Contemporary Themes

Fourth goal of perinatal medicine

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Abstract

Reduction in maternal mortality, infant mortality, and infant morbidity have been successively the goals of perinatal medicine. The fourth is to reduce bonding failure. In July 1978 a preventive service was started in the John Radcliffe Maternity Hospital. A twice-weekly round is made. Midwives refer families who cause them concern. In the first year the referral rate was 20.5 per 1000 liveborn babies. The referred sample differed from the hospital population in terms of maternal psychiatric history, marital state and babies' admission to special care. The main reasons for referral were: doubt about parenting ability (27%), psychiatric history (15%), disturbed behaviour in hospital (14%), and diffuse social and medical problems (17%). Long-term care was needed for only 14% of families. At their first birthdays, six babies were placed away from their natural parents; the sample had had a slightly higher than expected admission rate to hospital; the distribution of weights did not differ from the expected; doctors and health visitors were still concerned about one-quarter of the families. Seven cases of screening failure were found among those not referred to our service, but only one was seriously abused. No child referred in the first year has been seriously neglected or abused.

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Reduction in maternal mortality, infant mortality, and infant morbidity have been successively the prime goals of perinatal medicine. The fourth goal is to reduce the bonding failure that leads at its extreme to child abuse and neglect.

The problem is large. Mitchell¹ estimated in 1975 that six per 1000 liveborn children were abused before their third birthday. Many of these were permanently mentally and socially handicapped, and a high proportion were taken into care. This rate may usefully be compared with that of Down's syndrome, which presents in 1.6 per 1000 liveborn: a quarter the estimate for that of early abuse. Kempe² reported on two groups of high-risk families. One was given extra care, the other was not. In five out of 25 unhelped families severe physical abuse occurred in the first year of the infant's life. Kempe wryly noted that the extra help given to the treated group cost \$13 000 but that the five abused infants and their families who had not received help cost the State of Colorado \$1 m. The promotion of good bonding from birth in "at-risk" families is not only sound medicine but also sound economics. Both Kempe's service² and our own³ have shown that child abuse and neglect may be predicted at an infant's birth through simple observations by the midwives. We report here on a preventive service based on these observations and present the details of the families referred in the first year.

A preventive service

In July 1978 a collaborative service was set up between the maternity hospital social work department and the medical staff from the Park Hospital for Children. At the start of the service the midwives were all fully informed about our proposals and how we were going to promote them. Because of staff mobility this information has to be reiterated at least once a year. All midwives were encouraged to refer any patient who caused them concern, in particular in their interactions with their babies. They were urged not to refrain from bringing up minor "worries," however undefined.

SCREENING

The entire population of the maternity hospital is screened. The consultant in charge of the service, or his deputy, report to all nursing levels with the senior social worker at 12 00 noon, twice a week. It is essential that these times are regularly kept. On the very rare occasions when the consultant and his deputy have been unavailable, the senior social worker has done the round alone as the midwives depend on it and have often stored up problems for discussion. On the round the "midwives' worries" are then freely and frankly discussed. The service is kept as unobtrusive as possible to give those caring for the newborn and their mothers a chance to mention their worries without feeling that they are accusing the parents or labelling a family.

FAMILIES REFERRED

In the first year 109 families (110 liveborn children) were referred. The total population screened was 5356 liveborn. Thus the referral rate is 20.5 per 1000 liveborn with 10 the median number of referrals a month.

MAIN REASONS FOR REFERRAL

In all these families the underlying midwives' concern was that the parents might not be able to cope with the new baby. When the case notes and nursing records were independently assessed by a monitoring team, factors giving rise to this concern could be identified. They were sometimes numerous and complex, but in most cases one particular factor appeared to predominate, producing the following classifications.

Doubt about parenting ability

In 27% the midwives' main concern was that the parents were unable or unwilling to care for their newborn baby. One mother declared her predicament by throwing her baby into her cot. Some mothers spoke to the midwives about feelings of indifference or anger, often exacerbated by feeding difficulties. In nine cases the midwives were concerned that the parents were either overtly rejecting or were unable to adapt to having a sick or handicapped baby.

