ON CHILD MORTALITY AT THE AGES 0–5 YEARS, IN ENGLAND AND WALES[1].

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I. CIRCUMSTANCES OF ENVIRONMENT FAVOURING EXCESSIVE CHILD MORTALITY.

Maternal Ignorance.—Lack of Medical Care and Nursing.

In the preceding reports on infant mortality in counties during 1908 (Cd. 5263), in 241 urban areas in 1907–10 (Cd. 6909), and in Lancashire (Cd. 7511), the chief environmental circumstances favouring excessive infant mortality have been enumerated and to some extent discussed.

These circumstances are complex and numerous, and it is not unreasonable that differences in opinion should be held as to their relative importance. It is clear also that one set of adverse circumstances may lead to excessive infant mortality in one area, and another set in a second area.

These general remarks apply with equal force to the total child mortality at ages 0–5.

Maternal ignorance is sometimes regarded as a chief factor in the causation of excessive child mortality. It is a comfortable doctrine for the well-to-do person to adopt; and it goes far to relieve his conscience in the contemplation of excessive suffering and mortality among the poor.

This doctrine has found favour in occasional official reports and in miscellaneous addresses. It embodies an aspect of truth, but it is mischievous when it implies, as it sometimes does, that what is chiefly required is the distribution of leaflets of advice, or the giving of theoretical instruction as to matters of personal hygiene.

[1] Extracted from the *Forty-fifth Ann. Rep. of the Local Govt. Board*, 1915–16. Supplt. containing a Report on Child Mortality at ages 0–5, in England and Wales (Cd. 8496). H.M. Stationery Office. London, 1916. Price 1*s*. net.

There is little reason to believe that the average ignorance in matters of health of the working-class mother is much greater than that of mothers in other classes of society. Furthermore, it would appear that working-class mothers give their infants the supremely important initial start of breast feeding in a larger proportion of cases than do the mothers in other stations of life.

The mothers in both classes may be ignorant; in both there is deficient training in habits of observation, especially in regard to the beginnings of illness; but the mother in comfortable circumstances is able to ensure for her infant certain advantages which the infant of the poorer mother often cannot obtain. What are these?

(1) The well-to-do mother is commonly able to devote herself to her infant and have assistance in this duty; the working-class mother is single-handed, and has also to perform, unaided, all the duties of her household, including the washing and cooking for her husband and herself and possibly for several children.

(2) The well-to-do mother is commonly able to ensure that the milk for her infant is purchased under the best circumstances, is stored in a satisfactory pantry, and is prepared under cleanly conditions. The working-class mother often is supplied with stale impoverished milk, may have no pantry, and, except when suckling her infant, is handicapped at every stage in the cleanly preparation of her infant's food.

(3) If the well-to-do mother is ill, adequate medical and nursing assistance is at once available, and the child's welfare can be safeguarded; if the working-class mother is ill, the child usually must suffer with its mother.

(4) If the child of the well-to-do mother falls ill, everything that good nursing and medical attendance can furnish is commonly at once available; for the child of the working-class mother the state of matters is remote from this ideal. Facilities for medical attendance and nursing vary greatly in different districts. In London, in small towns, and in rural districts, the nursing assistance provided by district and county nursing associations is usually more generally available than in industrial towns. Prompt medical assistance is of great importance. It is often not available for children of wage earners, and particularly for the children of unskilled workers.

(5) Infants and nursing mothers are very rapidly influenced by their environment. This environment is complex. The mother is the main element in the environment of the infant. If she is overworked

and suffering from chronic fatigue her infant must suffer; directly, because the mother's milk under these circumstances is liable to be impoverished or otherwise unwholesome; or indirectly, owing to insufficient attention to the infant. The infant of the well-to-do mother is less likely to suffer in either of these ways.

(6) *Not only are the milk supply, and the storage and preparation* of artificial food, important parts of the environment of the infant, but also the housing conditions of the family, and the sanitary conditions of the back yard and of the street in which the house is situate. The superiority of the circumstances of the one mother and infant over those of the other in these respects is obvious.

There is no reason to assume that the one mother is more ignorant than the other. But the ignorance of the working-class mother is dangerous, because it is associated with relative social helplessness. To remedy this what is needed is that the environment of the infant of the poor should be levelled up towards that of the infant of the well-to-do, and that medical advice and nursing assistance should be made available for the poor as promptly as it is for persons of higher social status.

The assistance given will include advice, but it will be the advice which a medical practitioner gives to his patient; which a health visitor gives as to personal hygiene; and which a sanitary inspector gives to a householder. It should include also the advice given by a trained midwife, who is in a favourable position to secure the adoption of her advice by the mother. Such advice is becoming available to a steadily increasing extent, but in some industrial towns a majority of the midwives are still untrained women, who are not competent to give the best advice.

Fecklessness of Mothers.

Probably more important than actual ignorance is carelessness or fecklessness of mothers. In the essential duty of breast feeding the infants of the poor are better served than those of the well-to-do; but, for the reasons set out in the preceding paragraphs, carelessness in other respects in the poor mother is fraught with much greater risk to the infant than corresponding carelessness among the well-to-do.

This carelessness is being diminished by the influence of public opinion and of the example of other mothers. This is one of the not least important ways in which a Child Welfare Centre exercises an important influence for good. Not only is the mother influenced by

the medical advice given, but she is subjected to the stimulus of comparison of her child with the children of other mothers, and to the valuable influence resulting from the evidence of active interest in her child. The systematic visits to the home of a tactful and judicious health visitor confirm this effect.

Intemperance.

That intemperance either in husband or wife is a serious cause of excessive infant mortality is certain. On p. 80 of my *Second Report on Infant Mortality* was given a diagram showing the almost complete correspondence in a long series of years between the annual curve of infant mortality, of proceedings for drunkenness in terms of population, and of *per capita* consumption of beers and spirits; and this general coincidence for the whole country fits in with the experience of individual families.

The close relationship between intemperance and excessive child mortality is not difficult to detect in the experience of different towns. There can be no hesitation in ascribing to this cause an important share in the causation of the excessive child mortality in such towns as Burnley, Wigan, Middlesbrough, Barnsley, Stoke-on-Trent, Liverpool, and Preston.

If abstinence from alcoholic drinks could be enforced in these and many other towns in which child mortality is excessive, their experience in this respect undoubtedly would rapidly improve.

But intemperance is a symptom of social evil as well as its cause. It not only results from example and habit acting on an individual of feeble will power, but it is also a common result of the toxaemia of over-fatigue, the habit of excessive drinking being acquired in the foolish attempt to counteract fatigue by this means. Excessive drinking is a product of uninteresting surroundings, and more particularly of bad housing and of domestic discomfort. The consideration of intemperance, therefore, cannot be separated from that of housing conditions, and in the search for the easiest point at which to break the vicious circle of influences dragging parents and children down, there is need in some instances for direct attack on intemperance, and in others for equally vigorous attention to the avoidance of chronic over-fatigue, to improvements in housing and to the provision of wholesome means of recreation.

