Nursing the surgical neonate part 2: how can we deliver best practice now and in the future?

This article describes the development of a work-based, university accredited, clinical module for registered nurses caring for neonates requiring surgery for gastrointestinal or urogenital conditions: *Nursing the Surgical Neonate: Gastrointestinal and Urogenital Disorders*. This specialist, part-time course has been developed as part of the Birmingham Children's Hospital Neonatal Surgical Outreach Service, commissioned in response to specific local issues in the West Midlands. The relevance of the course is discussed in context with the need for a future workforce with specialist knowledge and skills to influence outcomes for some of the most vulnerable patients in our healthcare system.

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Key points

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1. The Nursing the Surgical Neonate clinical module offers formal, structured, accredited post-registration education for nurses caring for neonates requiring specialist paediatric surgery.
2. The course is important for developing a national workforce with specialist knowledge and skills to influence outcomes for vulnerable newborn surgical patients.
3. The course aims to improve outcomes for patients with complex needs requiring extended lengths of inpatient stay and substantial inpatient and community resources, in line with Department of Health best practice guidance.

Congenital abnormalities and complications from a premature birth are responsible for the majority of infant deaths in the UK.[1] Approximately 3% of infants born in England and Wales have a congenital abnormality, some of which will require surgical intervention in the newborn period.[2] The majority of these infants, with the benefit of expert care, will survive with a near normal life expectancy.[3] The most common reason for surgery in the preterm period is necrotising enterocolitis (NEC). Advances in technology and healthcare expertise have led to increasing survival rates of very premature babies over the last 20 years.[2] However, the concomitant risk of NEC increases with immaturity, with up to 60% of the most immature infants being referred for laparotomy.[4]

Thirty years ago in the emerging specialty of neonatal surgery, a diagnosis of NEC or diaphragmatic hernia in a newborn infant was a cause of dread. Babies born with gastroschisis or oesophageal atresia may have survived surgery but often had protracted recovery of many months, complicated by infection and intractable liver damage. Extended hospital stays were not uncommon; sometimes a first birthday was celebrated on the ward.

In the intervening years the morbidity and mortality for neonates requiring surgery has greatly improved. Standardising pre-operative stabilisation, advances in surgical and anaesthetic techniques, improving pain management, infection control, nutritional developments and evolving expert nursing care have all been areas of advancement in the pursuit of improving outcomes, although there is a recognised need for more long-term follow-up data. Extended hospital stays can still happen but are more of an exception rather than the norm.

Educating the neonatal surgical nurse

Published in 2015, *The Shape of Caring* review set out to ensure that nurses receive consistent high quality education throughout their careers to support high quality care.[5] The Department of Health's *Commissioning Safe and Sustainable Specialised Paediatric Services – a Framework of Critical Interdependencies*[6] advises that best practice paediatric surgical care is delivered by a knowledgeable and competent workforce in a non-surgical setting as close to home as possible. It is recognised that, in order to provide the best possible care for neonates requiring surgery, the knowledge and skills of a highly trained, multidisciplinary team are essential for managing their complex needs as they progress along the care pathway.[6] Public expectation demands an educated workforce, knowledgeable in the theory and practice required to deliver safe

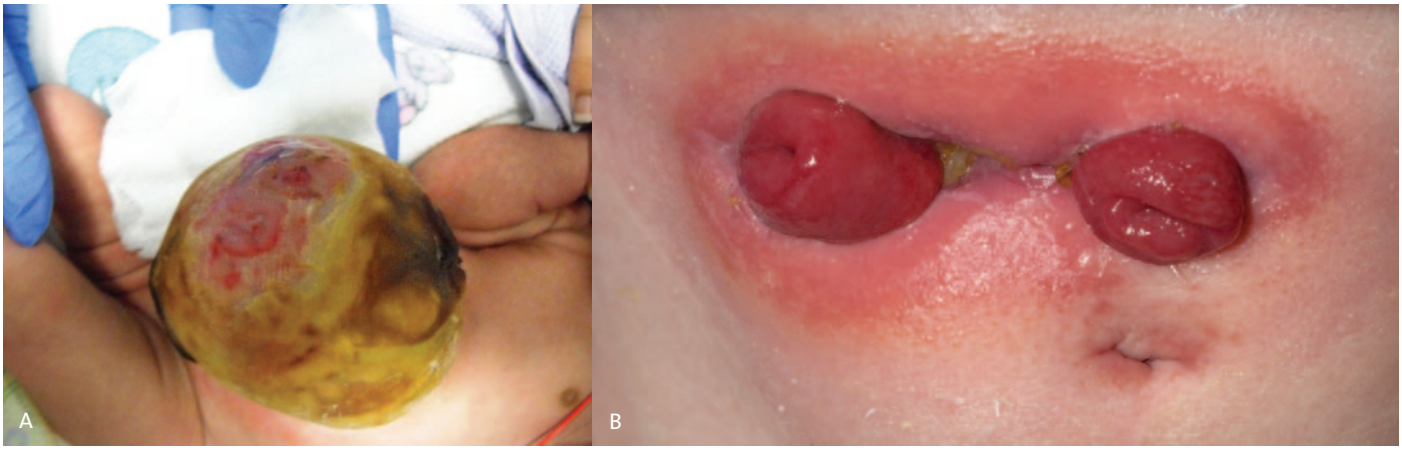

FIGURE 1 Clinical images that illustrate the surgical nursing knowledge and skills required to care for neonatal surgical patients. (A) Conservative treatment of exomphalos major with anti-microbial dressings. (B) Peristomal excoriation – a divided jejunostomy with leakage of effluent on to the skin.