Psychiatric history

In 15% concern arose out of a recorded psychiatric history. Although these mothers were not presenting a problem at the time of birth, there was concern that psychiatric ill health might recur.

Disturbed behaviour in hospital

Fourteen per cent of the mothers were referred because of their strange or disturbed behaviour during their admission. In each case the midwives thought that the mothers were not responding appropriately to their babies.

Diffuse social and medical problems

Families who can be coded under this rubric had been identified in previous research from this hospital.⁴ In 17% of the families referred the problems were diffuse. Many social problems, such as poor housing or low income, were combined with personal biographical and marital deviations, often exacerbated by chronic ill health.

Marital problems

Eight per cent of the referrals were made because there were marital problems of such gravity that the baby's safety was thought to be at risk. In several cases there was a history of marital violence; in others marital problems were obvious during the husbands' visits to the hospital.

Previous abuse

Eight per cent of the families were referred because of recorded evidence of abuse or bonding failure to older children. At one extreme, several children of the same mother had died in suspicious circumstances; in another case the mother had discussed with her obstetrician her dread that she might batter her baby because it had taken her two years to feel close to her first child.

Mother's illness or handicap

Four per cent of mothers were referred because of illness or handicap. Problems ranged from epilepsy to multiple sclerosis, including two educationally subnormal mothers who might not have been able to deal with the practical problems of baby care such as reading instructions on how to bottle-feed.

Social problems only

In 4.5% there were only social problems such as poor housing, low income, or unemployment. While these problems clearly received social help, they were not such as to predict bonding failure.

Miscellaneous

Three families were referred for miscellaneous reasons, such as vacillation over adoption.

Nineteen families were referred during pregnancy, usually during an admission. The rest were referred after the baby's birth, usually within the first few days. Three were referred between three weeks and a month after delivery.

FAMILIES REFERRED COMPARED WITH HOSPITAL POPULATION

Obstetric intervention

Table I shows no increase in the rate of admission for complications during pregnancy other than delivery, where there was a marginally higher rate of lower segment caesarean section and of forceps delivery. (C Redman, personal communication).

TABLE I—Obstetric intervention

	Sample (%)	Maternity hospital population (%)
Admissions other than delivery	22	21
Lower segment caesarian section	16	10
Forceps delivery	28	22

Admission to the special care baby unit

Seven per cent of all babies born at the hospital were admitted to the special care baby unit for over 24 hours.⁵ Among those referred the admission rate was 22%, a significant increase. Thus this first separation of mother and child is an important alerting signal for midwives.

Psychiatric history

Only 1.5% of the general maternity population are recorded as having a history of mental disturbance or mental retardation (C Redman, personal communication); 21% of those referred had such a history in their obstetric notes.

Marital status and social class distribution

It was probably marital status rather than social class that created anxiety; 37% of those referred were either divorced, separated, or unmarried mothers at the time the baby was born. The general rate was 7% (C Redman, personal communication). Table II shows the

TABLE II—*Social class distribution (expressed as percentages) July 1978-June 1979*

	I	II	III	IV	V	Forces	Unemployed	Unsupported mother	Not known	Total No of maternities
Referred	2	14.5	21	16.5	9	6.5	3	22	5.5	109
John Radcliffe maternity population	12.5	21.0	36.5	15.0	2	Not recorded	Not recorded	—	13.0	5416

social class distribution of the referred and the general populations screened. There is a bias, with an absence of mothers in social class I and a large excess of unsupported mothers.

