquiry was held on January 22nd, 1930, respecting an application for a loan of £40,200 for the purpose of reconstructing the existing works at Ellesmere Port, the construction of new sewers and sewage works at Little Stanney, consisting of sedimentation tanks and bacterial filters, designed for a population of 20,000. The final effluent will be discharged into the river Gowy. Owing to objections on account of the possibility of flooding, the scheme had to be revised and a subsequent application for a loan of £117,475 was sanctioned after a second inquiry, held on February 4th, 1931. Work is in progress.

A joint sewer draining the north-west portion of Ellesmere Port and the adjoining portion of the Wirral Rural District discharges into the tidal waters of the river Mersey.

#### HALE URBAN DISTRICT.

Seventy-five per cent. of the sewage is treated at the Council's own sewage works, which are of the Activated Sludge Type.

Sewage from the northern part of the district is received and treated at the sewage works of the Altrincham Urban District Council, by agreement.

A portion of the Parish of Ringway in the Bucklow Rural District is drained to the Hale Sewage Works, by agreement.

The above works are supervised by the Mersey and Irwell Joint Committee.

#### HANDFORTH URBAN DISTRICT.

This Urban District has no sewerage system or sewage disposal works. A Ministry of Health Inquiry was held on September 18th, 1931, into an application for a loan of £19,090 in respect of a sewerage scheme for the Urban District.

Owing to the failure of the Wilmslow Urban District Council to proceed with the reconstruction of their Northern Sewage Disposal Works, which were intended to receive and treat the sewage of Handforth, under agreement, the Minister of Health informed the Handforth Urban District Council that he is not in a position to proceed with the consideration of Handforth sewerage scheme until it has been decided what facilities will be provided for the reception and treatment of the sewage.

The decision of the Wilmslow Urban District Council to postpone the reconstruction of their Northern Sewage Works was due to the reduction of the grant from the Unemployment Grants Committee.

#### HAZEL GROVE AND BRAMHALL URBAN DISTRICT.

Bramhall Sewage Works consist of septic tanks, precipitation tanks, continuous filters and lagoons, and storm tanks. A new sewage works has been constructed in Bongs Valley, Offerton, for the Hazel Grove drainage

area, at a cost of £20,000. The new works supersede the old works at Fogg Bank, Offerton, which are now abandoned. The new works involved the extension of a 24-inch outfall sewer, and consist of screening and detritus Chamber, sedimentation tanks, percolating filters, humus tanks, sludge drying beds, storm tanks and irrigation area for storm water.

These works are supervised by the Mersey and Irwell Joint Committee.

#### HOLLINGWORTH URBAN DISTRICT.

The sewage works consist of precipitation tanks, continuous filters and land irrigation. The works are under the supervision of the Mersey and Irwell Joint Committee.

A scheme for remodelling the sewage works has been sanctioned by the Ministry of Health. Work is in progress.

#### HOOLE URBAN DISTRICT.

With the exception of about forty houses at Piper's Ash which are drained into a small septic tank and filter, the whole of the sewage of the Urban District is received and treated at the sewage works of Chester Corporation.

#### HOYLAKE AND WEST KIRBY URBAN DISTRICT.

The sewage of Hoylake is disposed of by discharge to sea at Dove Point, Great Meols, where there are two sewage tanks which are emptied two hours after each ebb tide.

There are two outfalls at West Kirby—one north and one south of the Marine Lake—consisting of tank sewers with sea valves. Sewage is discharged two hours after ebb tide.

#### KNUTSFORD URBAN DISTRICT.

The new sewage disposal works consist of sedimentation tanks, percolating filters, humus tanks, storm tanks, and land irrigation. The works are supervised by the Mersey and Irwell Joint Committee.

#### LYMM URBAN DISTRICT.

Sewage is treated at the Sow Brook Works by precipitation tanks and land treatment, and at the Statham Works by land irrigation only. The irrigation area at both works has been extended during the year. About one mile of 9-inch sewer extension has been completed.

The sewage works are supervised by the Mersey and Irwell Joint Committee.

#### MARPLE URBAN DISTRICT.

Sewage from the greater portion of the district is dealt with at the Council's Sewage Works, consisting of sedimentation tanks, continuous filters, land irrigation and storm tanks. A small works consisting of a septic tank and  $2\frac{1}{2}$  acres of land has recently been completed and is now in operation for the Strines portion of the district.

The sewage from the north-westerly part of the district is treated at the Ludworth, Mellor, and Low Marple Joint Sewerage Board's Works at Compsall, which consist of sedimentation tanks, continuous filters, land irrigation, and storm tanks.

All these works are supervised by the Mersey and Irwell Joint Committee.

#### MIDDLEWICH URBAN DISTRICT.

The sewage works, which consist of Sedimentation tanks, primary and secondary filter beds, are seriously affected by subsidence due to brine pumping. Repairs to the tanks and filters have been effected, and the effluent outfall drain has been relaid.

#### MOTTRAM-IN-LONGENDALE URBAN DISTRICT.

The sewage works consist of precipitation tanks, continuous filters, and land irrigation. The samples of effluent examined by the Mersey and Irwell Joint Committee have all been reported as being satisfactory.

A part of the district, which is in a different drainage area, has no sewage disposal works, the sewage being discharged into streams.

#### NANTWICH URBAN DISTRICT.

A comprehensive sewerage and sewage disposal scheme for the township of Nantwich has been prepared. Plans are shortly being submitted to the Ministry of Health, together with an application for a loan.

#### NESTON AND PARKGATE URBAN DISTRICT.

The sewage works consist of sedimentation tanks, storm tanks, humus tanks, and percolating filters. The final effluent is discharged into the river Dee estuary.

Work is nearing completion on the scheme of sewer extensions at Parkgate and the Wirral Colliery area, and the provision of additional tanks, sewage filter, and sludge drying lagoons at the sewage works.

#### NORTHWICH URBAN DISTRICT.

A Ministry of Health Inquiry was held on October 6th, 1931, into an application for a loan of £19,042 in respect of a scheme of sewer extensions and the reconstruction of the Winnington (Joint) Sewage Works, which serve the Urban District and a portion of the Northwich Rural District. The work is in progress.

#### RUNCORN URBAN DISTRICT.

Most of the sewers are connected to a large intercepting sewer which passes under the ship canal at the western boundary of the district, and discharges into the Mersey estuary.

#### SALE URBAN DISTRICT.

A large scheme which includes extensions to sewers and the construction of a complete new sewage disposal works has been sanctioned by the Ministry of Health. The work is in progress.

#### SANDBACH URBAN DISTRICT.

The Ministry of Health have sanctioned a scheme for sewer extensions and the construction of a complete new sewage disposal works. The work is in progress.

#### TARPORLEY URBAN DISTRICT.

The sewage of the Urban District is treated in a sedimentation tank and irrigated on land which is of a sandy nature. The final effluent is satisfactory.

#### WILMSLOW URBAN DISTRICT.

A scheme for extension of sewers in the Dean Row area and the reconstruction of the Northern Sewage Disposal Works was the subject of a Ministry of Health Inquiry on February 26th, 1931.

Owing to the reduction of the grant from the Unemployment Grants Committee the Urban District Council subsequently decided not to proceed with the scheme at present.

#### WINSFORD URBAN DISTRICT.

The sewage works consist of screens and detritus tanks and large cinder filter beds situated adjoining a large "flash" into which the final effluent is discharged.

## YEARDSLEY-CUM-WHALEY URBAN DISTRICT.

The sewage of the Urban District is received and treated at the disposal works of the Whaley Bridge and District Joint Sewerage Board. Extensions to filters, humus tanks, and storm tanks have been completed during the year.

The works are under the supervision of the Mersey and Irwell Joint Committee.

## RURAL DISTRICTS.

### BUCKLOW RURAL DISTRICT.

Dunham Massey Sewage Works. A scheme for extending these works has been submitted to the Ministry of Health.

Mobberley Sewage Works consist of Sedimentation tanks, percolating filters, humus tanks, and storm tanks.

Timperley Sewage Works consist of sedimentation tanks, continuous filters, and land treatment..

The works are supervised by the Mersey and Irwell Joint Committee.

### CHESTER RURAL DISTRICT.

The parishes of Dodleston, Eccleston, and Pulford are provided with sewers and sewage disposal works, which are maintained satisfactorily. Following representations by the County Medical Officer of Health the Eccleston Sewage Works have been reconstructed by the Eaton Estate.

