MATERNITY AND CHILD WELFARE SERVICES IN THEIR RELATION TO PUBLIC HEALTH*

BY

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It is difficult on this occasion to escape the temptation to trace the work which has been done for the welfare of women and young children during the past hundred years. The year 1832 found industrial conditions firmly established in this country ; the factory system had replaced home labour. Both men and women were employed in the mills, and children, even so young as 7 and 8 years, accompanied their parents and were subject to all the disabilities and dangers attaching to ill-paid, arduous work in unsupervised and unregulated conditions. This had an inevitable reaction upon the health of the parents and on the physique and nutrition of the offspring, and the high rates of maternal and infant mortality which we still find to-day in many textile and industrial centres may be attributed, to some extent, to the unhappy circumstances of those early days.

The Reform Act of 1832 and the subsequent legislation relating to the Poor Law (1834) and the municipalities (1835) are the foundation upon which modern local government has been built up. Medical issues forced themselves upon the attention of the Poor Law Commissioners, and upon those responsible for the well-being of the community, and although maternity and child welfare, as we now understand it, was not recognized as a definite problem until early in the present century, the care of the lying-in woman, the control of the midwife, and the appalling infant mortality in many industrial districts, were matters which attracted repeated notice. Factory legislation and the appointment of women factory inspectors (the first two in 1892) improved the conditions of industrial workers, and by the end of the century the working hours for women in the textile industry were reduced to 65–66 a week. The Education Act of 1870 made education compulsory, and enabled the effect of industrial work upon young children to be closely observed. The establishment of the Board of Health, and later of the Local Government Board, led to the reform of sanitary environment and thence to responsibility for the prevention of disease in the individual, while the scope of the Poor Law medical services expanded and included many sick persons who were not technically destitute.

Advance in maternity and child welfare during recent years has been accomplished mainly through the Public Health Service, but the Poor Law was also responsible for maternity services, for the care of healthy infants and young children, and for infant life protection work. Official responsibility for the care of helpless children was recognized by the appointment of women inspectors of boarded-out children some fifty years ago, and subsequently of women inspectors for visiting children's homes, maternity wards, nurseries, and the quarters for women in workhouses. The Local Government Act, 1929, is designed to merge all public work for mothers and children into one comprehensive scheme in each area, and so abolish overlapping of function and the differentiation of treatment on social grounds. I propose to discuss the development of the work of midwives, of infant welfare, and of the maternity service, and then to consider some of the problems which present themselves for solution to-day.

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MIDWIVES

From the point of view of the midwife, the nineteenth century is noteworthy on account of the prolonged struggle for recognition and training which terminated in the passing of the Midwives Act, 1902. Midwives, like doctors, were originally licensed by the bishops, but when the medical faculty was created the midwives escaped notice, and in spite of the beginning of systematic midwifery teaching in the eighteenth century and the interest displayed by eminent physicians such as Smellie and Hunter, the midwife in 1832, and for a good many years after, occupied a low social position, was usually an illiterate, ignorant woman, and was regarded with a good deal of well-founded suspicion and distrust by the medical profession. But an appreciation of the value of a competent midwife to poor and needy women, and a growing understanding of the dangers to which they were exposed by the attendance of untaught " gamps," induced medical bodies, including the Society of Apothecaries, the Obstetric Society (founded in 1858), the General Medical Council, and the Royal College of Physicians, to interest themselves in the future of midwifery, and to support the endeavours of individual public servants, such as Dr. Farr and Florence Nightingale, and of the small band of educated women who took up midwifery from a sense of vocation, to create an instructed public demand for a body of trained midwives working under suitable control.

These efforts culminated in 1902 in the first Midwives Act and the establishment of the Central Midwives Board. While necessarily recognizing the claims of a large number of unqualified midwives already in practice, training and examination were, from this time onward, made compulsory for all entrants to the profession, and the foundations of a midwifery service were laid which it was hoped might some day equal that in France and Holland and other countries where there had long been official registration of midwives. Close supervision after qualification was, however, peculiar to England. Other Midwives Acts were passed in 1918 and 1926, amending and extending arrangements for the control and practice of midwifery. The Ministry of Health Act in 1919 brought the Central Midwives Board under the general direction of the Minister of Health instead of the Privy Council, and the expansion of maternity services has brought the midwife into considerable prominence, and has generally improved her position and status without, however, leading to the increased remuneration and easier conditions of living to which the highly responsible character of her work would seem to entitle her.