Nature of intervention

An earlier study³ noted that the midwives recorded in writing their serious concern about parents' ability to cope with the baby but that this information often went no further. A crucial role for the new service is to ensure that the family doctor and health visitor are fully informed of the midwives' worries and alerted that considerable support on their part may be needed when mother and baby return home. In 65 families (60%) this was the only intervention found necessary. We have since heard from health visitors that they find this alerting most helpful and with extra time and visits they can give the mothers the additional support required. Whenever the primary care team is alerted, it is mentioned that should a crisis arise, a telephone call to the Park Hospital is all that is needed for the family to be seen within hours.

When caring for families where parent/infant relationships are at risk, the immediate response of all members of the caring team is necessary when a cry for help is made. The knowledge that this will happen and that admission to a special family unit is possible is often sufficient to prevent a serious crisis.

In one-third of the cases, after preliminary discussions, the consultant sees one or both of the parents. He usually introduces himself informally as a doctor from a children's hospital and establishes a rapport, often by admiring the baby by the bed. The mothers are then encouraged to share their problems with him. Often these problems are directly related to the baby's health, feeding, or development. In these cases an informed discussion about the common complaints and developmental problems is all that is needed, along with the provision of a lifeline to the Park Hospital once the mother and baby have returned home. During such conversations bonding is encouraged by showing the mother what her newborn baby can do and highlighting his individual characteristics. This helps her become more aware of the uniqueness of her own baby, which is a first step in forming a bond with that child. Sympathetic talks with the mother also boost her self-confidence and self-respect, which in turn enable her to face her problems once home with the baby. There are times when the families themselves are apprehensive about how they will cope when they leave the protective environment of the hospital. Offering a lifeline is of great importance.

In 15 cases more extensive work was necessary, particularly among parents who showed serious, long-term psychological and personal difficulties. Five of these families were admitted to the family unit, where intensive residential therapy for multiple family problems is available while the baby is in a place of safety.⁵

In summary, the service has both a direct and an indirect effect on the care of the newborn and their families. At times it is just as important for those already managing the family to be advised about how they should give help. Many of the discussions on the maternity wards simply enable the midwives to clear up their own thoughts on a problem and respond appropriately. Raising a family doctor's or health visitor's level of anxiety about a patient is all that is necessary for more intensive support to be provided.

Outcome at first birthday

At about their first birthday, vigorous attempts were made to find all who had been referred. Two children could not be located, one baby succumbed to cot death at 3 months and two children were adopted, one of whom could not be followed up. Inquiries through the primary care team asked for details of the child's health and development, illnesses, and weight at 12 months. Additional follow-up information was available from hospital notes where appropriate. In only one case were our questions not answered.

WEIGHTS AT 1 YEAR

Weight gain in the first year of life is a highly sensitive measure of good care, but, because it is a rule in a few Oxfordshire practices not to weigh healthy babies, weights were not always available. Nevertheless, 84 infants were weighed on or near their first birthday, and the weights were plotted on sex-related graphs. They scattered in a normal curve about the mean. There was a skew in the scatter at the lower end where there were six 1-year-old children whose weights were below the third centile. The medical records of all six were examined. Two had been very short gestation premature births with weights of 1380 g and 1300 g respectively, two had Down's syndrome, and one the Smith-Lemli-Opitz syndrome (early growth failure is a feature of both syndromes). There remained only one child, who was just on the third centile; she appeared to be a perfect miniature.

Thus though all the infants had caused anxiety to the staff at the maternity hospital at birth, by the age of 1 year their distribution of weights did not differ from the general population, with the exception of the five mentioned above where the reasons were medical and clear cut. This unexpected finding, when looked at in the light of each individual case, seemed to relate to the excellent level of primary medical and social care given to these families.

PLACEMENT AT THE FIRST BIRTHDAY

Placement at the first birthday was known for 106 of the sample: two children had been given up to long-term care by their parents but in neither case were court proceedings required, the action being taken under section I of the Children's Act (1948). Two children had been excellently adopted. Grandparents had taken over two children from their unmarried daughters. One hundred mothers were still with their children; 66 were married at the birth, of whom three were separated from their husbands by their child's first birthday. Of 34 mothers unmarried at their delivery, 12 had married, eight were in stable co-habitation, and 14 were still single a year later. In 75 cases the child was with both its married parents at its first birthday.