Poverty.

Poverty in towns undoubtedly favours excessive child mortality. Child mortality is high among the poor and low among the well-to-do. It is highest in the poorest wards in any given town and in the poorest parts of a given ward.

Some of the reasons for this association of poverty with excessive child mortality have been enumerated on p. 70. They include unsatisfactory milk supply, bad housing, deficient medical care and nursing. In particular, the fact that poverty implies living in the most densely populated and the least sanitary parts of a district has important bearing on the excessive child mortality associated with poverty. Some of these factors are discussed in fuller detail in Chapter XIII of the *Second Report on Infant Mortality.*

Poverty is a complex phenomenon, varying in composition in different experiences. To speak of its abolition by the direct application of money as the most efficient means for reducing child mortality is as unscientific as to study the properties of oxygen exclusively in a chemical compound containing oxygen along with other elements. Poverty in one instance may be due to insufficient earnings of the parent, and then additional money or its equivalent is required. Poverty may also be caused by intemperance or gambling or improvidence. Here the giving of money may intensify the evil; though even here assistance for the victims of parental misconduct cannot be withheld although the reform of the parent is not secured.

The relative child mortality in the towns reported on gives numerous illustrations of the fallacy of looking at poverty as a simple element. In the mining areas there is nearly always excessive child mortality, although wages are good. Here it is necessary to consider bad housing, a low standard of cleanliness, and the existence of secondary causes of poverty, as responsible in many instances for the destruction of child life. Among these secondary causes of poverty, gambling, intemperance, and improvidence occupy an important place. The moral and the physical causes of poverty act and interact.

In many other areas it is difficult to disentangle cause and effect when sickness and poverty concur. Parental sickness is an extremely important cause of poverty, and excessive child mortality occurs under such conditions. For this sickness bad housing or insanitary conditions of work may be responsible; and so the chain of causation lengthens.

Such a chain presents the hopeful characteristic that its fracture at any point may have effects along each link of the chain.

Overcrowding on Area

is an important determining influence of excessive child mortality. Infectious diseases are more common in densely populated areas; and when this dense aggregation, as frequently happens, is associated with such sanitary defects as bad scavenging, the persistence of privies and pail closets and of unpaved yards and streets, there is always excessive diarrhoea and pneumonia, if not also enteric fever.

Size of Town.

As a rule child mortality is heavier in the larger than in the smaller towns.

That there is, however, no necessary connection between the size of a town and the amount of loss of child life is evident from the numerous examples scattered through the preceding pages. It is only necessary to recall a few illustrations. Newcastle-on-Tyne (199) has a lower child death-rate per 1000 births than Gateshead (211) or Blaydon (228); Darlington (153) a lower child death-rate than Stanley (223); Halifax (151) and Bradford (174) a lower death-rate than Barnsley (241); Birmingham (200) a lower death-rate than Bilston (237), Tipton (222), or Walsall (216); Derby (143) a lower death-rate than Ilkeston (207); Cardiff (170) a lower death-rate than Aberdare (198); and Newport (168) than Blaenavon (217).

Overcrowding in Rooms.

The true test of density of population is the population per room in each tenement. In the following tables the forty great towns and the forty smaller towns having the highest and the lowest child mortality are given, and their relative condition as to overcrowding of rooms (in the non-statutory sense of more than two persons per occupied room) is shown. It will be seen that in the large and in the small towns in which the child mortality was low, the proportion of overcrowded tenements was low. Hendon, Willesden, and Walthamstow are exceptions to this rule.

In the large and the small towns having a high child mortality there is usually a high proportion of overcrowded tenements. It cannot be said, however, that the order in which these towns stand in respect of degree of overcrowding, as revealed by these particular statistics, is approximately the same as that of excessive child mortality; and Preston, Manchester, Rhondda, and Nottingham among the great

towns, and Stalybridge, Ashton-under-Lyne, Chorley, and Hyde among the smaller towns, have an excessive child mortality without a high proportion of overcrowding.

It will be noted that in Durham there is close association between dense crowding in houses and excessive child mortality. In this county housing conditions, speaking broadly, are deplorably bad. The standard of housing is low. A large proportion of the houses have only two bedrooms, often ventilating directly into the living room below. Scullery accommodation is defective. Often there is no pantry. Many streets and yards are unpaved. Drainage is defective, and privies and tub closets remain the chief sanitary conveniences instead of water closets. This general condition persists in large measure owing to the "free house" system; the houses under this system being owned by colliery proprietors. The Durham miners earn good wages, but they live in houses grossly inferior to the average workman's house in other areas, with terrible results in regard to the welfare of their wives and children. It is remarkable that the miners themselves do not appear to have taken up on any considerable scale the question of housing. It is important that more money should be spent on house rent in mining areas; and, so long as living under the conditions characterising present miners' houses continues, a large proportion of the wages spent in other directions must be regarded as misspent.

Similar remarks apply to other areas in which working men in the receipt of good wages themselves tolerate the continuance of bad housing. The margin of wages is spent in current pleasures and relaxation; and the associated occupancy of insanitary and inadequate houses means the continuance of unnecessary destruction of the health and lives of children.

More house pride, and a greater willingness to spend less on ephemeral pleasures and more on domestic comfort are needed. In short, elevation of the standard of living is an indispensable condition of progress. Already the concentration of public opinion in this direction is helping to bring this about.

Defective Sanitation.

The lack of exact proportion shewn in the tables (pp. 76, 77) between overcrowding and excessive child mortality is explicable by the varying extent to which overcrowding is associated with domestic uncleanliness, and with the retention of organic filth in and about the dwelling. Overcrowding, especially when there is also lack of cleanliness and of

PROPORTION PER CENT. OF POPULATION IN PRIVATE FAMILIES WHO LIVE IN A CONDITION OF OVERCROWDING—*i.e.*, IN TENEMENTS WITH MORE THAN TWO OCCUPANTS PER ROOM.

Large Towns.