INFANT WELFARE

From investigations carried out in 1859 and 1865, Sir John Simon showed that the mortality among infants rapidly increased as adult women took part in factory labour or in agriculture. He pointed out that the conditions of industrial work were often detrimental to the mother's own health, and that early return to work after confinement, neglect of breast-feeding, and the handing over of the infant in the mother's absence to ignorant, incompetent " minders," had disastrous consequences. The employment of married women in heavy, ill-paid field work led to similar results. Sir George Newman (then medical officer of health for Finsbury) repeated and confirmed these conclusions in 1906, by which time the high infant mortality rate and the excessive sickness among young infants was beginning to attract more general attention.

Consultations des nourrissons and *gouttes de lait* were to be found in various towns in France and Belgium. Profiting by this example milk depots were set up at St. Helens, Liverpool, Bradford, Battersea, etc., to pro-

vide milk for necessitous infants, but with little, if any, supervision. In 1904 a milk depot, which was also a school of infant management, was founded in Finsbury, and in 1907 the St. Pancras School for Mothers was established on lines which have since served as a model for infant welfare centres. Similar centres quickly followed in London, Leeds, Salford, Manchester, and elsewhere.

The St. Pancras School for Mothers made early application to the Board of Education for grants in aid of classes, and the Board agreed to subsidize the teaching of sewing, cooking, etc. The grants were very small, but the application drew attention to the valuable social and preventive work which was being done and to the need for more substantial official support. The interest of both the Board of Education and the Local Government Board was aroused, and in the 1914 Budget provision was made for an extension of the grants-in-aid. Then came the war, and the welfare of women and children was soon a matter of general concern. The Notification of Births Extension Act in 1915, the Maternity and Child Welfare Act in 1918, and the creation of the Ministry of Health in the following year enabled local authorities, under official supervision, and with the encouragement of a 50 per cent. grant-in-aid, to put into operation extensive medico-social schemes for preventing mortality and morbidity in infancy and early childhood.

From the beginning, infant welfare has been preventive and educational rather than curative, although certain limited forms of treatment have been added. Supervision of the infant has extended to supervision of the pre-school child, partly by means of home visiting and medical consultations at the centre, and partly through day nurseries and nursery schools (first recognized under the Education Act, 1918) ; treatment of special defects has to some extent been provided for these children in connexion with the School Medical Service. The Children Act, 1908, now under amendment, superseded the Infant Life Protection Act, 1897, and the Adoption of Children Act, 1926, was intended to safeguard the future of the illegitimate or unwanted infant.

Maternal Welfare

Interest in the welfare of women was originally focused upon the industrial and social questions which it raised. Women were excluded from employment in mines and collieries in 1842. In the Factory Act of 1844 the first of numerous attempts was made to regulate the employment of women. In 1873 a report by Dr. Bridges and Mr. Holmes advised that mothers of young infants should either be temporarily excluded from employment or employed half-time ; but the report of a Commission on the Factory and Workshops Acts in 1876 was unfavourable to legal restriction of the work of women before or after confinement. At an International Labour Conference convened by the German Emperor in 1890, various questions concerning women and children were discussed, and it was recommended that women should not be admitted to work for four weeks after childbirth ; provision to this effect was included in the Factory Act of 1891, and still stands in the consolidating Act of 1901. The National Health Insurance Act of 1911 provided a cash maternity benefit for the wife of every insured man, and a double benefit to a married woman who is herself insured ; sickness benefit during pregnancy is also available for the insured woman. The Washington Draft Convention, 1919, recommended six weeks' leave of absence with maintenance for insured women before and after confinement, but this Convention has not been ratified in Great Britain.*

* The Convention has been ratified in Germany for industrial and commercial workers but not domestic or agricultural employees. In practice it has proved difficult to enforce the six weeks' prenatal rest, or to arrange periods for breast-feeding after the mother has returned to work.

The object of such legislation was clearly to safeguard the general health of women in industry, including married women, but no facilities were provided for medical supervision or for any special assistance on account of pregnancy. During the war the extensive employment of women in munition and engineering works, and in filling factories, led to a well-organized system of welfare supervision and careful observations of the effect of employment on the married and pregnant woman.