A Ministry of Health Inquiry was held on August 18th, 1931, respecting a scheme which included a joint sewage disposal works for the south-west portion of the city of Chester and the parishes of Blacon, Great Saughall and Little Saughall in the Chester Rural District. The Rural District Council subsequently withdrew from this scheme on account of the reduction of the grant from the Unemployment Grants Committee.

The attention of the Rural District Council has been called to the necessity for a sewerage and sewage disposal scheme for the parish of Littleton, where development is taking place, and also the parishes of Blacon, Great Saughall and Little Saughall.

## CONGLETON RURAL DISTRICT.

Elworth Sewage Works consist of sedimentation tanks, percolating filters, humus tanks, and storm tanks.

Malkin's Bank Sewage Works consist of sedimentation tanks and a percolating filter.

Holmes Chapel Sewage Works and Mount Pleasant, Mow Cop, Sewage Works consist of sedimentation tanks with land irrigation. The attention of the Rural District Council has been called to the necessity for improving both these works.

The sewerage and sewage disposal scheme for the parish of Church Lawton is now completed, and various properties are being connected to the sewers.

## DISLEY RURAL DISTRICT.

The sewage works consist of precipitation tanks, percolating filters, humus tanks and storm tanks. The works are supervised by the Mersey and Irwell Joint Committee.

## MACCLESFIELD RURAL DISTRICT.

Poynton Sewage Works consist of sedimentation tanks and land filters. Chelford Sewage Works, which serve about thirty houses, also consist of sedimentation tanks and land filters.

Arrangements with adjoining Local Authorities are in force for the reception and treatment of sewage from houses situated in the parishes of Eaton, Nether Alderley, Butley, Chorley, Prestbury, Taxal, Upton, Tytherington, and part of Woodford—approximately 540 houses—being provided for in this manner.

A number of complaints have been received by the County Medical Officer of Health with regard to unsatisfactory conditions prevailing in the parish of Woodford—a developing residential area—on account of the absence of an adequate sewerage and sewage disposal system. The Rural District Council have instructed a consulting engineer to prepare a comprehensive sewerage and sewage disposal scheme for this area.

A Ministry of Health Inquiry was held on January 30th, 1931, respecting sewage disposal works for the parish of Rainow, and for the Rural District Council's housing sites at Sutton and Gawsworth.

The scheme for Gawsworth has been completed.

## MALPAS RURAL DISTRICT.

A Ministry of Health Inquiry was held on March 18th, 1931, into an application for a loan of £2,000 for the purpose of sewer extensions and improvements to one of the three existing sewage works. Following representations at the Inquiry by the County Medical Officer of Health, an amended scheme was subsequently approved which provided for the construction of a complete new sewage works—the two smaller existing works being superseded—and the reconstruction of the works in the Wrexham Road, which serve another drainage area.

The scheme is nearing completion.

## NANTWICH RURAL DISTRICT.

Work is nearing completion on a scheme costing £22,000, which includes the sewerage of Shavington and Wistaston parishes, and the reconstruction of the sewage works at Wistaston.

Haslington Sewage Works, consist of sedimentation tanks, storm tanks, humus tanks, percolating filters and land filters. Owing to development in the district these works are seriously overtaxed. The attention of the Rural District Council has been called to the necessity for extensions, and a scheme is being prepared for the reconstruction of the works.

The townships of Audlem, Bunbury and Wybunbury are in serious need of sewerage systems, also the parish of Church Coppenhall, where the conditions are very unsatisfactory.

Sewer extensions have been carried out at Broad Lane, Stapeley, Crewe Road, Willaston, and Birchin Lane.

## NORTHWICH RURAL DISTRICT.

The Rural District Council have provided works of sewerage and sewage disposal for the undermentioned parishes, which are maintained in a satisfactory condition:

Parishes.	Public Sewage		Area in Acres.	No. of Houses.	Population.
	Sewerage Works.	Disposal Works.			
Acton ...	1	1	1176	139	516
Anderton ...	2	1	525	93	329
Barnton ...	2	2	759	829	3198
Clive ...	1	1	482	51	178
Comberbach ...	1	1	370	106	388
Davenham ...	3	3	495	174	644
Eddisbury ...	1	1	2085	107	402
Hartford ...	3	2	917	397	1429
Kinderton ...	2	1	1998	107	432
Leftwich ...	2	2	721	290	1021
Little Budworth ...	2	2	3867	136	568
Lostock Gralam ...	2	1	1731	447	1928
Marston ...	1	0	840	143	530
Moulton ...	1	1	474	270	1220
Rudheath ...	1	1	2297	680	2733
Stanthorne ...	1	0	1113	80	290
Weaverham ...	3	3	3622	803	3178
Wincham ...	3	2	1246	268	1003
Winnington ...	1	*1	578	315	1268

\* Northwich Urban and Northwich Rural Joint Outfall Works.

Parish of Hartford. A Ministry of Health Inquiry was held on August 19th, 1931, respecting an application for a loan of £7,604 for sewer extensions at Hartford, and the reconstruction of Hartford Sewage Works. The work is in progress.

Parishes of Lostock Gralam and Rudheath. A Ministry of Health Inquiry was held on August 20th, 1931, into an application for a loan of £6,126 for the reconstruction of a defective outfall sewer, and sewer extensions in the parishes of Lostock Gralam and Rudheath.

The work is partly completed.

#### RUNCORN RURAL DISTRICT.

Parish of Helsby. A Ministry of Health Inquiry was held on March 26th, 1931, into an application for a loan of £7,100 for the reconstruction of Helsby Sewage Works. The work is nearing completion.

'Moore Sewage Works consist of sedimentation tanks and percolating filters.

Parishes of Appleton, Grappenhall, Latchford, Stockton Heath and Walton Inferior.—A comprehensive sewerage and sewage disposal scheme is being prepared for the above-mentioned parishes. The scheme has been held up pending the decision on the Warrington Extension Bill, 1931, which provided for the inclusion of these parishes in the County Borough of Warrington. The Select Committee of the House of Lords having decided

that the parishes are to remain in the Rural District, the scheme is now being completed for submission to the Ministry of Health.

Liverpool Sanatorium, Frodsham. Attention has been called to the necessity for improving the existing sewage disposal works.

#### TARVIN RURAL DISTRICT.

The parishes of Barton, Churton, Farndon, Tattenhall and Waverton are without any facilities for sewerage or sewage disposal.

In July, 1931, the Public Health Committee of the County Council instructed a communication to be sent to the Rural District Council, urging them to prepare schemes for these parishes. A consulting sewage engineer has been appointed by the Rural District Council to prepare sewerage and sewage disposal schemes for the above mentioned parishes.

Following representations by the County Medical Officer of Health, the Eaton Estate have put in hand the reconstruction of Aldford Village Sewage Works, Saigh-ton Village Sewage Works, and a small works at Eccles-ton Ferry Farm.

#### TINTWISTLE RURAL DISTRICT.

The sewage works consist of precipitation tanks, percolating filters, humus tanks and storm tanks.

Sewage from a portion of the Matley district is received and treated at the sewage works of the Stalybridge and Dukinfield Joint Sewerage Board, which are supervised by the Mersey and Irwell Joint Committee.

#### WIRRAL RURAL DISTRICT.

Eastham Sewage Works consist of sedimentation tanks and bacterial filters, and deal with the sewage of a part of Eastham, part of Willaston, also Childer Thornton and Hooton. Notwithstanding improvements carried out during 1930 these works are still overtaxed and causing stream pollution.

Willaston Sewage Works consist of sedimentation tanks and a filter bed which deal with the sewage of Willaston Village. The works are not producing a satisfactory effluent, and the attention of the Local Authority has been called to the necessity for improving the same.

Thornton Hough Sewage Works are operating at full capacity and are not producing a satisfactory effluent.

The impending dissolution of the Wirral Rural District Council has created difficulties as regards the reconstruction of these works.

### **Manufacturing Trade Wastes.**

#### **BIDDULPH (STAFFS.) URBAN DISTRICT.**

Forge Colour Works, Biddulph. These works are situated close to the Cheshire—Staffordshire boundary. The trade waste, which is discharged into a tributary of the River Dane, receives treatment in precipitation tanks. No unsatisfactory conditions have been met with during the year.

#### **CHESTER RURAL DISTRICT.**

Balderton Milk Factory. Trade waste is treated by means of a sedimentation tank and coke filter.

#### **BUGLAWTON URBAN DISTRICT.**

Silversprings Dye Works. Trade waste is effectively treated by means of sedimentation tanks and filters, the final effluent being satisfactory.

#### **CONGLETON RURAL DISTRICT.**

British Soda Works, Elworth. The trade waste from these works contains much spent lime, which is settled out in a large "flash" on the company's premises. The overflow from the "flash" into the river Wheelock causes no pollution.