Large towns with the twenty highest death-rates, 0–5	Per cent. of over-crowding (Census, 1911)	Birth-rate, 1913	Large towns with the twenty lowest death-rates, 0–5	Per cent. of over-crowding (Census, 1911)	Birth-rate, 1913
BURNLEY	9·5	22·8	Hornsey	3·2	16·2
WIGAN	12·9	28·1	Ilford	2·1	17·3
MIDDLESBROUGH	13·4	31·1	BOURNEMOUTH	1·6	15·6
ST HELENS	17·0	32·2	Ealing	3·8	18·3
BARNSLEY	10·0	30·3	SOUTHEND-ON-SEA	3·6	18·5
STOKE-ON-TRENT	8·6	31·3	HASTINGS	5·5	14·5
LIVERPOOL	10·1	29·8	EASTBOURNE	4·3	16·0
PRESTON	5·6	23·9	BATH	4·8	15·7
OLDHAM	7·2	23·0	OXFORD	2·4	17·7
SALFORD	10·1	27·1	READING	3·1	20·9
WALSALL	7·2	30·0	Swindon	2·2	23·5
WEST BROMWICH	12·2	29·5	EAST HAM	6·4	25·5
MANCHESTER	7·2	25·7	Walthamstow	7·4	24·4
ROTHERHAM	8·2	30·2	Cambridge	2·3	19·5
BOOTLE	9·2	30·0	Wimbledon	4·0	19·2
GATESHEAD	33·7	29·2	CROYDON	4·3	21·9
SHEFFIELD	8·4	28·2	SOUTHPORT	3·5	15·2
DUDLEY	15·0	28·6	Gillingham	2·3	22·5
SUNDERLAND	32·6	30·9	Leyton	5·5	22·3
Rhondda	5·6	33·1	WALLASEY	3·3	22·1
NOTTINGHAM	4·3	22·7	Willesden	13·0	24·8

Smaller Towns.

Small towns with the twenty highest death-rates, 0–5	Per cent. of over-crowding (Census, 1911)	Birth-rate, 1913	Small towns with the twenty lowest death-rates, 0–5	Per cent. of over-crowding (Census, 1911)	Birth-rate, 1913
Ince-in-Makerfield	16·5	35·7	Southgate	1·7	18·8
Stalybridge	5·0	23·7	Finchley	4·4	21·7
Ashton-under-Lyne	4·9	23·2	Tunbridge Wells	2·9	15·4
Bilston	13·0	34·5	Reigate	3·0	15·8
Leigh	8·0	27·9	Woking	3·8	19·9
Hindley	10·4	29·3	Rugby	1·3	20·9
Farnworth	6·6	22·8	Weymouth	2·4	19·6
Widnes	12·6	31·9	Sutton	3·6	17·0
Stanley	34·2	32·5	Sutton Coldfield	2·1	19·2
Chorley	5·3	23·7	Beckenham	3·0	17·8
Blaydon	41·2	32·8	Bromley	3·3	17·5
Newcastle-under-Lyme	9·4	27·9	Worthing	1·9	15·7
Tipton	16·8	34·2	Hendon	8·8	25·6
Wednesbury	9·8	29·8	Salisbury	1·2	20·9
Hartlepool	28·3	32·3	Guildford	2·1	19·6
Swinton and Pendlebury	7·9	23·8	Harrogate	3·5	16·6
Castleford	13·0	32·0	Barnes	4·7	22·0
Oldbury	9·6	30·6	Wood Green	5·1	22·2
Tredegar	12·9	32·4	Folkestone	3·0	18·3
Hebburn	42·1	37·2	Colchester	1·8	19·8
Ashington	32·2	37·1	Watford	2·8	20·3
Hyde	4·5	21·6	Winchester	2·6	17·6

Metropolis.

	Per cent. of overcrowding (Census, 1911)	Birth-rate, 1913
Shoreditch (241)*	36·5	31·5
Finsbury (216)	39·9	29·5
Bermondsey (201)	23·4	30·6
Bethnal Green (201) ...	33·2	30·7
Poplar (195)	20·6	31·9
Southwark (192)	25·9	30·8
Stepney (191)	35·0	29·2
Holborn (152)	25·6	16·6
St Pancras (151)	25·4	25·3
City of Westminster (131)...	12·9	14·1
Woolwich (128)	6·3	23·1
Chelsea (128)	14·9	19·1
Stoke Newington (121) ...	8·8	22·3
Lewisham (116)	4·0	20·4
Hampstead (112)	7·1	15·1

* The figures in brackets give the death-rates per 1000 births among children aged 0–5.

ventilation, implies chronic exposure to a stuffy dusty atmosphere, with excessive changes of temperature; it implies also, in most instances, that the food is stored under unsatisfactory conditions, and is often partially decomposed before being consumed. In tenement dwellings the storage of house refuse as well as of food in and close to the living room adds to the possibilities of mischief.

Domestic cleanliness is often rendered extremely difficult by the immediate surroundings of the dwelling. The yard may be unpaved or imperfectly paved. The sanitary conveniences, whether privies, pails, or water-closets, may be in an unsatisfactory condition, and give off noxious effluvia. From these sources, or from the yard into which the slop water may have been thrown, organic filth is trodden into the house.

Similar domestic contamination may come from unpaved or unscavenged streets, or from streets only imperfectly scavenged. Household refuse in some cases has to be taken through the house or even through the living room to the scavenger's cart. Infective material may be blown into the house, or may be brought in on shoes or boots or skirts, or carried in by flies bred in fixed ashpits or in other accumulations of refuse.

This statement illustrates the conditions of domestic infection to which the child, and especially the bottle-fed infant, is often exposed. The one condition common to all forms of domestic and municipal

insanitation is the risk to the child of inhalation or swallowing of harmful organic matter. It is not difficult to understand how these evils may occur in various insanitary circumstances, *e.g.*, when there is a foul privy or pail closet, an unpaved yard liable to contamination by slop water and other organic matter, or in a third storey tenement the occupier of which has to store house-refuse on the landing, and has no water supply or sanitary conveniences nearer than the ground floor.

Overcrowding on area and in dwellings, an excessive proportion of tenemented dwellings, and the associated difficulties in securing the elementary necessities of a cleanly and sanitary life, explain the exceptionally unfavourable position of Shoreditch among the metropolitan boroughs. Poverty is, of course, responsible for some of these conditions, but the converse is true, perhaps to an even greater extent, because of the readiness with which these conditions breed disease. If the conditions were ameliorated, the evils of poverty would be reduced. Much remains to be done in this and other metropolitan boroughs to improve the sanitation of tenemented dwellings.

In London, as elsewhere, anomalies occur in the relation between overcrowding and child mortality, as may be seen by reference to the table on p. 77. As a rule, however, the boroughs showing the highest degree of overcrowding have the highest child mortality. The anomalies are in part explicable by the fact that in some boroughs the population is more widely spread out, and a relatively larger proportion of the tenements with less than four rooms are self-contained houses.

The following seven metropolitan boroughs have the highest child mortality in London:

	Deaths under 5 per 1000 births	Proportion per cent. of tenements with less than 4 rooms	Proportion per cent. of overcrowded tenements
Shoreditch	241	73·6	36·5
Finsbury	216	80·8	39·9
Bermondsey	201	61·2	23·4
Bethnal Green	201	70·5	33·2
Poplar	195	58·2	20·6
Southwark	192	71·1	25·9
Stepney	191	67·5	35·0

The prevalence of diarrhoeal diseases is closely related to defective housing and to insanitation.