Consideration of the causes of infant mortality drew attention to the perils of pregnancy and childbirth, and the association of neo-natal infantile mortality with midwifery rather than paediatrics. The Maternity and Child Welfare Act has enabled local authorities to do much to improve the conditions of midwifery, and indeed to establish the nucleus of a general maternity service by offering facilities for ante-natal and post-natal care ; by increasing the number of maternity beds available for the treatment of complicated cases of midwifery (including puerperal sepsis), for ante-natal observation, and for women whose home circumstances are unsuitable for a domiciliary confinement ; by subsidizing, or establishing when necessary, a sufficient service of competent midwives (independent midwives, district nurses, municipal midwives, etc.) ; by offering the services of consultant obstetricians in difficult cases ; by supplementing nutrition ; by affording domestic assistance, etc. These powers, though wide, are optional, and they do not enable anything in the nature of a domiciliary medical midwifery service utilizing the general practitioner to be set up.

Meanwhile a fairly general opinion has grown up which holds that the normal confinement should be left as often as possible to a well-trained midwife, but that the midwife should not stand alone and should have the advantage of medical advice in the ante-natal and post-natal periods, even in normal cases, as well as be in a position to secure prompt medical aid in emergency. This view has led various bodies, including the Royal Commission on Health Insurance (1926), the Departmental Committee on the Training of Midwives, the British Medical Association, and the Maternal Mortality Committee, to recommend maternity schemes which provide the services of a midwife, and as far as necessary of a doctor, for every pregnant woman, in the hope that by guaranteeing skilled professional attention and by fixing responsibility, avoidable maternal morbidity might be substantially reduced. In view of the present financial circumstances, the Government has been compelled to postpone consideration of a scheme of this kind, and it is therefore imperative to make full use of existing powers under the Maternity and Child Welfare Act.

Future Progress

Although we owe much of the original incentive and inspiration to the observation and practical sense of voluntary workers, the application and expansion of their ideas to form an organized scheme for maternity and child welfare has devolved upon the Public Health Service, partly because it is necessary that the advantages should be open to every mother and every infant needing assistance ; partly because the essence of the scheme was prevention of sickness through education and advice, and not treatment or charity ; and partly because the administration of the large sums of money needed for systematic development could only be entrusted to public bodies. But the general foundations having been laid, we are now in a position to ask ourselves whether new and different problems are arising as a result of the experience gained, and, if so, how further development should be secured. The generally accepted conclusion is that future progress should not be wholly a matter of public health administration, but that closer co-operation with the medical practitioner is most desirable.

I suggest that there are two main issues upon which attention should be concentrated in foreshadowing the future progress of the maternity and child welfare service. The first is the safeguarding of maternity and the second is the health of the little child. Both are only partially dealt with under present schemes, and in both our knowledge of what should be done has outstripped our practice.

The Safeguarding of Maternity

The damage and waste of life associated with childbearing has often been stated. Yet even now, the extent of the mischief, with its annual toll of unnecessary deaths, and its infinitely larger burden of sickness and pain which has been estimated to affect not less than sixty thousand women every year, is seldom clearly realized.

The elimination of puerperal sepsis is perhaps the greatest problem in midwifery, and one which has attracted most attention during recent years. In 1918 there was a great shortage of maternity beds throughout the country, and from the first the Ministry encouraged local authorities to do what was practicable to remove this deficiency. But it was soon discovered that the risks of infection in a lying-in ward were by no means a thing of the past, and that acute sepsis was liable to arise without apparent cause, even in well-managed maternity hospitals. The impression was gained that these cases of unexplained sepsis usually occurred in hospital, but the investigations of the Maternal Mortality Committee have shown that they are equally, if not more, prevalent in domestic midwifery, and that 18 per cent. of 4,655 unselected maternal deaths were due to sepsis following normal labour.

Puerperal sepsis is known to be due, as a rule, to a haemolytic streptococcus ; recent researches have shown that the organism is generally introduced into the genital tract from without, and that a large number, possibly a majority of infections, are due to the transfer of organisms from the nose or throat of someone in attendance upon the mother, or occasionally from the throat of the woman herself. The possibility of droplet infection and the menace of the healthy carrier may account for the occurrence of sepsis in many cases which are otherwise inexplicable, and they also suggest that new precautions must be adopted in midwifery technique. The wearing of masks, at any rate in hospital practice and by doctors, has become a matter of great importance now that the risk of infection through carriers is realized. The use of gloves by all doctors is essential for safety ; midwives should be encouraged to use them more freely, and this is practicable if the gloves are sterilized on the hands as recommended in the Report of the Maternal Mortality Committee.