ILL-HEALTH IN THE FIRST YEAR

There could be no valid control for the occurrence of ill health in the first year of our sample, but we were kindly given access to data of a group of 159 unselected first-born children delivered in the same hospital and carefully studied by another research team.⁶ Among our probands, 26 had been admitted to paediatric wards in their first year of life compared with 16 of the unselected first-born. This difference is significant (χ^2 9.3, $p < 0.001$). When the reasons for admission were studied, however, the whole excess was located in medical problems such as croup and gastroenteritis, not in the rate of accidents or attendances at outpatient clinics. As many of the families had major housing, social, and health problems, we do not think that the slightly higher rate of admission reflects a failure of parental care as such.

CONCERN AT FIRST BIRTHDAY

All these families by criterion had given rise to concern at birth. By the first birthday the state of affairs from the point of view of the primary care teams was: no concern (74), on "at risk" register but no active concern (12), dead (1), unknown (2), and concern still felt about family 20. So, in this sample, anxiety still continues for about a quarter of the families and probably will do so for some years to come.

Cases we missed

The monitoring team have been carefully watching referrals to children's wards and to the social services departments of Oxfordshire

to ascertain children not referred at birth who have been abused or neglected. Out of the 5246 liveborn infants born in the maternity hospital during July 1978-June 1979 and not referred to our service, seven such children have been found. There was one case of serious abuse where a 1-year-old baby had been shaken so badly that he was admitted to hospital with retinal haemorrhages and in a coma. There were five cases of mild bruising associated with failure-to-thrive and one of a possible attempted poisoning (not proved). Four of these families should not have been missed as they were well known to both hospital and community social workers. Three of them had abused older children. When looking at their obstetric notes, however, we found that three mothers had taken their own discharge and only one other mother had stayed in hospital as long as seven days after delivery. The obstetric notes showed that five of these seven mothers were drawing attention to themselves and their predicament at the time of birth with obvious behaviour or mood disturbance on the ward. Yet they were resistant to help. It is hostile families such as these who manage to slip through the screening net. In two of the seven cases the child was taken into care.

Discussion

These data fit with Kempe's findings and support the notion that bonding failure leading to neglect and abuse is preventable.² The service we have evolved cost no extra money, although we acknowledge that we are fortunate in having the family unit as a special facility.

It is extremely difficult to collect accurate figures for cases of child abuse as the diagnosis is so dependent on doctors' and social workers' recognition of the problem. We have looked, however, at the cases referred to us before and after the beginning of the service. Of the babies born at the maternity hospital during the 18 months before the service, six have been referred to our hospital after serious abuse. These included two babies with fractured skulls, resulting in brain damage, two 2 year olds with fractured legs and multiple bruising, and one baby shaken unconscious. In great contrast, of all the 7108 babies born in the first 18 months of the service, only one has been referred to us after serious abuse. The number of children being referred does not show a remarkable decline, but nearly all the referrals are now of children with very minor injuries ("open warnings").⁷ We think that our strenuous efforts to search out all cases of child abuse are increasing the number of children identified as abused, and, because the preventive service is becoming so well known, family doctors now seem much more likely to refer open

warnings. As minor injuries and failure to thrive are known to precede abuse, the few cases missed in the maternity hospital are now more likely to be identified and referred before serious battering occurs because of the increased awareness generated by such a service. The practice of family medicine is of a high order in Oxfordshire. Most of the work done after referral at birth entailed making quite sure that the family doctors and their teams were fully informed of all that had come to light during their patient's stay in the maternity hospital. We think that this is the main reason for the happy outcome we report.

The service has now been running for three years. As they have gained confidence in their ability to predict bonding failure, the midwives are referring more patients during pregnancy. This is proving increasingly helpful in the promotion of good bonding after delivery. So far no child referred in the first year of the study has been severely neglected or abused. The service described probably plays only a modest part in the downward trend in bonding failure in this area. But the families referred were all in need of extra care, and this seems to have been given effectively.