I.C.I. Chemical Works, Malkin's Bank. The discharge of trade waste into the river Wheelock from these works has now ceased owing to the closing down and dismantling of the works.

#### **MIDDLEWICH URBAN DISTRICT.**

I.C.I. Chemical Works. Trade waste from the various stills is treated in large settlement reservoirs before being discharged into the River Wheelock. No unsatisfactory conditions were met with during the year.

#### **MALPAS RURAL DISTRICT.**

Hampton Milk Factory. Trade waste is treated by means of a tank and filter. The attention of the Company was called to the unsatisfactory effluent. Improvements to the filter are in hand.

## NANTWICH RURAL DISTRICT.

United Dairies Milk Factory, Calveley. The trade waste from this factory was formerly discharged without any preliminary treatment into the sewer of the Rural District Council and treated by means of a small installation which was originally intended to deal with domestic sewage from some 25 houses at Calveley. Following complaints of stream pollution the United Dairies have constructed two large sedimentation tanks in which the trade waste is treated with alumina ferric and pumped through a filter plant, the final effluent being discharged into the Council's sewer. The reconstruction of the Council's installation is under consideration.

Trufood Factory, Wrenbury. Trade waste is treated by means of a sedimentation tank and coke filter. No unsatisfactory conditions have been met with during the year.

## STAFFORDSHIRE.

Bignall Hill Colliery, Talke; Birchenwood Colliery, Kidsgrove and Mary Hill Colliery, Kidsgrove.—Periodical visits of inspection have been made to these collieries where effluents from coal washing and chemical by-product plants are discharged into streams flowing into Cheshire. No abnormal pollution was reported during the year.

## Section VIII.--Water Supplies.

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### MUNICIPAL BOROUGHS.

#### CONGLETON MUNICIPAL BOROUGH.

The scheme for augmenting the water supply has been completed during the year. Improvements have been carried out at Corda Well, which include the cleaning out and renewal of choked pipe lines from the springs to the reservoir, construction of washouts, etc., on pipe lines and the provision of a reinforced concrete covering to the existing reservoir.

Four samples of water were examined chemically and two samples bacteriologically, all of which were satisfactory.

## CREWE MUNICIPAL BOROUGH.

Water is supplied to the town by the L. M. & S. Railway Company, obtained from deep wells situated at Whitmore (Staffs.)

During the year 291,783,900 gallons were supplied to the Corporation for the use of the town. Property belonging to the railway Company is supplied directly, and not through the Corporation.

The quantity supplied by the Corporation is approximately 18.5 gallons per head per day.

## DUKINFIELD MUNICIPAL BOROUGH.

Water is supplied to Dukinfield by the Ashton-under-Lyne, Stalybridge and Dukinfield (District) Waterworks.

The quantity of water supplied to Dukinfield for the year ending 25th March, 1931, was:—

1. For domestic purposes—149,577,600 gallons.
2. For trade purposes—24,542,400 gallons.
3. For trade purposes (waste water from dis-used gathering grounds)—31,910,000 gallons.

Consumption per head per day 29.2 gallons.

## HYDE MUNICIPAL BOROUGH.

Water for human consumption is obtained from the Manchester Corporation reservoirs. The average consumption of water per head of the population, calculated for the year, is approximately 20 gallons per day.

## MACCLESFIELD MUNICIPAL BOROUGH.

The work of covering in the service reservoir was completed during the year. Two hundred and eighty-three yards of water mains have been laid.

## STALYBRIDGE MUNICIPAL BOROUGH.

Water is supplied by the Ashton-under-Lyne, Stalybridge and Dukinfield (District) Waterworks.

## URBAN DISTRICTS.

### ALDERLEY EDGE URBAN DISTRICT.

The district is supplied with water by the Stockport Corporation.

### ALSAGER URBAN DISTRICT.

The quality of the water has been satisfactory and no complaints have been received. There has been no diminution in the yield from the boreholes, and an adequate supply of water has been maintained.

### ALTRINCHAM URBAN DISTRICT.

The Urban District is supplied with water by the Manchester Corporation.

### BEBINGTON AND BROMBOROUGH URBAN DISTRICT.

The district is supplied with water by the West Cheshire Water Board.

### BOLLINGTON URBAN DISTRICT.

The water supply is obtained from boreholes in the township of Rainow, some three miles distant. The supply is constant. Three samples of water were submitted for bacteriological examination during the year, all of which were satisfactory.

### BOWDON URBAN DISTRICT.

The Urban District is supplied with water by Manchester Corporation.

### BREDBURY AND ROMILEY URBAN DISTRICT.

Water is obtained in bulk through meters from Stockport Corporation. Owing to rapid developments in the district there are times when a shortage of water is very evident. This will be remedied when the Stockport Corporation complete the laying of the 12-inch water main to connect up to the district. During the year 2,290 yards of four inch main, and 180 yards of three inch main were laid.

Complaints were made to the County Medical Officer of Health by residents of Castle Hill, Bredbury, an outlying portion of the Urban District, respecting a spring water supply for some twelve houses, and the unreasonable distance of the same from the houses. The matter has been referred to the Local Authority.

### BUGLAWTON URBAN DISTRICT.

The Council's water supply is obtained from a borehole. The supply has been ample during the year; all parts of the district are now supplied, with the exception of a few outlying farms and cottages which are dependent upon wells.

### CHEADLE AND GATLEY URBAN DISTRICT.

The Urban District is supplied with water by Manchester Corporation, and is satisfactory both in quantity and quality.

### COMPSTALL URBAN DISTRICT.

The Urban portion of the district is served by two reservoirs which hold a twenty-eight days' supply. The upper portion of the district is supplied by wells.

### ELLESMERE PORT AND WHITBY URBAN DISTRICT.

The district is supplied with water by the West Cheshire Water Board. There is a storage tower at Whitby with a capacity of 200,000 gallons. Extensions to the water mains are keeping pace with development.

### HALE URBAN DISTRICT.

The Urban District is supplied with water by Manchester Corporation.

### HANDFORTH URBAN DISTRICT.

### HAZEL GROVE AND BRAMHALL URBAN DISTRICT.

Both these Urban Districts are supplied with water by Stockport Corporation.

### HOLLINGWORTH URBAN DISTRICT.

The source of supply, which is owned by the Council, is an upland spring from the Arnfield Clough. The water is soft, slightly acid, and has plumbo-solvent properties, but no trace of lead has ever been detected on analysis.

There are two reservoirs of 20,000 and 500,000 gallons capacity respectively.

### HOOLE URBAN DISTRICT.

A constant supply of water is provided to all parts of the Urban District by the Chester Waterworks Company.

### HOYLAKE AND WEST KIRBY URBAN DISTRICT.

The water supply is obtained from the Council's boreholes at Grange Hill and Newton, and is satisfactory both in quantity and quality.

### KNUTSFORD URBAN DISTRICT.

The Urban District is supplied with water by the Knutsford Light and Water Company, the source of the supply being the Pedley and Marthall Brooks. The water is passed through sand gravity filters, mechanical pressure filters, and finally subjected to chlorination. Five samples of water were submitted for analysis during the year, two of which were unsatisfactory. The Health Committee of the Knutsford Urban District Council made an inspection of the gathering grounds and streams, as a result of which several points of contamination were discovered. The matter has been referred to the County Medical Officer of Health with a view to the contamination being removed.

### LYMM URBAN DISTRICT.

The water undertaking is owned by the Urban District Council. Water is obtained from Artesian Wells in Lymm and is laid on to 90 per cent. of the houses in the district.

A sample submitted for chemical and bacteriological examination shewed that though fairly hard, the water is pure, and is every way fit for drinking and domestic purposes.

### MARPLE URBAN DISTRICT.

The Urban District is supplied with water by Stockport Corporation.

### MIDDLEWICH URBAN DISTRICT.

The water supply is obtained from boreholes in the new red sandstone at Delamere. The reservoir capacity is 200,000 gallons. The water is satisfactory both in quality and quantity.

### MOTTRAM-IN-LONGDENDALE URBAN DISTRICT.

The Urban District is well supplied with water by Manchester Corporation.

### NANTWICH URBAN DISTRICT.

The source of supply is Baddiley Mere. The new plant consisting of a battery of pressure mechanical filters with associated apparatus for treating the water with alumina, lime, and chlorine, is discharging a satisfactory filtrate.

## NESTON &amp; PARKGATE URBAN DISTRICT.

The water undertaking is owned by the Urban District Council; the supply being obtained from boreholes. The water is satisfactory both in quality and quantity.