Industrial Employment of Married Women.

As stated previously in the report on Lancashire (p. 19), it is reasonable to believe that the industrial occupation of women, in so far as it exposes the pregnant mother to laborious work and strain, and in so far as it separates the infant from its mother, thus not only preventing suckling but also diminishing the individual care which the mother can devote to her infant, must tend to increase infantile sickness and mortality. In the textile districts industrial occupation of expectant or nursing mothers is seldom rendered necessary by poverty.

It would appear that the earlier children of such mothers are "minded" by a neighbour or some other person who undertakes this work for payment, until, as the family increases, the economic balance is altered and it becomes more profitable for the mother to stop at home than to go to the mill.

In a wider sense all industrial occupation of women, whether married or unmarried, may be regarded as to some extent inimical to home-making and child care. This is so, even in the case of girls, and it is important therefore that their industrial employment should be associated with systematic training in domestic economy.

This cause of excessive child mortality has been considered in preceding reports to the Board on child mortality.

In the first of these reports it was shewn that when the statistics of large communities are considered, the effects of the industrial occupation of women are concealed by the preponderant action of other adverse influences; a result not surprising in view of the fact that these latter influences affect either the entire population or a large portion of it, while usually a smaller section of the maternal population and their infants is affected by the industrial occupation of married women. The more general conditions affecting injuriously the welfare of young children are lack of medical care and nursing, defective housing (including deficient domestic food storage and uncleanliness), defects of domestic and municipal sanitation, crowding of persons on area, and carelessness or neglect of mothers, induced often by alcoholism or by overwork. These have already been considered.

That other evil conditions preponderate over the industrial occupation of married women as influencing child mortality is shewn in the statistics contained in this report. This may be illustrated by the experience of the towns enumerated in parallel columns below, the figures giving the total death-rate for each town at ages 0–5.

TOWNS WITH VERY EXCESSIVE CHILD MORTALITY.

(*a*) *Towns with a high percentage of extra-domestic occupation of married women.*

BURNLEY	257
WIGAN	254
Ashton-under-Lyne ...	247
Farnworth	235
Chorley	229
PRESTON	225
OLDHAM	223
SALFORD	219
MANCHESTER	214
Batley	208
Heywood	205
BLACKBURN	202
LEEDS	202
BURY	200
BOLTON	200
BIRMINGHAM	200

(*b*) *Towns with little extra domestic occupation of married women.*

Ince-in-Makerfield ...	288
MIDDLESBROUGH	251
ST HELENS	242
BARNSLEY	241
STOKE-ON-TRENT	239
Bilston	237
Widnes	231
Newcastle-under-Lyme ...	224
Wednesbury	221
Hartlepool	217
WALSALL	216
WEST BROMWICH	215
ROTHERHAM	213
Oldbury	212
Tredegar	211
GATESHEAD	211
SHEFFIELD	209
DUDLEY	209
Rhondda	207
SUNDERLAND	207
Ashton-in-Makerfield ...	202
Stockton-on-Tees	201
MERTHYR TYDFIL	200
Ebbw Vale	200

It will be seen that, although child mortality is very excessive in many textile towns in which there is a high proportion of industrial occupation of married women, it is even more excessive in some towns in which married women are seldom employed industrially. Several inferences may be drawn from these facts.

First. Among these inferences it is not justifiable to state that the industrial occupation of married women is not inimical to the health and welfare of their children. Cases in which a mother engaged in extra-domestic employment can provide adequate substitutional care for her children are exceptional. Such care cannot prove adequate

for an infant during the period of suckling, and industrial employment during pregnancy involves risks both to mother and infant. Except during periods of unusual industrial activity women generally remain at home until their infants are six months old. Hence the industrial employment of the mother affects particularly the health of the second half of infancy and of young children between 1 and 5 years old.

It may occasionally happen also that under circumstances of extreme poverty the money earned by the mother, who has to leave her infant for this purpose, may have greater influence in reducing infant mortality than the mother would be able to exercise under the circumstances of still deeper poverty which her stay at home would have meant. It will be agreed, however, by all, that under such circumstances the industrial employment of mothers is a serious evil, though it may be the lesser of two evils, the other being partial starvation for mother and infant.

Second. It being accepted that the industrial employment of the mothers of young children is, as a rule, mischievous, it may be inferred that the sanitary and social influences, apart from industrial occupation which endanger child life, are somewhat more numerous or more serious in such towns as Ince-in-Makerfield (288), and Middlesbrough (251), than they are in Burnley (257), in which there is the added danger associated with a large amount of industrial employment of women.

It may similarly be inferred that in such towns as St Helens (241), Stoke-on-Trent (239), Bilston (237), and Widnes (231) as well as in the large number of mining districts and of districts in which chemical industries, pottery works, and iron and steel manufactures are carried on, sanitary and social conditions, apart from industrial employment of mothers, are inferior to those of many of the textile towns which have an approximately equal child death-rate.

Third. There are great variations in child mortality in the towns in which there is large industrial employment of married women. This again appears to support the conclusion that the industrial employment of married women in numerous instances is a less potent factor in producing a heavy child mortality than other sanitary and social circumstances adversely affecting child life.

Size of Family in relation to Child Mortality.

That there is a common association of a relatively low birth-rate and a relatively low rate of infant mortality is shewn by our national statistics; and a corresponding association between high birth-rates

and high rates of infant mortality is frequently seen. Much more exact data on this important point will be available when the elaborate statistics as to fertility in different social strata, prepared in the General Register Office, are published. Meanwhile, there are available certain figures, published in the Registrar-General's annual report for 1911, which give valuable information. The following are illustrations of these statistics. The birth-rates are stated per 1000 married men in each social group:

	Birth-rate	Death-rate under one year per 1000 Births
Earthenware workers	84	172
Miners	107	160
Textile workers	50	148
Medical practitioners	52	39

On the strength of these and similar figures Dr Stevenson comments as follows: "The educated and comfortable classes have few children, of whom, under the favourable conditions provided, few die; unskilled labour produces many children, and loses a large proportion of them."

