

The pros and cons of research in a busy unit



Southmead NICU in Bristol is a well-established level III unit providing specialist support to babies requiring medical and neurological treatment. Southmead is one of two level III NICUs within the Western Network, stretching across Avon, Gloucestershire, Wiltshire and Somerset. This includes hospitals in Bristol, Bath, Swindon, Gloucestershire, Cheltenham, Taunton and Yeovil. Babies are referred to us from hospitals in and outside the Western Network.

Bristol is currently the seventh largest local authority in England and the ninth largest in the UK. With 609 admissions in 2008, 107 of which were referrals, it is not surprising that it is rare to be running at less than 100% capacity. The unit has recently expanded its service to meet this demand with 34 cots, comprising 11 ICU, five high dependency and 18 special care. We continue to operate a flexible cot policy, adapting to changing needs within the resources available.

Southmead NICU is a lead intensive care centre and we pride ourselves in participating in research that may shape the future of neonatal care. We are

currently involved in both national and international research trials. Andrew Whitelaw, Professor of Neonatal Medicine at the University of Bristol, has co-ordinated several randomised trials in neonatal medicine and has piloted new treatments for post-haemorrhagic ventricular dilatation (PHVD). With the perspective that in the UK we have been intervening too late – when cerebral ventricular distention and oedema had gone too far to be reversed – Professor Whitelaw has pioneered the ELVIS trial for UK participation at Southmead. ELVIS is a randomised trial of low versus high threshold treatment in preterm infants with PHVD. Originating in Holland this international trial tests whether intervening at a lower threshold improves outcome in PHVD. Once the infant has been randomised we either commence tapping of cerebral spinal fluid (CSF) by lumbar puncture to prevent further ventricular enlargement and pressure, with a ventricular reservoir inserted if repeated taps are required, or we observe without treatment only starting to tap if and when the ventricular width is $>4\text{mm}$ over 97th

centile and the diagonal is $>10\text{mm}$. Primary outcomes include surgery for shunt and mortality, with secondary outcomes of subsequent CSF infection, haemorrhage and disability at two years of age.

Southmead NICU also recruits to many multi-centre trials. Neonatal consultant Alison Leaf is the clinical lead for the Abnormal Doppler Enteral Prescription Trial (ADEPT), a randomised controlled trial aiming to determine whether a policy of early initiation of milk feeds is beneficial compared with late initiation. The trial has now completed its recruitment target.

Much study is directed towards preterm infants, for example the Benefits Of Oxygen Saturation Targeting (BOOST II UK) trial has eligibility criteria of less than 28 weeks' gestation. Level III units are in a prime position to recruit the greatest number of candidates onto a research trial. This is important because the larger the cohort, the stronger the evidence. BOOST II UK is a double-blind randomised controlled trial comparing the effects of targeting arterial oxygen saturations at levels of 85-89% versus 91-95% in babies born at less than 28 weeks' gestation.

Research on the unit is not viewed in isolation for its benefits to medicine. Family-centred research is an area that has strong roots at Southmead. Chrissie Israel as Specialist Developmental Care Sister is keen to embrace all advances in this field. The Preterm Infant Project (PIP) explored parent and infant interaction enhancing parental recognition of infant cues and facilitating structured attachment activities. The study monitored infant and parent relationships and ultimately the cognitive development of very preterm babies. In addition, the recent appointment of Breastfeeding Specialist Nurse Cathy Churchill has facilitated participation in researching the effects of domperidone versus metoclopramide in relation to enhancing breast milk production, an issue of extreme importance to mother and child.

Generally parents have been willing to participate in trials if they perceive their child will either benefit from the trial or will not be at any risk of harm in



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Parental involvement depends upon their perception of risk versus benefit – many are also pleased with the prospect of helping future babies.

participating. We often find that parents have preference for one trial over another, and at times an infant may be recruited on more than one trial. Parents are supportive of neonatal research providing they see the benefits out-weighing the risks and many parents express pleasure at the prospect of helping future babies. Consultant presence on the unit is high at Southmead and so parents have the opportunity to discuss their baby's ongoing involvement on a regular basis and without the need for an appointment.

The implications of research within the unit largely depend on the nature of the trial. Each trial requires nurses to grasp knowledge of the trial and depends on eligibility criteria, general management and follow-up potential. Recognising when an infant is eligible for a trial is the key to good recruitment, giving clinicians and parents sufficient time to consider enrolment. Southmead is currently leading the way for recruitment on the BOOST II UK trial, having recruited over 12% of the current total.

We hold teaching sessions every Wednesday afternoon on a drop-in basis to ensure staff are keeping up-to-date with essential NICU knowledge and trial developments. Staff are paid for the two hour session and rewarded with certificates of attendance for their portfolio and NHS Knowledge and Skills Framework review.

Setting the right environment to ensure trial success is important and presents



Heidi Gurney – busy coordinating Southmead NICU's participation in the BOOST II UK trial.

challenges. For the BOOST II UK trial, we electively purchased brackets for the monitors so that they could be attached to poles or incubators safely as space is a luxury few units have. Units involved in the BOOST II UK trial may sympathise with the increasing noise level of the Masimo pulse oximeter monitors used in the trial. At one time seven babies were involved in the trial in the intensive care nursery and, as noise levels were becoming undesirable, no more infants were recruited. This was highlighted to Masimo and the issue was dealt with on a mechanical level, minimising artefact and ensuring less unnecessary alarming.

Involvement in research trials indirectly impacts on nursing time. Extra nursing lead

roles have been developed to ensure the smooth management of trial participants and data collection. Unfortunately, time allocated rarely reflects the time that coordinating trials actually demands. Data collection can be challenging, especially if done in retrospect, and it is vital for validity of the trial that this is done meticulously.

Busy clinical shifts do not permit time away from the cotside without sacrificing family-centred care. According to the Bliss Baby Report 2008, parents are recognising when their nurses are overstretched and unable to provide the quality care they deserve. Growth within neonatal nurse research roles is therefore needed, allocating the time, resources and funding it deserves. Funding for research is historically competitive, with a bias toward medical rather than nursing lead. Some critics may view nurses' roles in research as assistive to doctors, however an experienced nurse has specialist practical knowledge, familiarity with handling confidential information and an understanding of the importance of putting the patient's needs first. In recent years we have moved away from the Diploma in Nursing to the degree and now a master's degree is warranted in senior posts. With the appropriate support PhDs will be gained and this knowledge and expertise needs to be nurtured and utilised in the research field, avoiding a possible disconnection from the clinical setting.

I believe a shift in culture is still needed before nurses will truly be appreciated for their contribution and recognised for career potential in benefitting the field of research. The UKCRC Subcommittee for Nurses in Clinical Research in collaboration with Modernising Nursing Careers is addressing these issues.

Neonatology remains a relatively new specialty that demands a strong evidence base for all action, many aspects of care are yet to be investigated. At Southmead NICU we act promptly to implement change in response to research findings. We hold the belief that research and audits should be practised and developed throughout the medical and nursing team. We strive to promote a culture of critical analysis encouraging the link between theory and practice, ultimately improving the standard of care for infants and their families.

Is your unit special?

Why not contribute to our focus on a unit feature?
Contact kate@infantgrapevine.co.uk