## NORTHWICH URBAN DISTRICT.

The Northwich and Winsford Urban, and Northwich Rural District Councils have, with the approval of the Ministry of Health, set up a Joint Water Committee and coupled together their trunk mains to enable the resources of each water undertaking to be made full use of for domestic and industrial requirements. Three sources of supply are jointly available—the Northwich Urban and Northwich Rural supplies being obtained from boreholes in the new red sandstone at Delamere, and the Winsford Urban supply from the springs at Little Budworth and a spring-fed lake at Oakmere.

The whole area is provided with a plentiful supply of pure water.

## RUNCORN URBAN DISTRICT.

Water is obtained from the Vyrnwy main of the Liverpool Corporation. A further supply is available from a deep well at Runcorn Heath—the authority for this supply being the Runcorn District Water Board.

The Runcorn well water is chlorinated before being pumped into the storage reservoirs where it is mixed with an equal quantity of the Liverpool water. There are two storage reservoirs with a capacity of one million gallons and two million gallons respectively, which is equivalent to three days' supply.

Chemical and bacteriological tests of the water have been reported as being satisfactory.

## SALE URBAN DISTRICT.

The Urban District is well supplied with water by Manchester Corporation.

## SANDBACH URBAN DISTRICT.

The water undertaking is owned by the Local Authority, the supply being obtained from boreholes at Taxmere. For many years Clarke's process has been in operation, and the treated water has been satisfactory but somewhat hard, and lime deposit has taken place chiefly in the distribution mains nearest the water tower. With a

view to reducing the hardness and preventing this deposit in the mains an experiment with sodium aluminate was commenced in April which has met with some success, and is being continued.

#### YEARDSLEY-CUM-WHALEY URBAN DISTRICT.

The chief supplies of water are upland waters. An ample and constant supply has been available during the year, and satisfactory as regards quality.

#### RURAL DISTRICTS.

##### BUCKLOW RURAL DISTRICT.

Portions of the district are supplied with water by the water undertakings of the Manchester and Stockport Corporations.

The parish of Plumbley is supplied with water by the Northwich Rural District Council.

The second part of the Mobberley scheme was commenced in the latter part of the year, which includes the laying of about eight miles of mains. A large part of the parish will be supplied, but there will still be a portion of the parish unprovided for.

Supplies for other parishes are under consideration. During the year 2,331 yards of water mains have been laid in the district.

##### CHESTER RURAL DISTRICT.

The portion of the Rural District adjacent to the City of Chester is supplied with water by the Chester Waterworks Company.

The parishes of Dunham Hill, Hapsford, Ince and Elton are supplied from the Helsby reservoir of the Runcorn Rural District Council's water undertaking.

Other parishes are served by the West Cheshire Water Board and Wrexham Waterworks.

##### CONGLETON RURAL DISTRICT.

Following recommendations by the Ministry of Health after the Inquiry held on September 24th, 1930, a revised scheme was subsequently approved by the Ministry after a further Inquiry held on August 27th, 1931. This scheme will provide water for thirteen parishes. The sinking of the second borehole is well advanced and the construction of the first reservoir is in hand.

During the year 3,984 yards of water mains have been laid in the district.

#### DISLEY RURAL DISTRICT.

The district is supplied with water by Stockport Corporation.

#### MACCLESFIELD RURAL DISTRICT.

The parishes of Nether Alderley, Chorley, Great Warford, Lyme Handley, Prestbury, Newton, Mottram St Andrew, Woodford, and Poynton are supplied by Stockport Corporation.

A Ministry of Health Inquiry was held on January 16th, 1931, respecting a scheme costing £3,300 for extending the water supply from the Stockport Corporation reservoir at Nether Alderley to the parishes of Upton, Fallibroome, Prestbury, Mottram St Andrew, Tytherington, Butley and Adlington.

This scheme has recently been completed.

A number of houses in other parishes are supplied with water by the Macclesfield Corporation, Bollington Urban District Council, and Buglawton Urban District Council.

The Macclesfield Rural District Council are the owners of a supply derived from springs near Oldfield, including two service reservoirs. A number of houses at Taxal are supplied from this source.

#### MALPAS RURAL DISTRICT.

The township of Malpas is supplied with water from the Vyrnwy Main of the Liverpool Corporation. The parish of Bickley, part of Norbury, and a farm and cottages at Oldcastle are also supplied from this source.

#### NANTWICH RURAL DISTRICT.

Practically three-quarters of the District is supplied with water by means of connections with the L. M. & S. Railway Company's main or with the Liverpool Corporation's Vyrnwy Aqueduct. One or two Parishes are supplied by Alsager Urban District Council's water undertaking.

A Ministry of Health Inquiry was held on March 10th, 1931, respecting a scheme costing £128,613 to supply forty-two parishes in the Rural District from boreholes situated at Bearstone in the County of Salop. The sanction of the Ministry was obtained, and work is in progress.

Following a communication from the Bickerton Parish Council to the County Council respecting the necessity for a piped supply for the parish, the matter was investigated by the County Medical Officer. A representation was made to the Rural District Council who have given instructions for the preparation of a scheme.

#### NORTHWICH RURAL DISTRICT.

A scheme has been submitted to the Ministry of Health for supplying the Parishes of Eddisbury, Delamere, Oakmere, and parts of Little Budworth and Marton which at present are supplied from the Liverpool Corporation main.

#### RUNCORN RURAL DISTRICT.

Thirteen parishes are supplied with water by the Warrington Corporation, including the parishes of Whitley Superior and Whitley Inferior, the supply for these parishes being sanctioned by the Ministry of Health following an Inquiry which was held on February 25th, 1930.

Eight parishes are supplied with water by the Liverpool Corporation main from Vyrnwy. Two parishes are supplied by the Northwich Rural District Council.

Water undertakings owned by the Council consist of boreholes in the new red sandstone at Helsby, Frodsham and Manley, together with the necessary pumping plant and storage reservoirs.

The proposed scheme—mentioned in the Report for 1930—to extend Frodsham and Helsby water so as to supply Newton-by-Frodsham and Kingsley has been abandoned. It is now proposed to supply these parishes from the Liverpool Corporation Aqueduct which passes through Kingsley. The consent of the Liverpool Corporation has been obtained.

A Ministry of Health Inquiry was held on April 23rd 1931, respecting a scheme costing £25,000 for extending the existing works at Frodsham and Helsby.

## TARVIN RURAL DISTRICT.

The parishes of Aldford, Buerton, Farndon, Churton-by-Aldford, are supplied with water by the Wrexham Waterworks.

Certain parishes adjacent to the City of Chester are supplied by the Chester Waterworks Company. Other parishes are supplied from the Vyrnwy Aqueduct of the Liverpool Corporation.

A scheme is being prepared for supplying the parishes of Kelsall and Tarvin from the Northwich Rural District Council's water undertaking.

The District Medical Officer of Health reports that the parishes of Burwardsley, Broxton, Tilston, Tattenhall, Newton and Shocklach are in need of an improved water supply.

## TINTWISTLE RURAL DISTRICT.

The district is supplied with water by the Tintwistle Water Company, and the Stamford Estate, Ashton-under-Lyne. The source of supply is moorland springs.

## WIRRAL RURAL DISTRICT.

The parishes of Caldy, Frankby, Grange, Greasby and Saughall-Massie now receive their supply from the West Cheshire Water Board under the Act of that Board dated 1927, so that the Rural Area with the exception of the portion of Bidston still included in it gets its entire supply from West Cheshire. In quantity and quality the supply is good. There are occasional complaints about hardness and sometimes deficient supplies are found due to gradually occluded service pipes.

## MINISTRY OF HEALTH INQUIRIES.

During the year 1931 Cheshire Local Authorities (excluding County Boroughs) applied to the Ministry of Health for loans amounting to £295,000 in respect of sewerage and sewage disposal schemes, and £243,913 for works of water supply.

Several of the sewage disposal schemes are the result of representations by the County Medical Officer of Health calling attention to the necessity for improving existing sewage disposal works.

In many of these schemes Local Authorities have taken advantage of the grants from the Unemployment Grants Committee. These grants, however, were reduced about

September, and have subsequently been discontinued. This has had the effect of holding up the sewerage and sewage disposal schemes of the Chester Rural District Council, Handforth Urban District Council and Wilmslow Urban District Council, and also the water scheme of the Runcorn Rural District Council.