During recent years the decline of the birth-rate and the decline of child mortality have proceeded almost *pari passu*. This is shewn in the following table. Under each heading the relative rate for the period 1871–75 is given as 100:

	1871 to 1875	1876 to 1880	1881 to 1885	1886 to 1890	1891 to 1895	1895 to 1900	1901 to 1905	1906 to 1910	1911 to 1914
Legitimate births per 1000 married women, 15–45	294·6 = 100	100	95	91	88	83	78	72	66
Death-rate under 5 years per 1000 of population 0–5	64·9 = 100	96	87	88	89	89	77	64	58
Death-rate under one year per 1000 births	153 = 100	95	91	95	99	102	91	77	72

The question as to what is the character of the relationship between these fairly correspondent events has been mentioned in previous reports, and there is room for much difference of opinion. In my first report it was noted that comparisons of single counties show striking differences between the height of the infant death-rate and of the birth-rate. Thus, although in Durham, Glamorgan, and Northumberland both birth-rate and infant death-rate were in excess to about the same extent, the birth-rate in the West Riding was 5 per cent. below and its infant death-rate 8 per cent. above the average, the birth-rate of Lancashire was 1 per cent. below and its infant death-rate 22 per cent. above the average.

The figures in the present report bearing on this point are interesting. In a large number of towns, as shewn below, there is coincidence of relatively high birth-rate and relatively high child mortality at ages 0–5.

HIGH BIRTH-RATES AND HIGH CHILD DEATH-RATES.

	Birth-rate
Ince-in-Makerfield (288)	35·7
Bilston (237)	34·5
Tipton (222)	34·2
Rhondda (207)	33·1
ST HELENS (242)	32·2
Poplar (195)	31·9
Shoreditch (241)	31·5
Stoke-on-Trent (239)	31·3
SUNDERLAND (207)	30·9
Southwark (192)	30·8

The experience of the following towns shews that a high child mortality may be associated with a low birth-rate:

LOW BIRTH-RATES AND HIGH CHILD MORTALITY.

	Birth-rate
BOLTON (200)	21·8
BLACKBURN (202)	21·8
NOTTINGHAM (206)	22·7
BURNLEY (257)	22·8
OLDHAM (223)	23·0
LEEDS (202)	23·2
PRESTON (225)	23·9

The coincidence of low birth-rate and of low child death-rate is very usual, as may be seen by reference to the tables on p. 76.

There are no illustrations of a very high birth-rate and a low child death-rate among the towns enumerated in the appendices to this report. The most striking instance of a very low infant mortality with a very high birth-rate, when corrected for age distribution and marital condition, is furnished by Ireland, but this is secured under circumstances of life which are chiefly rural.

On a review of all the circumstances it does not appear necessary to alter materially the conclusion stated in previous reports, that the

connection often observed between a high birth-rate and a high rate of child mortality is probably due in great part to the fact that large families occur chiefly among the poorest classes, who are specially exposed to the influences producing excessive child mortality, while small families occur chiefly among the well-to-do, who might reasonably be expected to experience low rate of child mortality even if their families were larger.

Two further remarks should be made. If a large family implies such a degree of poverty as to produce deficient nutrition of mother or child, the child's prospects of health and life must be reduced. Short of this extreme poverty, it is evident that if a large family implies maternal overwork and insufficient attention to domestic cleanliness and to personal hygiene generally, the same result will be favoured.

Notwithstanding the general coincidence between declining birth-rate and declining child mortality in recent years, the numerous exceptions to this association quoted above do not permit of the conclusion that restriction of the birth-rate should play a part in the prevention of excessive child mortality. There is no reason to doubt that in the residential towns and suburbs, for instance (see table on p. 76), in which the association between low birth-rate and low child mortality is most obvious, larger families, which are nationally desirable, would be associated with a continuance of relatively low child mortality.

In recent years there has been a rapidly increasing intentional restriction of the size of families; and, as the standard of comfort of the population advances, the tendency in this direction becomes accentuated. There appears to be little prospect of abatement of this process. It appears likely that ere many years have passed the voluntary restriction of families will be the common practice in nearly all social grades, unless it becomes economically profitable to have large families, or unless steps are taken to diminish the expenditure involved by large families. Among the most important directions in which additional provision is needed are a skilled midwifery service readily available, adequate maternity nursing, and the provision of nursing and other assistance when the mother's solitary efforts are unequal to the domestic task.

II. SUMMARY OF ACTIVITIES IN MATERNITY AND CHILD WELFARE WORK.

For the convenience of workers concerned with the conservation of the life and health of mothers and their young children a catalogue of present activities and of further activities on the part of local authorities and others, which would conduce to this end, is here given.

The activities particularly concerned may be divided into four groups:

1. Housing.
2. Intra-domiciliary and extra-domiciliary sanitation.
3. Food supplies.
4. Medical assistance, including nursing.

The first three of these need not be set out in full.

Housing.

No family can be regarded as housed under conditions which fulfil the needs of health unless the house or tenement provides adequate sleeping accommodation, and comes up to the following minimum standard in other respects:

1. An adequate kitchen and living room, possibly the two combined.
2. Cool and dustless storage for food.
3. A scullery with sink and water supply within the dwelling.
4. Satisfactory storage for coal and a movable covered ashbin.
5. Separate sanitary conveniences for each family.

Cleanliness and avoidance of food contamination cannot reasonably be expected unless these conditions are fulfilled; and the list of requirements here set out cannot be regarded as completing what is desirable.

Sanitation.

1. In towns the closet should be a water-closet.
2. The back yard, or at least the portion abutting on the house, and a path leading to the street, should consist of impervious material.
3. Street scavenging must be satisfactory.
4. Every aid to domestic cleanliness as by accessible water supply and ready disposal of "slops," must be available.

In this connection the importance of the use of overalls and of the provision of baths for the cleansing of workers, *e.g.*, of miners, before they return from their work, needs much greater attention than it has hitherto received.

Food Supplies.

Aids to the satisfactory storage of food after it reaches the home have been indicated above. Precautions against access of dust and flies to milk should be universally adopted.

The preparation of food under proper conditions depends largely on the provision of satisfactory cupboards and food stores, and on ready access to water supply.

The provision of a pure milk supply is largely out of the control of the individual householder; in regard to this, as well as to many of the items of housing and sanitation enumerated above, the local authority cannot divest itself of serious responsibility.

Until or unless it can be guaranteed that cow's milk is derived from cows which have been proved to be free from tuberculosis it is important that mothers should be advised to boil all milk before it is given to infants and young children.

Medical Assistance, including Nursing.

Fuller detail is given under this heading, as it is the part of maternity and child welfare work which in the past has received least attention, and as it is the part of this work in which under present circumstances there are the greatest possibilities of saving life and of preventing illness and disablement.

It has been stated in a previous chapter that in degree of ignorance there is little if any difference between the wives of wage-earners and the wives of men belonging to other classes. *The difference, apart from the handicap of the former in respect of housing, food supply, and sanitation, in the main is one of ability to secure the assistance required in the various contingencies of maternity and early childhood.*

What is the assistance required, and how can the local authority and their officers become advised of the need?

