THE CARE OF PREMATURE INFANTS AT HOME

BY

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(From the Department of Child Health, Newcastle-upon-Tyne)

It has long been apparent that an improvement in the care of premature children at home or in hospital would result in a substantial reduction in neonatal infantile mortality rates. In March, 1944, this was given official recognition in the form of a circular sent to Welfare Authorities (Ministry of Health, 1944), with recommendations for the care of premature children at home and in hospital. It was recognized that it might then be impossible for authorities to implement all the recommendations, but they were urged to do what they could. In Newcastle-upon-Tyne the matter had already been under consideration, and we decided first to make the experiment of providing adequate home care in order to have figures as a basis of comparison with institutional care and data for the guidance of future policy. The results of the care of premature infants in special hospital units are well known and have recently been described in detail by Crosse (1945), but the possibilities and the results of home care seem to have received little attention, although Brockington (1944) reported a survival rate of 66 per cent. (62 out of 94 births) for premature children attended by domiciliary midwives in the county of Warwickshire during 1943. The object of this note, therefore, is to give an account of the home care of premature infants in Newcastle-upon-Tyne from January, 1945, to May, 1946. The results will be given, and the equipment provided and the methods used will be described briefly: the special home provision was simple and excluded much that is considered essential in hospital.

Results

During the 17 months from January, 1945, to May, 1946, inclusive, 144 live premature infants were born at home. Of these, 43 received special care from one 'premature' infant nurse seconded for the purpose from the municipal midwifery service, and the remainder were nursed by the midwife or maternity nurse attending the case. These groups cannot be directly compared, because the cases which received special care were not taken alternately with those which did not, and several factors of selection were present. For example, the 'premature' nurse was sometimes unable to take more cases; assistance was probably most often needed by families in the poorest circumstances; if the child was either very feeble and likely to die in an hour or two, or very lusty and likely to survive without difficulty, assistance might not be called. For these reasons, therefore, no direct comparison is possible,

<p>| Table 1 |
| RESULTS OF THE CARE OF ALL PREMATURE INFANTS AT HOME (Attendance of midwife: one month if necessary) |</p>
<table>
<thead>
<tr>
<th>Total</th>
<th>Living</th>
<th>Dead</th>
<th>Survived (per cent.)</th>
<th>Premature infant ward survival rates (Crosse, 1945) (per cent.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2½ lb.</td>
<td>18</td>
<td>—</td>
<td>18</td>
<td>—</td>
</tr>
<tr>
<td>2½-3 lb.</td>
<td>24</td>
<td>7</td>
<td>17</td>
<td>29</td>
</tr>
<tr>
<td>3-3½ lb.</td>
<td>40</td>
<td>33</td>
<td>7</td>
<td>82</td>
</tr>
<tr>
<td>3½-4 lb.</td>
<td>62</td>
<td>58</td>
<td>4</td>
<td>93</td>
</tr>
<tr>
<td>Totals</td>
<td>144</td>
<td>98</td>
<td>46</td>
<td>68</td>
</tr>
</tbody>
</table>

<p>| Table 2 |
| RESULTS OF SPECIAL CARE AT HOME (Under conditions described) |</p>
<table>
<thead>
<tr>
<th>Total</th>
<th>Living</th>
<th>Dead</th>
<th>Survived (per cent.)</th>
<th>Premature infant ward survival rates (Crosse, 1945) (per cent.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2½ lb.</td>
<td>2</td>
<td>—</td>
<td>2</td>
<td>—</td>
</tr>
<tr>
<td>2½-3 lb.</td>
<td>10</td>
<td>5</td>
<td>5</td>
<td>50</td>
</tr>
<tr>
<td>3-3½ lb.</td>
<td>20</td>
<td>20</td>
<td>—</td>
<td>100</td>
</tr>
<tr>
<td>3½-4 lb.</td>
<td>11</td>
<td>11</td>
<td>—</td>
<td>100</td>
</tr>
<tr>
<td>Totals</td>
<td>43</td>
<td>36</td>
<td>7</td>
<td>83-7</td>
</tr>
</tbody>
</table>
but the results of the care of all premaries will be
given, and then those who received special care, and
each will be compared with the survival rates of
premature babies in hospital as given by Crosse
(1945). The numbers are small and cover a short
period of time, but they are encouraging and there
is no doubt that the results of this first period can be
improved.

Equipment and Staff

Newcastle-upon-Tyne is an industrial city of
265,000 inhabitants. In the years of economic
depression before 1939 the population suffered
severely, and housing conditions are still very bad.
Domiciliary midwifery is conducted largely by the
midwives of the municipal service and the district
service of the voluntary hospital, the Princess Mary
Maternity Hospital, and the majority of infants are
born at home (65 per cent. in 1945). The incidence
of prematurity is between 6 and 7 per cent., so that
250–300 premature infants are born each year; of
these, approximately 80 to 100 are born at home
and the remainder in hospitals or nursing homes.
There is accommodation for six premature infants
in the Maternity Unit of the Newcastle General
Hospital, but this is insufficient to allow the admission
of infants from the district, and further accommodation
is not possible without new building.