The attention of the Ministry of Health was called to the fact that their Engineering Inspectors frequently intimate after consultation with the Local Authority's Engineer at a Local Inquiry, that certain modifications of a sewerage or sewage disposal scheme should be carried out if the scheme is to receive the sanction of the Ministry. As, however, the Ministry takes no further steps to satisfy themselves that their Inspectors' suggestions are carried out, and in view of the fact that the County Council are responsible for the supervision of Local Authorities' sewage disposal works and the administration of the Rivers Pollution Prevention Acts, the Engineering Branch of the Ministry of Health were requested to supply the County Council with details of modifications of sewerage and sewage disposal schemes in the County, in order that they may be able to satisfy themselves that the modifications or alterations of the scheme required by the Ministry are in fact being carried out. The Minister of Health has arranged to furnish information of the amendment of any scheme of sewerage and sewage disposal after a Local Inquiry has been held with respect to it.

MINISTRY OF HEALTH INQUIRIES  
held in the County during 1931, at which the  
Department was represented.

Date.	Local Authority.	Amount of Loan.	Description of Scheme.
16/1/1931	Macclesfield Rural District Council.	£3,300	Works of water supply for the contributory places of Upton, Fallibroome, Prestbury, Motram St. Andrew, Tytherington, Butley, and Adlington. Supplementary supply from the Stockport Corporation reservoir at Nether Alderley.
30/1/1931	Macclesfield Rural District Council.	£2,100 £1,300 £1,600	Construction of a new sewage disposal works for the Parish of Rainow. Reconstruction of a sewage disposal installation for the R.D.C. Housing Site at Sutton. Construction of a sewage disposal works for the R.D.C. Housing Site at Gawsworth.
4/2/1931	Ellesmere Port and Whitby Urban District Council.	£117,475	Reconstruction of existing sewage works at Ellesmere Port. Construction of new sewage disposal works at Little Stanney. Extension of sewerage system. (This is a revised scheme following recommendations of the Ministry of Health after a previous Inquiry held on 22/1/1930.)
25/2/1931	Congleton Municipal Borough.	£34,493	Reconstruction of surface water sewers in an area subject to flooding owing to insufficient capacity of existing sewers. Sewering of Mossley area to a new pumping station. Reconstruction of the sewage disposal works.
26/2/1931	Wilmslow Urban District Council.	£40,000	Extension of sewers in the Dean Row area. Reconstruction of the Northern Sewage Disposal Works.

Date.	Local Authority.	Amount of Loan.	Description of Scheme.
10/3/1931	Nantwich Rural District Council.	£128,613	<p>Works of water supply for the contributory parishes of Aston-Juxta-Mondrum, Audlem, Austerson, Baddington, Basford, Batherton, Barthomley, Blakenhall, Bridgemere, Broomhall, Buerton, Chorlton, Church Coppenhall, Crewe Green, Checkley-cum-Wrinehill, Coole Pilate, Dodcott-cum-Wilkesley, Dodington, Haslington, Hough, Hankelow, Hatherton, Hunsterton, Leighton, Lea, Minshall Vernon, Newhall, Poole, Rope, Sound, Shavington-cum-Gresty, Stapeley, Warmingham, Weston, Willaston, Wistaston, Woolstanwood, Worleston, Wybunbury, Walgherton, Woodcote and Wrenbury-cum-Frith.</p> <p>The scheme consists of a borehole at Woore, in the County of Salop, Pumping Plant, Reservoir and Distribution mains.</p>
17/3/1931 to 27/3/1931	Cheshire County Council and Chester City Council.		<p>Application by the Cheshire County Council and the Chester City Council under Sub-section (3) Section 14, Local Government Act, 1888, to the Minister of Health to constitute by Provisional Order, a Joint Committee respecting the Administrative Counties of Chester, Denbigh, Flint, Merioneth and Salop and the City of Chester, through or by which the River Dee above the Weir at the Old Bridge at Chester, or any tributary thereof passes and to confer on such Committee the powers of a Sanitary Authority under the Rivers Pollution Prevention Act, 1876.</p>
18/3/1931	Malpas Rural District Council	£2,000	<p>Extension of sewers. Reconstruction of sewage disposal works.</p>
26/3/1931	Runcorn Rural District Council	£7,100	Reconstruction of Helsby Sewage Disposal Works.
16/4/1931	Bredbury and Romiley Urban District Council	£17,136	Extension of sewers.

Date.	Local Authority.	Amount of Loan.	Description of Scheme.
21/4/1931	Congleton Rural District Council.	£4,350	Construction of a sewerage system and Sewage Disposal Works for the Parish of Church Lawton.
23/4/1931	Cheadle and Gatley Urban District Council.	£8,598 £19,786	Works of Private Street Improvement. Extension of sewers to meet private housing development.
3/6/1931	Runcorn Rural District Council	£15,000 £9,000 £1,000	Works of water supply for the Parishes of— Frodsham and Frodsham Lordship. Helsby. Alvanley. The scheme consists of new boreholes at Helsby and Frodsham, Pumping Plant, Pumping and distribution Mains, and new Reservoirs at Harrol Edge and Helsby.
18/8/1931	Chester City Council and Chester Rural District Council	£88,394	Sewer extensions for the south-west portion of the City. Construction of new sewage disposal works to serve a portion of the City and the adjacent parishes of Blacon and Great Saughall, in the Chester Rural District. (The Rural District Council agree to contribute £5,000 towards the cost of the sewage disposal works).
19/8/1931	Northwich Rural District Council.	£7,604	Extension of sewers at Hartford. Reconstruction of Hartford Sewage Disposal Works.
20/8/1931	Northwich Rural District Council	£6,126	Reconstruction of defective out-fall sewer. Sewer extensions in the Parishes of Lostock Gralam and Rudheath.
27/8/1931	Congleton Rural District Council	£87,000	Works of water supply for the Parishes of Betchton, Blackden, Brereton, Church Hulme, Church Lawton, Cranage, Davenport, Goostrey, Hassall, Newbold Astbury, Odd Rode, Smallwood and Twemlow. The scheme consists of a borehole at Mow Cop, Pumping Plant, Reservoir, and Distribution Mains. (This is a revised scheme following recommendations of the Ministry of Health after a previous Inquiry held on 24/9/1930.)

Date.	Local Authority.	Amount of Loan.	Description of Scheme.
18/9/1931	Handforth Urban District Council	£19,090	Provision of a sewerage system for the Urban District of Handforth, and the construction of Sewage Disposal Works in the Urban District of Wilmslow.
6/10/1931	Northwich Urban District Council and Northwich Rural District Council.	£19,042 £1,223	Works of sewerage and sewage disposal. Works of sewage disposal for the contributory Parishes of Hartford and Winnington. The scheme consists of sewer extensions in the Northwich Urban District and the reconstruction of Winnington Sewage Disposal Works which serve the Urban District and a part of the Northwich Rural District.
4/11/1931	Hazel Grove and Bramhall Urban District Council	£11,131	Extension of sewerage system.
25/11/1931	Ellesmere Port and Whitby Urban District Council.	—	Ministry of Health Inquiry into an objection to proposed new Sewage Disposal Works.

## Section IX.--Miscellaneous.

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### **Housing.**

The Tables in the Appendix furnish a comprehensive survey as regards the provision of houses by the various Local Authorities under the Housing Acts, and also by private enterprise.

Information is also furnished with respect to the activities of Local Authorities in the repair, closing, or demolition of unfit dwelling houses.

### **Food and Drugs (Adulteration) Act, 1928.**

During the year ended 31st December, 1931, a total of 1,322 samples were taken under the above Act comprising 1,226 foods and 96 drugs.

Of the foods, 854 were milks, of which 34 were certified by the County Analyst to be adulterated or otherwise not up to standard. Three of the drugs did not conform to the Standard of the British Pharmacopeia.

Legal proceedings were taken in three cases of adulterated milk and in seven cases of milk deficient in fat. Fines amounting to a total of £7 5s. 6d. were imposed in five of these cases, one being the delivery of adulterated milk to a Children's Home. Five cases were dismissed, the defendants in four of these pleading the case of *Hunt v. Richardson* although in one the deficiency in fat was 25 per cent.

Of the other adulterated foods one trader was fined for selling cream containing preservative and another for selling sausages containing preservative.

The sellers of the three drugs—one magnesia and two Seidlitz Powders—which were not up to standard were cautioned.

Full details of all the samples have been supplied to the Ministry of Health.