Although the need for maternity beds for complicated midwifery is now well recognized, provision for septic cases, including abortions, is still inadequate. Unless complete isolation can be secured, puerperal sepsis should not be nursed in connexion with a maternity department ; neither should potentially septic cases be introduced into the ordinary maternity wards. It is not sufficient, however, merely to transfer septic patients to a fever hospital or public assistance institution unless suitable arrangements are made for skilled medical and nursing treatment.

There is general agreement that the supervision of pregnancy is essential not only for the prevention of puerperal sepsis and other complications of midwifery, but for social reasons also. It is further agreed that this supervision should be carried out when possible by the patient's own doctor and midwife. Obvious questions which arise are how best to get in touch with the patient at the earliest moment, to overcome her objections to the necessary inquiries and examinations, and to induce her to take a common-sense view of ante-natal care without undue interest in her own mental and physical state or carelessness in noting unusual symptoms.

In certain countries—for example, Germany, Austria, and France—money grants, often very small, are available for the support of pregnant women and nursing mothers.* Such allowances are useful in encouraging the woman to make known her pregnancy at an early stage. In England there is no financial assistance beyond the maternity benefit, and therefore no direct incentive to disclose pregnancy. It is therefore important that women shall be made fully aware of the services which are offered in this country instead of money grants, and arrangements for voluntary notification of pregnancy seem worth trying, if only to make sure that the patient, her doctor, and her midwife are fully informed as to existing facilities. Nutrition during pregnancy almost certainly deserves more attention than it usually receives. The question of a balanced dietary, containing at least a minimum of vitamins and other essential substances, is a matter which those in charge of ante-natal clinics might explore with profit.

The pain of childbirth is, I suppose, the only form of acute pain which is not relieved as a matter of routine, and many demands have been made of late for the more general provision of anaesthesia in midwifery. Pain, in itself, can only be harmful to mind and body, and the fear of pain must often materially add to the distress and anxiety with which a woman contemplates her approaching confinement. If pain were a necessary concomitant of safe delivery one could only exhort the woman to take courage, but we know that relief can be given under suitable conditions and at appropriate stages. Research into methods of anaesthesia and analgesia is being carried on, and it is to be hoped that some satisfactory means of partial, if not complete, relief may be found for those women who desire it, which will be acceptable to the medical profession as a whole for use in domiciliary as well as in institutional practice.

The position of the private midwife is another matter for consideration. It is necessarily changing as maternity services develop. The midwife is no longer in her old independent and isolated position ; she must inevitably be drawn into the organization being formed for the protection of maternity. She is no less necessary than formerly ; indeed, she is often regarded as more important. But there is a growing opinion that she would do her work better and under more comfortable conditions if brought definitely within a municipal or nursing scheme, as indeed is already the case in country districts.

The Health of the Pre-school Child

The care of the child from 1 to 5 presents an entirely different problem from infant welfare. Once the baby has recovered from the risks of parturition, good mothercraft, under medical advice, is sufficient to overcome most of the perils of infancy. But when the child is weaned and begins to run about and to come in contact with a wider environment, new dangers arise with which the mother is not equipped to deal, and regular medical supervision becomes more necessary for the prevention as well as for the treatment of disease. With the baby, the chief desire is to prevent mortality ; with the little child, the danger of mortality recedes, but morbidity becomes more pressing. We have little exact information as to morbidity at this age because of the difficulty of ensuring any systematic supervision of children living at home, and we are not alone in this respect. The care of the little

* In Germany, either under the insurance scheme or through the municipality, most women are eligible for small weekly payments for four weeks before and six weeks after confinement, and for a nursing allowance up to the end of the twelfth week. Other benefits include the services of a midwife, and if necessary a doctor, or a grant towards hospital treatment.

child was recently considered by an international committee set up by the Health Organization of the League of Nations,* and it was found that in all countries concerned, statistical and medical information regarding this period was lacking. Even in countries which have done most towards improving the health of children generally, the pre-school child is still neglected, not so much because the importance for supervision at this age has escaped notice, but because of the practical difficulties involved.

The chief dangers to life which threaten the young child are the acute infectious diseases (including measles, whooping-cough, diphtheria, and scarlet fever), and respiratory ailments, such as pneumonia and bronchopneumonia. The younger the child the more likely are such illnesses to prove fatal or to have serious consequences. The object is therefore to endeavour to postpone the incidence of infection as late as possible, and to see that the child has effective medical and nursing attention if it contracts an infectious disease.

