LETTERS TO THE EDITOR

The dangers of soft bedding for infants

EDITOR,—The paper by Bolton *et al* on the possible relationship of rebreathing in bedding to cot deaths raises only one aspect of the way in which bedding probably contributes to many of these deaths.¹ The work of Bolton *et al* largely replicates the experiments of Kemp and Thach who used the faces of rabbits to study the effects of breathing into baby nest bean bags.² After 35 deaths of babies face down in these bags, the US Consumer Safety Commission banned their production and the planned introduction of these bags into this country was abandoned.

We have believed for many years that a proportion of babies found face down as cot deaths die as a result of asphyxiation in their mattresses.

There are two factors in addition to rebreathing, one is the form of the surface in which the face is placed and the other, the softness and compressibility of the nose in young babies. When we were working upon means of obstructing breathing in babies we found that in some children a weight of only 10 g on the end of the nose would completely compress the nose in some children of 2 months of age.

In 1978 we showed, when we used machinery much like that used by Bolton *et al*, but used cadaver heads not a model, that considerable obstruction can be produced to breathing and the effects of regurgitated milk can in some situations produce almost complete obstruction.³ At that time we concluded that the best sleeping surface for a baby would be a bale of hay!

Many babies who are found dead face down in their cots have much regurgitated material in their nostrils.

For the last 15 years we have been attempting to develop a sleeping surface on which a child who becomes face down in its cot will not asphyxiate if it regurgitates and also that the effects of rebreathing are minimised. Such a sleeping system has been produced and has been tried out in the wards of the Sheffield Children's Hospital. This was described in the *Health Visitor* in 1990⁴ and is currently being produced for general sale.

The New Zealand infant mortality situation is an intriguing one. In the early years of this century New Zealand led the world in its low infant mortality and it has only been during the last 20 or so years that the cot death rate there soared and seemed to rise more in the whites than in the Maoris but did not rise in the Pacific Islanders.

In 1986 when the New Zealand cot death rate was high, I was invited by the Plunket Society and their Minister of Health, to report on the situation and I visited New Zealand and looked into the actual circumstances and pathology of deaths in many centres throughout the country. There were a number of factors that could have accounted for the increased infant mortality rate but what appalled me most were the cots and bedding. It had become the fashion for babies to sleep directly on sheepskins and the softer and more fluffy the sheepskins the better. Infants were placed prone on these, often in cots with no hard base so that the babies were deep in

woolly nests. I voiced my horror to everyone possible. At that time their sheep industry was in recession and there was a drive to sell sheepskins for baby cots to the world!

Returning from New Zealand I stopped off in Hong Kong, which had a very low cot death rate. There I was taken around the villages by a social worker to see babies in their homes. There I do not recall seeing any cots or mattresses at all. The babies were simply lying on a piece of sheeting directly on the floor with somebody in the room with them the whole time.

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- 2 Kemp JS, Thach BT. Sudden death in infants sleeping on polystyrene-filled cushions. *N Engl J Med* 1991; 324: 1858-64.
- 3 Emery JL, Thornton JA. Effects of obstruction to respiration in infants, with particular reference to mattresses, pillows and their coverings. *BMJ* 1978; iii: 209-13.
- 4 Emery JL. Towards safer cot mattresses. *Health Visitor* 1990; 63: 157-9.

Early presentation of meningococcal disease after media publicity

EDITOR,—A petechial rash is often an early sign of meningococcal disease, but parents rarely seek medical advice about it.¹ Press publicity about a recent outbreak of meningococcal disease mentioned the vasculitic rash in only 27% of articles, although this was present in 93% of cases.² Increased public awareness of the significance of a petechial rash may lead to earlier presentation of meningococcal disease. Such earlier presentation may save lives.³ We report two cases where parents sought early medical advice about a vasculitic rash after being alerted to its significance by two television programmes.

A 2 year old boy became febrile and irritable over the course of an afternoon. At 7 pm his mother recognised the development of a petechial rash as the herald of meningococcal disease, having seen a similar rash on the television programme *The Time, The Place* that morning.

His mother immediately sought medical advice and insisted on her child's admission to hospital. Meningococcal septicaemia was diagnosed on arrival and he required immediate resuscitation and antibiotics, and he was transferred to the regional paediatric intensive care unit for two days of inotropic and ventilatory support. He has subsequently made a full recovery.

The second child, aged 1 year, was admitted three months later. Her parents awoke to find her covered in a petechial rash. On the evening before admission they had watched a feature on meningococcal disease on the programme *That's Life*. They brought her immediately to hospital where she was admitted to the paediatric intensive care unit. She was given antibiotics, ventilated, and required the use of three inotropes for three days. She has also now made a full recovery.

The parents of both children sought medical advice because they recognised a petechial rash after seeing it on television. These two cases show that appropriate publicity about the presenting features of meningococcal disease can lead to early presentation and successful treatment if accurate information is given. A television campaign

similar to one screened in Norway, highlighting the features of meningococcal disease, especially the vasculitic rash, could lead to further cases being treated earlier.

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National follow up of *Haemophilus influenzae* meningitis

EDITOR,—In view of the recent introduction of a vaccine to protect children against *Haemophilus influenzae* type b infection, it is timely to report preliminary findings from a five year follow up of 440 children surviving *H influenzae* meningitis in infancy. This forms part of a national follow up of 1794 children who had meningitis from a variety of causes in their first year of life between 1985 and 1987. These cases were reported by hospital paediatricians at the time of diagnosis through an active reporting system. Methods of case identification, details of initial illness, and immediate outcome (case fatality rate 4.1% for children with *H influenzae* meningitis) have been previously reported.¹ Age at the time of diagnosis is known for 433/440 of these children, 87% (381) were aged between 4 and 12 months.

Information on health and development of these children at 5 years of age is being sought from general practitioners (GPs) and parents by postal questionnaire, together with similar details for a control population matched for age and sex. Data obtained from GPs are currently available for 373/440 (85%) children surviving *H influenzae* meningitis in their first year.

A total of 255 (68%) children were reported by GPs to have no health or developmental problem, a further 88 (24%) had minor problems such as squint, conductive hearing loss, speech or language delay, and 30 children (8%) had significant neurodevelopmental problems. These include 14 (4%) with a sensorineural hearing loss, nine (2%) with multiple developmental problems with mental impairment, and five (1%) with epilepsy or suspected epilepsy. The age at diagnosis is known for 29 of the 30 children with significant problems: 27 were aged between 4 and 12 months, one was less than 1 month, and one was 3-8 months. With a suggested potential efficacy of at least 90%,² immunisation with *H influenzae* type b vaccine could have protected 24 of these children from the disease.

Rates of significant neurodevelopmental problems after *H influenzae* meningitis reported from other studies range from 8% to 37%.^{3,4} Our findings are preliminary and should be treated with caution as data collection is not yet complete. Further detailed analysis of these data from GPs as well as information from parents and from both sources for the control population is in progress.

A vaccine providing protection against *H influenzae* type b infection was introduced