### **Graded Milks.**

At the end of the year there were:—

7 Producers licensed to sell "Certified Milk."

6 Producers licensed to sell "Grade A (Tuberculin Tested)" Milk.

30 Producers licensed to sell "Grade A" Milk, of which 28 were also licensed to bottle the same.

### **Milk and Dairies (Consolidation) Act, 1915.**

Under the above Act any District Medical Officer can take samples of milk in his area, and if on biological examination these prove tubercular, he can notify the County Medical Officer (where the farm supplying the milk is in the County) and it is the duty of this department to arrange for the cattle on the farm to be inspected by a Veterinary Surgeon, samples of milk analysed and the offending animals slaughtered under the Tuberculosis Order.

Many notifications are received from Manchester, Liverpool, Warrington, Salford, Birkenhead, Stretford and Wallasey. With the object of increasing the number of samples taken arrangements were made with the various District Councils to take samples all over the County, and the number taken during 1931 was 503 of which 29 samples proved positive. The County Sanitary Officer also took 510 samples of which 44 proved positive.

During 1931 356 farms were notified, 9,785 cattle examined, 1,082 samples taken, of which 365 proved positive.

As a result of these inspections 269 cattle were found tubercular and slaughtered.

It should be noted that these figures apply only to farms from which the mixed sample of milk had been found positive.

It will be seen from the above that a very large number of inspections are being carried out in the County and I do not think there is any other County that does more work under this heading.

The whole-time County Veterinary Officer commenced his duties in February, 1932.

At the time of writing this Report a Joint Committee of the 'Milk and Dairies Act Committee and the Diseases of Animals Acts Committee has been formed with the object of reviewing the whole question of the Veterinary work in the County.

### Blind Persons Act.

This Act is carried out under the general supervision of your Council by the Home Teaching Societies at Chester, Ashton-under-Lyne and Macclesfield. The work is exceedingly well done by these Home Teaching Societies.

The estimated cost for 1931-32 is as follows:—

#### BLIND PERSONS ACT.

Grants to Voluntary Associations under Scheme made by Ministry of Health under Sec. 102 (1) Local Government Act, 1929:—	£
Chester Home Teaching Society ... ..	1,712
Macclesfield Home Teaching Society ... ..	671
Ashton-under-Lyne Home Teaching Society ... ..	636
Henshaw's Institution for the Blind ... ..	76
National Library for the Blind ... ..	34
Manchester and Salford Blind Aid Society ... ..	41
National Institute for the Blind ... ..	15
North Western Counties Association for the Blind ... ..	115
	3,300
National Library for the Blind (Additional Grant)	10
Printing, Postages, Travelling, &c. ... ..	18
Provision for increase of Grants to Voluntary Societies ... ..	200
Grants for Workshop Employees and Blind Copyists ... ..	120
Relief of Unemployable Blind Persons under the County Council's Scheme ... ..	6,750
	£10,398

The number of Blind Persons in the County is about 803.

One hundred and forty-eight free wireless licenses were issued to Blind Persons in the County during 1931.

Your Committee have arranged that before any person is placed on the Register of the Home Teaching Societies, he or she must have been certified blind by the County Oculist (Dr. Dunlop Hamilton).

Under the augmentation scheme weekly grants are being made to 410 persons and also 23 dependents grants. Grants were refused in 80 cases.

#### Local Government Act, 1929.

In the Report for 1930 it was pointed out that most of the accommodation for the sick poor in the County was attached to or within the same curtilage as the House portion of the Institution, and therefore could not be appropriated by the Public Health Committee for Hospital pur-

poses. The Institutions therefore, have continued to be used for the treatment of the sick poor under the Public Assistance Committee. On account of this the problem of classification is one which cannot be easily solved in a large county area.

Apart from the treatment of the Blind no treatment has been taken out of the hands of the Poor Law.

To classify separate institutions for certain specified conditions would lead to difficulties. The beds would not be put to their best use. The maximum demand for one class of case might not occur at the same time as that for another and the inevitable result would follow that one institution would be overcrowded while another would be half empty.

It was originally suggested by Sir G. Newman in his report for 1928 that Councils should have some hospitals for acute cases and some for chronic cases. The L.C.C., however, have not adopted this, each hospital having its proportion of acute and chronic cases.

This is no doubt the best scheme for an authority that have had large well equipped Poor Law Hospitals handed over to them but in a County such as Cheshire where as already stated all the hospitals with the exception of one, *i.e.*, Clatterbridge, are inseparable from the Institution and by no means equipped up to modern standards, such a scheme is impossible.

Large general hospitals where all classes of patients could be treated should form the basis of any scheme of hospital service. As was pointed out in the Annual Report for 1930 all the larger centres of population are along the northern border of the County and it is there one naturally finds the large well equipped modern hospitals thus making the development of a hospital policy extremely difficult. To develop a comprehensive Hospital Scheme, the County would need to be divided into several areas of equal size, each with its own hospital services. This, however, could not be done without a considerable expenditure of money unless some agreement can be reached with the Voluntary Hospitals. There is no doubt that the latter course is the most desirable thus avoiding any overlapping of the various services.

Until such an agreement can be reached therefore, it would be inadvisable to make any important changes in the use of the Institutions.

The following table shows the various Institutions and accommodation:—

Institution.	Beds Available.	Average Beds Occupied.
Arclid ...	94 ...	56
Clatterbridge ...	274 ...	219
Dutton ...	81 ...	68
Knutsford ...	142 ...	107
Macclesfield ...	100 ...	63
Nantwich ...	124 ...	107
Northwich ...	50 ...	44
Tarvin ...	69 ...	55

The following improvements were carried out during the year:—

TARVIN.—Receiving Ward was converted into a two bed Ward for the Hospital.

ARCLID.—Improvements to Kitchen and installation of new cooking plant.

MACCLESFIELD.—Improvements to Hospital Wards by removal of central fire places and flues. Improvements to Kitchens and installation of new cooking plant.

GENERALLY.—Minor repairs, improvements and decorations were carried out.

TABLE A.