Under these circumstances, and for the reasons
given above, it was decided to concentrate upon the
care of infants born at home. As a beginning the
following provisions were made.

Twelve sets of equipment were placed at the New-
castle General Hospital and made available on
request for loan to any householder inadequately
provided. Each set comprised draught-proof cot
with detachable linings, hot-water bottles, mattresses,
blankets, Bercroy feeders, thermometers, etc. Electric
blanket pads and oxygen are not included in the
equipment; the former because there is a danger of
overheating the infant, and the latter because
constant skilled administration is required for its use.

All the midwives of the municipal service have
been given instruction concerning the care of pre-
marie infants, and as soon as staffing difficulties
are eased each midwife is to be given a "refresher"
course, of at least one month, in the Premature
Unit at the Newcastle General Hospital. One mid-
wife has been seconded for the whole-time care of
premature infants, and one other midwife works
half time in this service. The midwife engaged
primarily on the care of the infants was chosen
because of her interest in the work and her experi-
ce of 23 years in midwifery practice; before
starting work she was given a period of training in
hospital as described above.

It has not yet been possible to arrange for a
supply of breast milk for this service, but in practice
it is found that the nurse is very often able to obtain
milk from the mother and that very small infants
are able to breast-feed satisfactorily.

The services of a home help are supplied wherever
this is necessary, but it is pleasant to record that the
spirit of neighbourliness and the tradition of help
within the family are not yet dead in the north of
England.

Method of Operation

Any medical practitioner or midwife faced with
the care of a premature infant at home may call for
assistance by telephoning the maternity hospital,
and help is limited only by the availability of equip-
ment and nursing staff. The equipment is sent out
by hospital ambulance, which at night also picks up
the nurse (during the day she uses her own car).
After arrival at the home, the "premature" nurse
takes over the care of both mother and child, and
the original midwife has no further responsibility in
the case. The "premature" nurse explains to the
family why special attention is given to very small
children, which particular dangers exist, and how
she will require the co-operation of the whole family
in order to do her best for the infant. Her per-
sonality is such that this co-operation is always
forthcoming.

The maximum number of cases which she can
care for at any given time is three; the number of
visits and the length of each visit are determined by
the circumstances of the case and are left to the
judgement of the nurse. In some cases she has
stayed all night or all day, but as a general rule
either a grandmother, a member of the family, or a
neighbour performs the duty of sitting with the
child at night or whenever necessary during the day.
Practically speaking, a maximum of three visits each
day is possible: as a routine at least two visits for
fourteen days, then one visit each day until the
twenty-eighth day has been reached satisfactorily.
The longest time the nurse has attended a case has
been seven weeks. Before the "premature" nurse
stops visiting, the district health visitor takes over
the supervision of the child so that there is a con-
tinuity of help available. This is made very effective
by the excellent spirit of co-operation which exists
between the midwives and health visitors of
Newcastle.

The "premature" nurse is also a midwifery teacher
and usually has living with her a pupil midwife who
accompanies her to her cases and learns her methods
of dealing with the infants. The role of a "pre-
marie" nurse is friend, helper, and teacher; the
points upon which she concentrates are feeding,
warmth, standards of cleanliness, and the avoidance
of infection. The results speak for themselves and
are, I believe, largely a result of the nurse's per-
sonality, which brings out the best qualities of the
parents and leaves a sense of accomplishment which
is very good for the whole family.

Financial Arrangements

Up to the present time no charge for the loan of
equipment and no extra charge beyond the fee
payable for the services of a midwife has been made.
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The cost to the Authority is about twice that of the services of a midwife, as the 'premature' nurse is paid as a midwife and looks after half the number of cases when concentrating on the infants as she would do if acting as a domiciliary midwife.

Conclusion

The intention of this note has been to give the experiences of the home care of premature infants in an industrial city over a period of seventeen months. It has been written at this stage because those results have been encouraging enough to make further experience desirable, and because they will bear comparison with those obtained in premature infant units. It is no part of this note to advocate that premature infants should be born at home, but simply to state that if they are born there they should not necessarily be removed to hospital. Ultimately the best results will be obtained when premature births can be avoided or planned to take place under the best conditions.

The extension of this service would appear to be in two stages: first, to provide specialized nursing sufficient for all premature infants born at home; secondly, to train all midwives to be competent to care for these infants, so that any midwife would be able to give specialized care and attention whenever a case occurred in her own practice.

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The Care of Premature Infants at Home

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