and effective care.[7] It is therefore incumbent on the NHS to pursue the development of a competent and confident workforce, equipped to practice safely and effectively in the specialised field of neonatal surgical nursing.[8]

In 2009 Burge[9] published the results of a survey of the facilities available for neonatal surgery in the UK. A questionnaire, which was agreed by the members of the NHS Department of Health Neonatal Taskforce Surgery working group,[10] gathered data from 23 of the 26 UK specialist paediatric surgical centres. One of the findings described a situation in which cots for neonates requiring paediatric surgery were spread over 64 different ward areas in the 23 surgical centres, in some cases co-located with medical neonates. This situation makes it difficult to maintain high levels of surgical nursing experience and expertise and one suggestion to address this was to develop individuals – experts in surgical knowledge and skills – in order to support colleagues caring for these patients.

Conversely, there are ward areas in some hospitals where surgical neonates are cohorted; here exposure to a constant flow of surgical patients is sustained. Traditionally, nurses working in these areas have developed their surgical competence and confidence in a variety of informal ways, often 'pick it up as you go along'. This reliance on the happenstance of working with a good mentor passing on current knowledge and evidence-based skills and the varying opportunities to challenge established practice can result in sub-optimal care.

Traditionally, nurses on neonatal units become specialised in medical neonatal care by post-registration education.[11,12] Neonatal nurses may come from a background of midwifery, adult or paediatric nursing and for nurses caring for neonates requiring surgery (either in a neonatal unit or in a paediatric setting) there has been no provision of specialised surgical education. These nurses have developed their surgical skills outside a recognised framework of knowledge and understanding. Their practice has been informed by pursuing opportunities to progress as and when they might occur.

In 2011 Petty[12] described the delivery and evaluation of a post-registration neonatal surgical care module, the first of its kind in the UK. She was of the opinion that there was a real need to offer this kind of specialist education as part of widening the scope of neonatal nurse education and also for paediatric nurses working in surgical centres.

Nursing the surgical neonate: background to the course

In 2009 in Birmingham there was a change to the approach for managing neonates requiring paediatric and urology surgery; the Birmingham Children's Hospital Neonatal Surgical Outreach Service was commissioned to help manage the care for these patients and families.[13]

Care pathways were developed to progress the patient and parents from an antenatal or acquired surgical diagnosis, to discharge home or for palliation. By following a 'needs-led' approach the baby is cared for in the right place at the right time by staff with the right knowledge and skills within a managed clinical network.[14]

Birmingham Children's Hospital is the regional paediatric hospital into which all babies requiring surgery and post-operative care are transferred. Transfer distances may be significant and babies and families are separated for variable periods of time while surgical care is completed. However, with care pathway developments, babies are moved closer to home once they no longer need the regional hospital input. This model of care means that all neonatal staff require current surgical knowledge and skills (**FIGURE 1**). In Birmingham this is achieved with the support of the Neonatal Surgical Outreach Service and a continuing programme of training and education.

The underpinning rationale for the development of the Birmingham neonatal surgical nursing course was to create a structured, credible, professional surgical programme in line with principle five of the *Toolkit for High-Quality Neonatal*

FIGURE 2 The clinical module, Nursing the Surgical Neonate: Gastrointestinal and Urogenital Disorders, provides nurses with the skills to deliver excellence in neonatal surgical care.

Services: "Registered nurses undertake accredited training in neonatal surgery appropriate to their role and responsibilities."[10] The principal aim was to equip experienced neonatal nurses working within a medical neonatal unit with the requisite surgical knowledge base and skills to deliver effective nursing care for the baby and support for the family (**FIGURE 2**), including having the confidence to teach parents basic surgical skills in preparation for discharge. Provision of this expert surgical care would enable delivery of appropriate services as close to home as possible.[6]

The course

As the course developed it became clear that the philosophy, course content and learning outcomes were equally valuable for junior nurses working in paediatric surgical wards specialising in neonatal surgery. This could encourage collaborative working between the two disciplines of paediatric surgery and neonatology in line with the Department of Health's best practice guidance.[6] Indeed, for the first time there would be an opportunity to provide high quality continuing professional development in the specialism of neonatal surgical nursing, validated by a local university, at degree or master's level.

The taught sessions reflected the complex needs of these patients and were delivered by specialist nurses, paediatric surgeons, an anaesthetist, a plastic surgeon, a neurosurgeon, a paediatric dietician and a gastroenterologist. The module assessments focused on the critical analysis of surgical care delivered and the knowledge and understanding behind the clinical decision-making process. In 2010 the first pilot course was offered through the local neonatal operational delivery network to units that sent their patients to Birmingham Children's Hospital for surgery. Accreditation was then sought from a local university and the course was offered nationally (**FIGURE 3**).