VITAL STATISTICS FOR ALL DISTRICTS IN ADMINISTRATIVE COUNTY OF CHESTER, 1931

CAUSES OF DEATH.	Alderley Edge U.D.		Alsager U.D.		Altrincham U.D.		Bebington and Bromborough U.D.		Bollington U.D.		Bowdon U.D.		Bredbury and Romiley U.D.		Buglawton U.D.		Cheadle and Gatley U.D.		Compstall U.D.		Congleton M.B.		Crewe M.B.		Dukinfield M.B.		Ellesmere Port and Wharby U.D.		Hale U.D.		Handforth U.D.		Hazel Grove and Bramhall U.D.			
	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.	M.	F.				
(Civilians only)	15	32	16	20	122	130	137	104	24	19	14	24	62	66	10	3	91	83	5	6	93	81	298	242	132	123	97	72	52	59	7	5	84	95		
ALL CAUSES	15	32	16	20	122	130	137	104	24	19	14	24	62	66	10	3	91	83	5	6	93	81	298	242	132	123	97	72	52	59	7	5	84	95		
1 Typhoid and Paratyphoid Fevers																																				
2 Measles							1	3																		1										
3 Scarlet Fever																																				
4 Whooping Cough						1	1	4														2	3	3	1			3								
5 Diphtheria							3	2		1			1										5	2		1	3								1	
6 Influenza	1	3			6	7	4	4	1	1		1	1	4		1	4	4			2		16	8	5	6	4	1		4				4	1	
7 Encephalitis Lethargica					1													2																		
8 Cerebro-Spinal Fever																										1	1									
9 Tuberculosis of Respiratory System	1				10	5	7	5		1			4	3		1	2	4			5	4	24	8	4	8	3	4	2	3	2		3	4		
10 Other Tuberculous Diseases					4	1	2	1					1				1				1	5	1			3	3		2				1	1		
11 Syphilis																							1	1				1	1							
12 General Paralysis of the Insane, Tabes Dorsalis					2	1							1				1					3		1		1										
13 Cancer, Malignant Disease	2	3	3	4	17	15	17	10	10	3			9	10	2		12	7	1	2	15	12	36	36	13	19	6	5	11	4				10	19	
14 Diabetes					1		3	5	1			1		4				2			1		5	9	3	2								4		
15 Cerebral Hemorrhage, &c.	1	2	2	2	7	7	5	3	1		1	1	4	6			5	4			4	4	17	17	10	4	7	4	1	4	2		5	11		
16 Heart Disease	1	9	5	3	12	39	24	21	6	2	3	7	9	9	1		15	28	2	3	18	19	64	55	32	30	16	11	12	12	3	1	14	13		
17 Aneurysm																					1		1													
18 Other Circulatory Diseases	1	3	2	1	4	7	6	4	8	5	1	1	7	2	1		9	4			5	5	11	17	3	2	5	4	4	5			6	2		
19 Bronchitis		1			10	7	4	5	1		1	1	4	5	3		3	3			13	6	9	6	6	8	5	1		5			2	7		
20 Pneumonia (all forms)		1	1		9	7	5	8		2		3	1	5			4	1			5	1	14	7	11	6	12	3	2	2		2	8	5		
21 Other Respiratory Diseases	1				2	2		1							1		2	1			1		4	4	1	2	2	1						1		
22 Peptic Ulcer					1		2						1	1			1				1		2		2		1	2					1			
23 Diarrhoea, &c. (under 2 years)		1					3																1			2	3	1					1			
24 Appendicitis					2	2	2	1		1		1												1			1	2	1						3	
25 Cirrhosis of Liver																							1													
26 Other Diseases of Liver, &c.					1		1				1	2					1	2			1		1	2		1	1	3						1		
27 Other Digestive Diseases		1			2	5	2	6	4	4		1	2		1		2	2			1	4	5	3	2		2	4					3	2		
28 Acute and Chronic Nephritis	1				7	4	2		1	2			5	1	1		1	2			2	3	10	11	7	10	2	2	5	1			2	1		
29 Puerperal Sepsis		1				1		1																												
30 Other Puerperal Causes								2				1		1									5												1	
31 Congenital Debility, Premature Birth, Malformations, &c.		2			2	3	3	9	2	1	1		1	2			5	3			2	2	12	5	11	6	13	4	2	2			6	4		
32 Senility			2	1	1	1	4	8			1	1	6	3	1	1	5	1			4	4	10	8	2	1		1	1				4	11		
33 Suicide		1			1	1	1											1	1				5	2			1	1						2	1	
34 Other Violence		2	2			6	4	5	2				1	1			2	2	1		4	4	5	10	6	3	4	2	1	2		1	2	1		
35 Other Defined Diseases	3	3	1	2	10	9	19	11	1		3	3	7	7			12	12		1	9	9	27	19	10	9	2	8	8	7		1	6	5		
36 Causes ill-defined or Unknown					1						1						2										1									
Special Causes (included in No. 35 above)—																																				
Small-pox																																				
Poliomyelitis																																				
Polioccephalitis																						1														
Total	2		2	9	6	17	5	1	1			3	4			8	3			6	5	21	14	16	12	20	11	2	4			11	5			
Deaths of Infants (under one year)																																				
Legitimate	2		2	9	6	13	5	1	1				3	4			8	3			3	4	20	14	15	10	20	11	2	3			11	4		
Illegitimate						4															3	1	1		1	2								1		
LIVE BIRTHS—Total	14	20	11	19	172	149	260	229	28	30	12	17	75	77	9	8	131	131	8	6	99	97	365	321	127	146	233	225	53	53	9	6	74	56		
Legitimate	14	16	10	19	169	140	249	222	27	28	10	17	75	74	9	8	131	129	7	6	92	94	351	309	123	137	225	220	52	50	8	6	72	54		
Illegitimate		4	1		3	9	11	7	1	2	2			3						2	1		7	3	14	12	4	9	8	5	1	3		2	2	
STILLBIRTHS—Total			1		4	7	14	9	2	1		2	4	2	2	2	2	3			4	9	17	17	6	10	4	11		2				3	5	
Legitimate					3	7	14	9	2	1		2	4	2	2	2	2	3			4	8	16	17	6	10	4	10		2				3	5	
Illegitimate			1		1																		1	1												
RESIDENT POPULATION		3104		2845		21250		26950		5050		3263		10950		1673		18590		864		13020		46230		19550		19080		10580		1039		13320		

TABLE A.—Continued.

VITAL STATISTICS FOR ALL DISTRICTS IN ADMINISTRATIVE COUNTY OF CHESTER, 1931.

CAUSES OF DEATH.	Hollingworth U.D.		Hoole U.D.		Hoyle and West Kirby U.D.		Hyde M.B.		Knutsford U.D.		Lymm U.D.		Macclesfield M.B.		Marple U.D.		Middlewich U.D.		Mottram-in-Longendale U.D.		Nantwich U.D.		Neston and Parkgate U.D.		Northwich U.D.		Runcorn U.D.		Sale U.D.		Aggregate of U.D.'s.		Sandbach U.D.				
	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.	M.	F.	M.	F.			
(Civilians only)	20	18	26	35	84	93	159	238	42	39	37	33	179	230	51	55	33	26	16	18	48	46	34	24	110	92	107	89	142	162	2747	2731	46	36			
ALL CAUSES	20	18	26	35	84	93	159	238	42	39	37	33	179	230	51	55	33	26	16	18	48	46	34	24	110	92	107	89	142	162	2747	2731	46	36			
1 Typhoid and Paratyphoid Fevers																																					
2 Measles	1								1																												
3 Scarlet Fever									1																												
4 Whooping Cough					2																																
5 Diphtheria		1					3																														
6 Influenza	1	2	2		4	5	9	2	1	1	1	6	5	2	7		2		1	1	3	1		3	7	1	2	4	5	81	106						
7 Encephalitis Lethargica					1						1		2		1		1								1	1											
8 Cerebro-Spinal Fever															1																						
9 Tuberculosis of Respiratory System	1		3		8	7	9	14	3		4	1	11	14	1	2					1	3	1	2	3	6	7	6	4	10	4	146	121	1			
10 Other Tuberculous Diseases					1		2	2					1	1	2	1																					
11 Syphilis			1														1																				
12 General Paralysis of the Insane, Tabes Dorsalis							4	1																													
13 Cancer, Malignant Disease	4	3	4	3	19	7	23	40	6	8	9	3	22	33	5	4	3	5	2	4	4	11	6	1	18	13	10	13	19	29	359	375	3	4			
14 Diabetes		1			2	2	4	4					2	5		1	1				1	1		1	1	1	1	1	3	5	41	46					
15 Cerebral Hemorrhage, &c.	3		2	4	1	7	5	7	1	2		4	11	16	1	5	2	1	3	1	3	3	1	1	3	6	5	9	18	6	143	173		3			
16 Heart Disease	1	7	6	5	27	24	47	69	12	7	8	7	40	64	13	10	7	6	1	5	11	10	10	7	23	18	14	12	19	32	556	635	7	5			
17 Aneurysm								1														1															
18 Other Circulatory Diseases	1	1	2	1	7	9	15	14	2			2	21	6	4	5	2		1		1		1	1	4	2	9	8	7	13	164	147	2	3			
19 Bronchitis	2			3	1	2	10	16	4	3	3	1	8	2	4	3		3			1	3		2	4	2	8	4	8	15	135	141	3				
20 Pneumonia (all forms)	2		2	1	3	8	16	10	2	1	3	1	12	6	3	4	2		1		5	3	2	1	9	6	13	6	3	4	172	128		2			
21 Other Respiratory Diseases						2	2	1	1		1		3	4									1		3	2	2	1	1	1	29	25					
22 Peptic Ulcer		1	1										1	1																							
23 Diarrhoea, &c. (under 2 years)							1						1	1							1																
24 Appendicitis						2		1					2																								
25 Cirrhosis of Liver	1						2			1																											
26 Other Diseases of Liver, &c.						1	2				1	1		1																							
27 Other Digestive Diseases			1		2	2	3	3				1	2	7	1	2		1	1		1				1	2	1	2	3	2	3	58	57	1			
28 Acute and Chronic Nephritis	1			2	1	4	3	7			1		4	12	2	2	1		2	2				4	1	7	5	2	4	5	10	93	102	2	3		
29 Puerperal Sepsis				1				2																													
30 Other Puerperal Causes								3																													
31 Congenital Debility, Premature Birth, Malformations, &c.	1		1	1	2	3	11	5	1	2	1	1	4	6	1		1	2	2		3	1	2		7	4	6	5	2	2	126	76	3				
32 Senility	1			2	2	3	5	12	1	4		4	6	16	1	2		1	1	2	2	2															
33 Suicide	1				1	1	2	1	3				1	3	2	1	1																				
34 Other Violence		1	1		1	2	7			2	1		7	4	3		5	3			1		1		4	1	7	2	6	6	99	61	6	1			
35 Other Defined Diseases	1	2	1	7	4	2	16	16	2	7	3	4	10	20	4	6	3		1	1	4	1	2	4	12	6	12	6	18	15	244	227	8	3			
36 Causes Ill-defined or Unknown																																					
Special Causes (included in No. 35 above)—																																					
Small-pox																																					
Poliomyelitis																																					
Polioccephalitis																																					
Deaths of Infants (under one year)																																					
Total	3		1	1	6	3	16	8	5	3	3	2	10	10	2	1	1	2	2		5	2	3		7	7	10	8	13	5	235	142	8				
Legitimate	3		1	1	6	3	16	8	5	3	3	2	8	9	2	1	1	1	2		4	2	3		7	7	10	8	12	5	221	134	8				
Illegitimate													2	1							1											14	8				
LIVE BIRTHS—Total	13	8	33	40	80	102	179	172	53	43	45	36	240	214	43	27	50	57	10	17	51	56	53	45	141	148	149	149	185	183	3382	3277	54	46			
Legitimate	13	8	32	39	74	97	173	166	48	43	44	36	231	202	43	26	46	51	9	16	48	54	50	43	134	142	146	147	182	180	3259	3153	53	43			
Illegitimate			1	1	6	5	6	6	5		1		9	12		1	4	6	1	1	3	2	3	2	7	6	3	2	3	3	123	124	1	3			
STILL BIRTHS—Total			2	3	3	7	14	13	3		1	3	17	10		1	3	4	1		2	3	3	2	7	13	10	9	12	9	163	181	3	3			
Legitimate			1	3	3	7	13	12	3																												