We thank the medical and nursing staff at the John Radcliffe Hospital and all our colleagues in primary care for their help and co-operation in this project. We also thank Dr M Ounsted and Dr C Redman for kindly granting access to their data.

J C Roberts and B Milligan (the monitoring team) are funded by Oxford Area Health Authority Locally Organised Research Scheme.

References

- Mitchell RG. The incidence and nature of child abuse. *Dev Med Child Neurol* 1975;17:641-6.
- Kempe CH. Child abuse: the paediatrician's role. *Am J Dis Child* 1978;132:1255-60.
- Lynch MA, Roberts J. Predicting child abuse: signs of bonding failure in the maternity hospital. *Br Med J* 1977;i:624-6.
- Lynch MA, Roberts J, Gordon M. Child abuse: early warnings in the maternity hospital. *Dev Med Child Neurol* 1976;18:759-66.
- Lynch MA, Ounsted C. Residential therapy in a place of safety. In: Helfer RE, Kempe CH, eds. *Child abuse and neglect. The family and the community*. Cambridge: Ballinger, 1976.
- Ounsted MK, Simons CD. The first-born child: toddler's problems. *Dev Med Child Neurol* 1978;20:710-9.
- Ounsted C. Gaze aversion and child abuse. *World Medicine*. 1975 June 4.

(Accepted 2 February 1982)

MATERIA NON MEDICA

London Bridge has risen again

Those who have trodden it will recognise the human tide that flows across London Bridge from the station to the City and back. Battling against the flood from Cannon Street to Guy's and clinging to the railings to avoid being swamped had compensating advantages in the admiration of the river slopping below, the mist rising—it was always dank winter—around the looming bulk of HMS Belfast, and, one day, two porpoises playing in the murky water.

Imagine then the incongruity on virtually stumbling across London Bridge adorned with flags and spanning languidly a gently lapping lagoon in an arid desert.

If you drive west from Flagstaff and the Grand Canyon or from Phoenix (arising so appropriately from a dust bowl) you may go straight into California through Kingman and Needles. You may, however, be adventurous and turn south, parallel to the Colorado, and head into southern Arizona and the seemingly endless wastes of southern California. These deserts offer as much challenge and beauty as those in the Middle East. They offer the remarkable purity and weird cactus forms of, for instance, the Joshua Tree National Monument. Along the way the Colorado River is held up by the second of the great silt-retaining walls, the Parker Dam. Behind it has formed Lake Havasu, which, in its upper parts, contains great and relatively inaccessible scenic beauty. A hamlet formed

itself on the banks of the lake; it now has a population of 11 000 and is graced by the name Lake Havasu City. It has quickly become a vital resource in the parched desert, and any weekend the roads are choked with travellers, fishermen, and motor boats, and the little city airport is packed with Lear jets and Pipers.

By the expedient of cutting a small channel across a spit of sand which sticks into the lake like a thumb, the city fathers found a home for a redundant bridge—so there London Bridge lies, built in 1824 and lovingly transferred stone by stone and lamp by lamp from the historic and glutinous mud of the Thames.

Surrounded once by a British Rail station, Hay's Wharf, and Fishmongers' Hall, it now has a spectacular mountain backdrop and is the scene of a nightly flag-lowering ceremony for the alternate Union Jack and Stars and Stripes and of the annual London Bridge Desert Regatta. Of an evening at the weekend there is dancing under the arches (the water to be crossed did not need the entire span). An English village with the Shakespeare Arms and English beer, the Shambles, and a red double-decker bus attempt to reflect the pageantry and decor of the original opening of the bridge by William IV. This effect is somewhat underwhelming but cannot detract from the gentle veneration given to the bridge itself, glowing in its desert resting place.—M S B VAILE, senior registrar in community medicine, Whitstable, Kent.