Effective protection from diphtheria can now be given by immunization, which can be practised safely and satisfactorily from the beginning of the second year, and the method is slowly gaining ground in this country. The prophylaxis of measles is more complicated and less certain, but something can be done, especially in the child under 5, to postpone or mitigate an attack by the use of serum obtained from convalescents or persons who have formerly suffered from the disease. Although the protection may be fleeting and uncertain, it is well worth attempting, as nearly all deaths from measles occur under 5. It is, however, most encouraging to note the steady fall in the death rate from this cause, which in 1911–15 was 1,110 per million living, and in 1926–30 was only 381. This marked fall synchronizes with the initiation and development of child welfare work in this country. Health visiting and advice given in the home or at the clinic have impressed upon mothers the importance of nursing and care in this disease.

Respiratory ailments, whether arising in connexion with epidemic diseases or as independent infections, are very prevalent, especially in the northern parts of the country. A clearer understanding on the part of the parents of the means of prevention, and better arrangements for nursing and treatment through the maternity and child welfare organization, might do much to reduce the gravity of these affections, which not only have serious immediate results but may prepare the way for other diseases.

There has been a substantial reduction in the death rate from tuberculosis in young children, especially in non-pulmonary tuberculosis. This welcome decline is no doubt due mainly to an improvement in nutrition, in the standard of living generally, and an increase in the use of pasteurized or dried milk for bottle-fed infants, in association with the special measures in the anti-tuberculosis campaign which are directed to eliminate or to minimize the risks of household infection. It is the improvement in environment which, apart from acute infections, will do most to lower morbidity among young children. The striking disappearance of severe rickets, for example, is a testimony to a better knowledge and practice of everyday hygiene, much of which is the result of the steady intensive educational work of the infant welfare staff. The importance of satisfactory nutrition in its immediate and remote results and in its effect upon general health and resistance to disease cannot be over-estimated, but the average mother is much less well informed as to the feeding of her little child than of her baby.

The welfare of the little child could, if seems, be further safeguarded by action which falls under three main heads. First, there is the need for protection from acute infection ; secondly, for a better knowledge of mothercraft as applied to the little child ; and thirdly, for continued supervision, which can best be given by regular home visits from trained nurses and periodical medical advice at a centre, together with such arrangements for the treatment of physical defects as can be made in co-operation with the medical profession, the school clinic, the orthopaedic centre, the children's hospital, etc., and of social defects through the day nursery or the nursery school.

We are all keenly alive to present-day difficulties, but, notwithstanding these, should not the care of women and little children be placed in the forefront of the health programme of to-day? Is it realized how comparatively small a sum is needed in a local area to provide for the gradual completion and perfecting of the existing organization? In any expansion of facilities there is likely to be an increasing scope for co-operation between the private practitioner and the public health officer. While the Public Health Service must almost necessarily remain the guiding force of maternity and child welfare schemes, it may confidently be anticipated that the family doctor will be willing to interest himself sufficiently in preventive medicine to study special problems which present themselves and to help in their solution.

* Report by the Reporting Committee on Maternal Welfare and the Hygiene of Infants and Children of Pre-School Age. C.H. 1060.

TEMPORARY CHANGES IN THE REFRACTION OF THE EYE IN DIABETICS*

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My own especial interest in this subject was recently stimulated by two middle-aged patients who consulted me within six months of one another with the same story—namely, that distant objects had become indistinct, while print and needlework, for which glasses had previously been necessary, could now be distinguished more clearly and comfortably without aid. Neither patient was aware that there was anything amiss with her general health, but in each case these ocular symptoms prompted me to an investigation of the urine ; this revealed the presence of a large quantity of sugar, and so led to the discovery of a condition of advanced diabetes.

The occurrence of pronounced though transitory alterations in the refraction of the eye in diabetics has been reported sporadically in various medical publications, and a most illuminating paper on the subject was published by Duke-Elder in 1925. Apart from Foster Moore, however, who mentions it in his *Medical Ophthalmology*, writers of textbooks on ophthalmology, of textbooks on general medicine, and even of works dealing exclusively with diabetes, have usually ignored it. I have two reasons for bringing the matter forward: first, I wish to add my two cases to those already reported ; and, secondly, I believe it is important that this condition, although admittedly a rare one, should be more generally recognized, leading as it may do to the discovery of the existence of serious disease which otherwise might remain undetected.

My first case was a woman, aged 50, who told me she had been long-sighted until about a year before, and that her distant sight had failed fairly quickly, while the near sight had improved. She produced several pairs of glasses of different strengths, all minus lenses, which she had obtained during the past year ; none of these glasses had she ever worn with comfort. She also stated that her sight was

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