In order that assistance may be available it is necessary that the officers of the local authority and the mother should be brought into relation with each other.

The chief means for this are furnished under the Midwives Act and the Notification of Births Acts.

Midwives Act.

The Midwives Act regulates the practice of midwives who attend more than half of the total confinements in England and Wales, these being, as a rule, the confinements in which the additional medical and nursing assistance considered under this section are most needed.

The local supervising authorities under the Midwives Act are the county borough councils, the county councils, and those councils within county areas to whom county councils have delegated their functions under this Act.

It is the duty of the local supervising authority—

(*a*) To exercise general supervision in accordance with the rules of the Central Midwives Board over all midwives practising in their area;

(*b*) To investigate charges of malpractice, negligence, or misconduct, on the part of any midwife practising within their area, and, if a *primâ facie* case is established, to report the same to the Central Midwives Board;

(*c*) To suspend any midwife from practice, in accordance with the rules of the Central Midwives Board, if this appears necessary to prevent the spread of infection;

(*d*) To report at once to the Central Midwives Board the name of any midwife practising in their area convicted of any offence;

(*e*) To keep a roll of midwives practising in their area, and to report the death or change of address of any midwife to the Central Midwives Board;

(*f*) So far as practicable, to give due notice of the effect of the Act to persons at present using the title of midwife.

It is evident that the above duties, if fully carried out, have most important bearing on the prevention of mortality and on the diminution of suffering in child-bearing, as well as on the prevention of infant mortality. Much information as to the administration under the Midwives Act will be found in the annual reports of the Central Midwives Board, on pp. 137–148 of the *Report on Infant Mortality in Lancashire* (Cd. 7511), and on pp. 60–104 of the *Report on Mortality in connection with Childbearing* (Cd. 8085). There is large scope for more exact and detailed work in many administrative areas.

Rules of Central Midwives Board for Midwives.

The individual midwife has most important duties in relation to maternity and child welfare schemes, and more generally to the work of local supervising authorities, and the part which she can take in this work will steadily increase as time goes on.

Training of midwives. An important step forward has been taken by the authorisation by the Privy Council of an extension of the period of training required before a woman can be examined by the Central Midwives Board with a view to her obtaining a certificate of qualification for practice. The period of training must now extend over a period of not less than six months; certain classes of nurses, however, only being required to undergo four months' special training.

The new rules framed by the Central Midwives Board, and approved by the Privy Council on 23rd June, 1916, contain important directions for midwives bearing on maternity and child welfare work.

It is convenient to summarise here the new rules, so far as they relate to this subject.

Ante-natal work of the midwife. In the first rule (E. 1) it is stated that—

> When engaged to attend a labour the midwife must interview her patient at the earliest opportunity to inquire as to the course of the previous pregnancies, confinements, and puerperia, both as regards mother and child, and to advise as to personal and general arrangements for the confinement, and, with the consent of the patient, visit the house.

Register. By Rule 24 the midwife is required to keep a register in the following form:

No.
Date of expected confinement.
Name and address of patient.
Age.
Number of previous labours and miscarriages.
Date and hour of midwife's arrival.
Presentation.
Date and HOUR of child's birth.
Sex of infant. Born living or dead.
Full time or premature. Number of weeks.
Name of doctor, if called.

Complications (if any) during or after labour.
DATE OF MIDWIFE'S LAST VISIT.
Condition of mother then.
Condition of child then.
Remarks[1].

This register comprises a statement of any previous labours or miscarriages of the patient, and can thus be made the basis of valuable instruction to the midwife by the inspector of midwives as to the circumstances in which she should recommend patients to seek medical advice.

This principle is accentuated by the following note, immediately preceding Rule 1, which, although not stated in an obligatory form, must in the future have great influence in leading midwives to secure medical advice for their patients as required. The note is as follows:

> NOTE. Whenever illness or abnormality has occurred in the previous pregnancy, and whenever the previous pregnancy has ended in an abortion, a premature labour, or a still-birth, the midwife, on being engaged to attend the patient in her next confinement, should explain that the case is one in which skilled medical advice is required, and should urge the patient to seek advice from her medical attendant, or at a hospital or other suitable institution.

From the present point of view Rule 20 is also important:

> 20. In all cases of illness of the patient or child, or of any abnormality occurring during pregnancy, labour, or lying-in, a midwife, as soon as she becomes aware thereof, must explain that the case is one in which the attendance of a registered medical practitioner is required, and must hand to the husband or the nearest relative or friend present the form of sending for medical help (see Rule 23 (*a*)), properly filled up and signed by her, in order that this may be immediately forwarded to the medical practitioner or approved institution.

So far as pregnancy is concerned, this rule particularly applies to the following specified conditions:

Deformity or stunted growth.
Loss of blood.

[1] If any drug, other than a simple aperient, has been administered in any way, state here the name and dose of the drug, and the time and cause of its administration. (See Rule 19.)

Abortion or threatened abortion.
Excessive sickness.
Puffiness of hands or face.
Fits or convulsions.
Dangerous varicose veins.
Purulent discharge.
Sores of the genitals.

Notification of Births.

The notification of births within thirty-six hours enables visits to be made on behalf of the Public Health Authority as early after notification as is thought necessary. Whether the first visit need be made during the time when the midwife is in charge of the patient will be decided by the medical officer of health in the light of his knowledge of the particular circumstances of each case. As stated in my *Memorandum on Health Visiting*, etc., an immediate visit after notification will become less generally necessary "when all midwives are prepared to give the best advice to the mother respecting the management of her infant." It is indispensable for successful co-operation that a friendly relationship should exist between the midwife and the health visitor, and in bringing this about the superintendent of midwives, if not the same person as the health visitor, can be most helpful both in regard to individual cases and by arranging opportunities for collective discussion of difficult points.

Rule 12 of the Central Midwives Board makes the midwife—

> Responsible for the cleanliness, and for giving all necessary directions for securing the comfort and proper dieting of the mother and child during the lying-in period, *i.e.*, normally for ten days after the labour;

and the following important note is added to this rule:

> NOTE. The midwife should endeavour to promote breast feeding, and should, when breast feeding cannot apparently be continued, urge medical advice.
>
> Many Public Health Authorities now provide health visitors, maternity centres, or baby welcomes for the assistance of mother and child. It is desirable that the midwife when she ceases attendance should advise the patient to avail herself of such help.

Notification of still-births. Under the Notification of Births Acts, still-births after the twenty-eighth week of pregnancy are required to

be notified to the medical officer of health. Midwives are required under Rule 22 of the Central Midwives Board to notify still-births to the local supervising authorities in all cases where a registered medical practitioner is not in attendance at the time of birth. In regard to midwives there is no limitation of this duty to still-births occurring in the latter part of pregnancy, and the form of notification prescribed by the Central Midwives Board requires that the month of pregnancy, and the condition of the child (whether macerated or not), shall be stated.

