

Fantoms

Martin Ward Platt, *Associate editor*

Life and death under 24 weeks

Two papers in this *F&N* edition address the outcomes of babies born at the extreme of viability. As most babies born before 24 weeks do not survive, and overall survival has not changed in 20 years, one might think that there is little to say on the matter. But in reality, the way in which these babies die, and their length of life before they die, are matters of huge importance both to healthcare staff and babies' families. The approach of Swamy *et al* was to focus on the change in median duration of survival for the non-survivors over 15 years from the early 1990s (it has risen 7 fold), and to enumerate the interventions that both survivors and non-survivors underwent as a consequence. Swamy *et al* used data from one English region, but there may be variations within the UK and further afield; so the comparison between countries about the approach to end-of-life decision making, reported by Pignotti *et al*, provides useful international context. Do not be put off by the detailed justification of the statistical approach in this paper: focusing on England and France, Pignotti *et al* found strong evidence that physician attitudes to end-of-life care have a significant impact on survival statistics among very preterm babies. **See pages 293 and 273**

Heparin, TPN and long lines

To use or not to use heparin, where infants require TPN through peripherally inserted central venous lines, has been a controversy screaming for a definitive trial to answer it. Several end-points might be considered important: line occlusion, line extravasation, and line-related infection. Birch *et al* focus on infection, which is appropriate at a time when it is clear that infection remains a major and potentially preventable factor in both death and disability

for very preterm babies. In HILLTOP, a well powered trial, they show that the addition of heparin at 0.5 IU/ml to the TPN solution roughly halves the rate of catheter-related sepsis. So far, so good – but what of side-effects? The biggest worry is intra-cerebral bleeding, though pulmonary haemorrhage might also be an issue when TPN is started very soon after birth, an aspect not addressed in this paper. The counter-intuitive, and potentially reassuring finding, was that in the smallest and most vulnerable babies, there was some evidence of a reduction in IVH progression in the heparin arm. The authors speculate that this might be a further consequence of a reduction in infection. Whatever the mechanism, Birch *et al* have demonstrated a powerful means of further reducing the burden of infection among the most vulnerable babies that could easily be incorporated into routine TPN preparation. **See page 252**

Cot capacity, queues, and length of stay

I remember trying to publish a paper in the mid-1990s about modelling the intensive care capacity of a neonatal network in relation to the individual units within it. No one was interested. Suddenly it has all become very interesting because everyone involved in neonatal care in England is having to think about it. Asaduzzaman *et al* have applied queuing theory to a single centre with very interesting results: as well as telling them how many extra cots UCL appears to need, they have demonstrated that one of the key determinants is the arrival and length of stay of babies < 27 weeks. If for no other reason, this gives a huge reason for a close reading of the paper by Manktelow *et al*, which gives empirical data on lengths of stay as related to gestational age at birth. Broadly speaking,

the more preterm a baby is born, the more likely that baby is to stay at least up to, or even beyond, the estimated date of delivery. But there appears to be substantial variation in length of stay between different neonatal services, the causes of which were not clear. It seems intuitively likely that facilities with aggressive home tube feeding programmes, high transitional care capacity, and good community care for babies going home in oxygen, will have shorter lengths of stay; this hypothesis needs urgent investigation as doing care differently may solve the apparent capacity problems of many units. At least as important is the recognition that one of the purposes of neonatal networks is to get away from the concept of individual unit capacity, and focus on capacity within a network, accepting that a proportion of babies have to move around in order to smooth out peaks and troughs in demand. **See pages 283 and 288**

Growth restriction and maternal opioid dependency

Is it the opioid (for which read methadone) that restricts babies' growth, or other factors associated with maternal methadone use? In the women studied by Liu *et al* in Sydney, it was not the methadone or even polydrug use. Instead, the best independent predictor (controlling for smoking) was the maternal body mass index. Lots of factors might affect the maternal BMI, as they suggest, but inadequate diet is an obvious and probable issue which could potentially be targeted for intervention. There may be lessons for other communities with high rates of maternal opioid use, and there seems an obvious need to test out some strategies in different populations to find the 'best buy' for a solution. **See page 258**

Competing interests MWP is a colleague of Dr Swamy and his co-authors.