TABLE A.—Continued.  
VITAL STATISTICS FOR ALL DISTRICTS IN ADMINISTRATIVE COUNTY OF CHESTER, 1931.

CAUSES OF DEATH.	Stalybridge M.B.		Tarporley U.D.		Wilmalw U.D.		Winsford U.D.		Yearley-cum-Whaley U.D.		Bucklow R.D.		Chester R.D.		Congleton R.D.		Disley R.D.		Macclesfield R.D.		Malpas R.D.		Nantwich R.D.		Northwich R.D.		Runcorn R.D.		Tarrin R.D.		Tintwistle R.D.		Wirral R.D.		Aggregate of R.D.'s.			
	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.	M.	F.	M.	F.	M.	F.	M.	F.
(Civilians only)	164	183	15	20	49	63	67	59	9	8	112	109	75	88	91	75	16	19	96	103	36	28	142	147	168	127	138	173	79	87	14	8	136	144	1093	1108		
ALL CAUSES	164	183	15	20	49	63	67	59	9	8	112	109	75	88	91	75	16	19	96	103	36	28	142	147	168	127	138	173	79	87	14	8	136	144	1093	1108		
1 Typhoid and Paratyphoid Fevers	1	1					1							2										1								1		3	1			
2 Measles																																						
3 Scarlet Fever																																						
4 Whooping Cough	1	1											1																									
5 Diphtheria	1		1	1					1		1																											
6 Influenza	2	4	1	1	3	2	3	2			2	1	2	2	6				2	2	2		4	2	3	2	1	2	4	2	1		3	1	24	20		
7 Encephalitis Lethargica							1																															
8 Cerebro-Spinal Fever											1	1																										
9 Tuberculosis of Respiratory System	9	3			4	2	2	2			4	3	3	3	2						2	7	1	2	7	11	7	7	11	8	7	1	1		6	10	49	54
10 Other Tuberculous Diseases	1	2			1						1	1	1	2							1				2		1	1	3	2	3		2		14	6		
11 Syphilis	1																																					
12 General Paralysis of the Insane, Tabes Dorsalis	1				1						2																											
13 Cancer, Malignant Disease	20	25	2	4	8	9	6	5	2	2	14	21	12	13	15	9	4	5	11	16	5	3	17	17	22	14	18	30	5	14			1	18	23	141		
14 Diabetes	2	1	1	1	1	1	1	1			2	1	1						1	2	1		2	2	1	4	2	3					1	2	10	17		
15 Cerebral Haemorrhage, &c.	9	23	2	1	1	3			1		5	4	5	5	7						1	8	6	3	1	9	13	3	6	2	6	8	9		6	11	64	72
16 Heart Disease	37	50	3	3	12	11	19	17	2	4	21	17	26	26	10	8	3	4	18	30	12	7	44	39	33	35	24	42	12	22	4	2	34	39	241	271		
17 Aneurysm											1														1		2											
18 Other Circulatory Diseases	4	2		7	2	5	6	6			7	10	2		7	2	4	3	9	5					3	5	18	6	8	11	3	9			4	7	65	58
19 Bronchitis	13	17	1		3	7	1	1			8	3	3	1	4	3									1	4	3	6	4	2	8	2	1		3	2	32	30
20 Pneumonia (all forms)	12	15	1		2	3	6	4	1		3	5	3	2	6	5			1	5			2	2	4	10	11	7	7	10	4	2	1		8	10	54	54
21 Other Respiratory Diseases					1	1	1				3	4											1	2			2	2							2	1	9	11
22 Peptic Ulcer	1	1							1		2		1		1				2								2	1										
23 Diarrhoea, &c. (under 2 years)	2				1																				1		1											
24 Appendicitis													1	1	1	1																						
25 Cirrhosis of Liver											1														1	2	1	2										
26 Other Diseases of Liver, &c.	1	1					1																															
27 Other Digestive Diseases	3	2	2		1		3	2			6	4	1	3	2								1	1	3	3	5	4	6	2					1	6	23	27
28 Acute and Chronic Nephritis	7	6	1		2	3	3	3			3	2	7	2	5	1			2	6	1	2	6	5	6	1	8	10	3	1	1	1	1		8	2	50	35
29 Puerperal Sepsis	1																																					
30 Other Puerperal Causes	1				1		1						1		1																							
31 Congenital Debility, Premature Birth, Malformation, &c.	10	4	1		2	1	1				5	9	2	4	6	4	1	1	3	2					10	4	9	7	7	5	4	2			6	2	52	40
32 Senility	5	9			1	6	5	5	1		4	1			3	7	11	1			3	3	1		8	8	4	5	4	5	2	6	1		1	1	35	44
33 Suicide	5	1					1				1	1	1	1	2				1	2			3	1	3	1	3								4		20	5
34 Other Violence	7	2	1		1	1	1	2			3	5	4	2	4	3									4	5	12	1	10	3	2		1	1	7	8	68	30
35 Other Defined Diseases	12	10	1	1	3	6	8	3	1	1	15	13	6	11	10	8	2				12	12	5	4	10	14	10	11	9	9	13	9	2	2	13	10	107	103
36 Causes ill-defined or Unknown					1						1	1															3	1							2		6	2
Special Causes (included in No. 35 above)—																																						
Small-pox																																						
Poliomyelitis																																						
Polioencephalitis																																						
Deaths of Infants (under one year) —	17	12	1	4	1	5	2				7	12	3	6	9	5	1	1	8	3	2	3	15	7	13	11	9	8	5	3			11	6	83	65		
Legitimate	16	11	1	4	1	5	2				7	12	3	6	8	4	1	1	5	3	2	2	14	6	13	11	8	7	4	2			9	4	74	56		
Illegitimate	1	1													1	1			3								1	1	1	1			2	2	9	7		
LIVE BIRTHS—Total	173	188	18	15	54	63	70	74	9	4	154	158	107	121	101	92	18	14	122	114	43	33	190	171	221	203	237	206	116	90	16	11	211	202	1536	1415		
Legitimate	164	182	17	14	51	61	68	70	9	4	149	154	104	110	98	88	16	14	112	109	40	32	178	164	215	190	223	199	109	86	14	11	17	14	1455	1351		
Illegitimate	9	6	1	1	3	2	2	4			5	4	3	11	3	4	2		10	5	3	1	12	7	6	13	14	7	7	4	2		14	8	81	64		
STILLBIRTHS—Total	8	13	2	1	2	10	4				7	9	7	3	4	3	1		4	1	2	3	6	5	11	6	11	12	3	2			13	3	69	47		
Legitimate	7	13	2	1	2	10	4				7	8	6	3	4	3	1		4		2	3	4	5	11	6	10	11	2	2			13	3	64	44		
Illegitimate	1										1	1																										
RESIDENT POPULATION	25130		2434		9725		11100		1744		20070		16200		13145		3178		19240		4288		26680		26570		32570											











# **Administrative County of Chester.**

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## **APPENDIX TO STATISTICS**

**FOR 1931.**

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**TABLE A.—Vital Statistics for all Districts in  
the Administrative County of Chester.**

**TABLE B.—Causes of Death at Different Periods  
of Life in the Administrative County of  
Chester, 1931.**

**TABLE C.—Population, Area, Births, Deaths,  
&c.—**

Showing enumerated and estimated population, area, births and deaths, birth rates and death rates, proportion of deaths of Infants to births, deaths from several principal zymotic diseases and corresponding death rates.

**TABLE D.—Housing.**