Already much valuable inquiry is being made by some local authorities into the circumstances under which still-births have occurred; and by bringing these cases into relation with the work of the maternity centre or, apart from this, by securing examination of pathological material, there is a good prospect of action which will secure improvement in the health of mothers and secure the live-birth of a larger number of infants.

It is scarcely necessary to summarise the duties of the midwife in regard to the mother and child during the lying-in period, as set out in the rules of the Central Midwives Board, though these evidently have important bearing on maternity and child welfare work.

The various forms of public medical and nursing work in connection with maternity and child welfare, and the conditions calling for them, may now be enumerated.

I. PRE-MATERNITY WORK.

This includes arrangements as to

**Hygiene of the mother*, especially as to feeding, condition of teeth, fatigue, possibilities of infection, conditions of housing;

**Instruction of the mother*, as by health visitors and at maternity centres;

Feeding of the mother when required by voluntary funds;

**Treatment of the mother* at the maternity centre or in a pre-maternity ward of a hospital, provided or contracted for by the local authority. This may be required for many minor ailments, the treatment of which will improve the health

* All the items marked with an asterisk come within the scope of the Regulations of the Local Government Board as to grants for Maternity and Child Welfare; and grants covering one-half of the total expenditure will be made in respect of approved expenditure under these headings for work carried on to the satisfaction of the Board.

prospects of the mother and her infant. On these, see p. 23 of *Memorandum on Health Visiting*.

The treatment of dental caries and of oral sepsis comes within the scope of this work.

Treatment may also be required *inter alia* for the conditions enumerated on p. 91, which the midwife has to notify to the local supervising authority. When such notification takes place there should be inquiry by the local supervising authority, and the necessary steps should be taken to ensure the requisite medical assistance and nursing.

An important form of preventive treatment consists in periodical examination of urine, with a view to averting eclampsia.

The pre-maternity ward of, or beds in, a hospital should be available for major complications of pregnancy, *e.g.*, vomiting of pregnancy, haemorrhages, eclampsia, and for conditions requiring Caesarean section or the induction of premature labour.

**Treatment of the mother for special diseases.* See under XI. and XII.

Notification of pregnancy. This is not advised, except under the restricted conditions stated on p. 22 of the *Memorandum on Health Visiting*, etc.

II. Still-births and Abortions.

Information as to these is received by notification. Judicious inquiry made through the private practitioner, or very carefully when there is no private doctor, will be valuable for the mother.

*(*a*) Examination of products of pregnancy may show spirochaetes of syphilis. (See under XII.)

*(*b*) Examination of maternal blood may give a positive result to the Wassermann test. (See under XII.)

Examinations into the incidence and the circumstances of still-birth may throw light on the competence of a particular midwife.

Occasionally, infants live-born are returned as still-born.

* Items marked thus form the subject of grants from the Local Government Board apart from Maternity and Child Welfare schemes. For approved expenditure on tuberculosis 50 per cent., and for approved expenditure on venereal diseases, 75 per cent. of the total expenditure is paid by the Board.

*The provision of a maternity nurse for cases of abortion in the patient's own home is very important in obviating subsequent disablement of the patient.

*The provision of hospital treatment for some of these cases is also greatly needed.

III. CHILDBIRTH.

It is important to ascertain in each area that an adequate service of midwives is available.

*If this is not so, steps should be taken by the council directly or through a nursing association, as explained in the Board's circular of 23rd September, 1916, to supplement this service.

*The local authority may with the Board's sanction, under Sec. 133 of the Public Health Act, 1875, provide a midwife and a doctor when necessary for necessitous women in their confinements. When this has been done midwives and doctors should be informed of the arrangements.

*The provision of hospital beds for women in complicated childbirth is most important. A great increase of this accommodation would greatly reduce mortality in childbirth and disablement after childbirth. Grants are available for this purpose when the beds are provided or contracted for by the local authority.

IV. THE LYING-IN PERIOD. THE MOTHER.

*It should be made known that the local authority can provide a qualified maternity nurse in necessitous cases by the local authority or by a voluntary society, *e.g.*, a nursing association.

For the mother confined at home, voluntary assistance by means of societies providing "home helps" is most valuable. At present this help is largely given by neighbours, but it is commonly inadequate to secure sufficient rest and freedom from anxiety for the mother.

*The local supervising authority should, through the medical officer of health and the inspector of midwives, endeavour to get into personal touch with midwives while they are in attendance after confinements in a much larger proportion of cases than is now commonly done.

*Hospital treatment may be required during this period for certain complications.

*This treatment is particularly important for a large proportion of cases of puerperal pelvic infection (puerperal fever). It may be given

* See footnote on page 92.

at the isolation hospital, or in a general or women's hospital. It is important always to have one or more beds available for this purpose.

Careful investigation of the source of each case of pelvic infection is required on the part of the medical officer of health. This should be undertaken in co-operation with the doctor or midwife in attendance.

Attention is drawn to the case mortality of puerperal fever [see p. 27 of *Report on Maternal Mortality in connection with Childbearing* (Cd. 8085)], which varies greatly in different areas. Persistent efforts should be made to establish such arrangements with medical practitioners as will ensure notification of each case of puerperal infection.

V. The Lying-in Period. The Infant.

A special risk to the infant during this period is ophthalmia neonatorum. The rules of the Central Midwives Board require that information should be sent to local supervising authorities as to "inflammation of, or discharge from, the eyes, however slight." They also require the midwife to hand to the husband or the nearest relative or friend the form of sending for medical help [Rule 23 (*a*)]. Every medical practitioner called in to a case of ophthalmia neonatorum which has not been previously notified to the local medical officer of health is required to notify it. Unless the case has already been notified by a medical practitioner it is the duty of the midwife to do so.

*It is important that the local authority should offer facilities for prompt bacteriological examination of pus from the eyes of infants. (See under XII.)

*Also that they should when needed provide nurses for these cases under medical supervision. Prompt action on these lines is necessary to save eyesight.

*If this treatment cannot be carried out effectively at home the infant and the mother should both be removed to a hospital. Grants are available for such hospital treatment when provided or contracted for by the local authority.

In some areas one out of every 25 infants born die in the first week after birth, and in other areas only one out of every 60 born die in the first week of extra-uterine life [see p. 27, *Second Report on Infant Mortality* (Cd. 6909)]. Evidently there are unfavourable circumstances not solely ante-natal, but in large measure natal and post-natal, which

* See footnote on page 92.

medical and hygienic supervision during this period might reduce. Local investigation of this excessive mortality in the first week (and in the first month) of life is greatly needed.

VI. The Nursing Mother.

Much illness and disability is due to the nursing mother not having adequate assistance in domestic work. Co-operative effort should do much to diminish this difficulty by a system of home helps working from house to house. The mother often cannot successfully cope with the needs of a large family and of an infant, especially if the infant has to be artificially fed.

*Under the Local Government Board's regulations in aid of maternity and child welfare work, aid is offered for a centre providing "medical supervision and advice for expectant and nursing mothers, and for infants and young children, and medical treatment at the centre for cases needing it."

*Similar provision is made for "hospital treatment, provided or contracted for by a local authority, for complicated cases of confinement or complications arising after parturition, either in the mother or infant, and for infants found to need in-patient treatment."

*When disability of nursing mothers results from parturition hospital treatment can be provided under the Board's regulations.

Good work is being done by voluntary agencies in providing meals, or a daily supply of milk for nursing as well as for expectant mothers.

VII. The Infant and Child to the Age of 5.

*The most important first task is the appointment of a staff of health visitors who will be sufficient in number to visit each infant at intervals during infancy, and keep in touch with the child and its mother by home visiting and by attendance at a child welfare centre until school attendance begins.

As already indicated, health visitors are needed for expectant and nursing mothers as well as for young children. There is much in favour of this work being carried out throughout by the same visitor, but local circumstances and the qualifications of the visitor will need to be considered in deciding whether this is to be the case.

The health visitor may also be tuberculosis nurse or school nurse.

* See footnote on page 92.

In scattered areas it may be desirable to appoint the district nurse as health visitor.

*Infant Consultations, including medical treatment for children requiring it, should be provided. At these Consultations all the children should at intervals be kept under medical supervision.

*The treatment given at these child welfare centres may include the treatment of such conditions as adenoids, dental caries, etc.

For these purposes a combination may be able to be arranged between the work of the child welfare centre and the school clinic.

VIII. The Supervision of Illegitimate Children, etc.

Illegitimate births formed 4·2 per cent. of the total births in England and Wales in 1914, and the death-rate of illegitimate infants is twice as high as that of legitimate infants.

There is great need for increased supervision of the welfare of illegitimate children.

The aim should be, whenever practicable, to prevent the separation of the mother from her infant during the first year after birth. This has important moral value as well as value in securing continued parental care. There is large scope for increased voluntary work in this connection.

Institutions for the reception of infants, especially of illegitimate infants, generally experience a very heavy death-rate. A system of home visiting of the mothers or foster-mothers, adequately supervised, in most instances is preferable to such institutions.

The Children Act outside the metropolis is administered by the Boards of Guardians. If the inspectors under this Act are not also the health visitors of the local authority, their work should be carried on in close co-operation with the latter.

IX. Relation to General Sanitary Work.

During pregnancy it is important that the condition of the home as to cleanliness within and about the house, and as to overcrowding, as well as preparations for childbirth, should be made satisfactory. During childbirth, and for children under five the importance of domestic sanitation can scarcely be exaggerated.

To aid in securing normal childbearing and healthy childhood it is important that each of the items enumerated on pp. 85 to 91,

* See footnote on p. 92.

should be satisfactory. This work is amongst the most important duties of the health visitor, and her report to the medical officer of health should always include a statement on the above items.

X. RELATION TO EDUCATIONAL WORK.

Collective instruction of mothers is necessarily much less useful than individual counsel directed to the needs of the individual mother or child. But at centres at which mothers attend, teaching in the elements of hygiene, in cooking, dressmaking, and domestic economy forms a valuable auxiliary to the more essential branches of maternity and child welfare work.

XI. TUBERCULOSIS.

*In special cases, mothers and their children should be referred to the tuberculosis officer for special treatment.

In such cases the official machinery for inquiring into home conditions and for examination of "contacts" should be utilised.

XII. VENEREAL DISEASES.

*Syphilis is a common cause of abortion and miscarriage; hence the importance of utilising the facilities provided under official schemes for the treatment of these diseases for:

(*a*) Clinical examination of patients.
(*b*) Confirmatory diagnosis by examination of foetal material or by the Wassermann test.
(*c*) Treatment of patients.

Syphilis is a common cause of malnutrition and disease in infancy and childhood, and when such evidences of this disease as mucous tubercles or interstitial keratitis are found, the patients should be referred to the special treatment centre.

When the confidence of the mother has been secured, an effort should be made to have other members of the family examined with a view to their treatment if this is found to be necessary.

*Gonorrhoea in the mother may cause ophthalmia neonatorum in the infant, which is considered in paragraph V. The condition of the mother should also receive attention.

* See footnote on page 91.

XIII. Measles.

The Local Government Board's regulations as to measles open up new possibilities of diminishing the heavy loss of child life from this disease.

*The visitation of cases of measles should be undertaken, when practicable, by health visitors.

*The further care of selected cases of measles by providing, when necessary, medical attendance and nurses, forms an important part of child welfare work.

Hospital provision for selected cases is also of great value.

XIV. Whooping-cough.

In the Board's circular letter of 31st March, 1915, the offer is made to enable any sanitary authority to secure the notification of this disease, on the lines of the Measles Regulations.

*Health visitors can undertake valuable work in securing precautions against infection and against serious complications.

For both measles and whooping-cough there is need for organisation of supervision during convalescence.

Convalescent homes for children who have recently recovered from these diseases would be of immense benefit in avoiding deafness, and in decreasing the likelihood of subsequent development of tuberculosis.

In visiting cases of measles and whooping-cough the risks of unboiled milk in causing tuberculosis should be explained.

XV. Diarrhoeal Diseases.

*The work of health visitors and of child welfare centres should greatly diminish these diseases.

Each June and July, before the diarrhoeal season begins, a special campaign should be organised to minimise diarrhoea. This will be (*a*) general, (*b*) special and individual. The general measures are those of general sanitation and of protection of the milk supply. The individual measures should be directed specially to the children under two years old whose addresses are known from the Notification of Births Register and the subsequent visits of health visitors.

In some areas notification of cases of summer diarrhoea has been arranged, but so far the action taken in most of these areas has not

* See footnote on page 91.

been so complete as to prove the value of notification. Special visits in July to infants in the poorer streets are desirable. Attention should be concentrated especially on bottle-fed infants. These will have been previously noted in the records of the health visitor. Personal instruction to each parent is much more efficacious than the delivery of leaflets of advice or any form of theoretical instruction.

If the health visitor is in sympathetic touch with parents, voluntary information of the occurrence of diarrhoea is often given to her.

With the sanction of the Local Government Board medical and nursing assistance may be afforded.

*For some patients removal to hospital greatly improves their prospects of recovery. Grants are available for beds specially provided by the local authority for diarrhoeal patients sent from the child welfare centre.

* See footnote on page 91.