The course now consists of a double module undertaken at either level 6 or level 7. It is part-time, delivered over a six-month period. There are ten study days in Birmingham and a three-week clinical placement on a neonatal surgical ward. Assessment of knowledge and understanding is by written assignment, individual classroom presentation and completion of a clinical learning log.

Pilot – no accreditation	Course candidates
2010	Five neonatal nurses from local NNUs
2011	Five neonatal nurses and paediatric surgical nurses. The course was discontinued due to withdrawal of support from clinical areas
Accredited module	
2012	Nine neonatal and paediatric surgical nurses from local and regional area
2013	Six neonatal and paediatric surgical nurses from local area
2014	Five neonatal and paediatric surgical nurses from local area
2015	Seven neonatal and paediatric surgical nurses from local and national area
2016	12 neonatal and paediatric surgical nurses from local and national area
September 2017	11 neonatal and paediatric surgical nurses from local and national area

FIGURE 3 The history of the Nursing the Surgical Neonate course.

The course content

The focus of the course is on the dual needs of a patient who, by virtue of being at the beginning of life, is immature and vulnerable but who also needs complex surgery while at the same time being separated from its family.

The course assessments require the students to critically analyse and appraise the surgical nursing care they deliver in the context of particular surgical interventions. Current resources and literature are explored, providing an opportunity to become familiar with the demands and advances in modern neonatal surgery. Surgical nursing skills are practised and their impact on the development and relationship of the baby within the family are analysed, for example stoma care, rectal washouts and care of a Replogle tube. The underpinning evidence base is explored. There is also the opportunity for the class to exchange and debate ideas about surgical nursing care, taking advantage of the varying breadth and depth of knowledge of colleagues from around the UK.

To date, 60 students have undertaken the course (**FIGURE 4**). With the continuing help and support of the Southern West Midlands Newborn Operational Delivery Network, accreditation awarded by Birmingham City University and the dedication and expertise of the staff at the Birmingham Children's Hospital, the next course will commence shortly with a new cohort of students.

The future

As for the future, the legacy of limited opportunities and variations in the level of post-registration education for nurses coupled with increasing financial restraints will require imaginative and determined solutions to providing quality-assured, post-registration education.

FIGURE 4 Nursing the Surgical Neonate: the class of 2017.

Recommendation 25 (Theme 6) in Lord Willis' review *Raising the Bar: the Shape of Caring*[5] states that Health Education England should ensure more transparency concerning funding arrangements for ongoing learning and career pathway qualification in specialty learning. Informed practitioners delivering care based on current knowledge can greatly influence the morbidity of this group of patients. There is a clear and present imperative to provide opportunities to develop confident and competent staff with the neonatal surgical expertise required to care for these complex and often unpredictable patients, and their families. The Nursing the Surgical Neonate course has relevance both locally and nationally if our future workforce is to develop the specialist knowledge and skills to influence outcomes for some of the most vulnerable patients in our health care system.

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References

1. **Parliamentary Office of Science and Technology.** Infant Mortality and Stillbirth in the UK. POSTnote 527: 2016.
2. **NHS England.** 2013/14 NHS Standard Contract for Paediatric Surgery: Neonates (E02/S/c). Online at: www.england.nhs.uk/wp-content/uploads/2013/06/e02-paedi-surg-neon.pdf
3. **Kurinczuk JJ, Hollowell J, Boyd PA, et al.** The contribution of congenital anomalies to infant mortality. National Perinatal Epidemiology Unit, University of Oxford: 2010.
4. **Battersby C, Longford N, Mandalia S, et al** on behalf of the UK Neonatal Collaborative Necrotising Enterocolitis study group. Incidence and enteral feed antecedents of severe neonatal necrotising enterocolitis across neonatal networks in England, 2012-13: a whole-population surveillance study. Lancet Gastroenterol Hepatol 2017;2:43-51.
5. **Health Education England.** Lord Willis. Raising the Bar. The Shape of Caring: A Review of the Future Education and Training of Registered Nurses and Care Assistants. HEE: 2015.
6. **Department of Health.** Commissioning Safe and Sustainable Specialised Paediatric Services. A Framework of Critical Inter-Dependencies. DH: 2008.
7. **Nursing and Midwifery Council.** The code: professional standards of practice and behaviour for nurses and midwives. NMC London: 2015.
8. **Turrill S.** Setting standards for specialised neonatal nurse education. Infant 2011;7:174-75.
9. **Burge D.** A survey of current facilities for neonatal surgery in the UK. NHS Neonatal Taskforce and British Association of Paediatric Surgeons:2009.
10. **Department of Health.** Toolkit for High Quality Neonatal Services. 2009 Online at: www.bliss.org.uk/toolkit-for-high-quality-neonatal- services
11. **Petty J.** A global view of competency in neonatal care. J Neonatal Nurs 2014;20:3-10.
12. **Petty J.** Neonatal surgical nursing: widening the scope of neonatal nurse education. J Neonatal Nurs 2011;17:11-16.
13. **Reda B.** Nursing the surgical neonate part 1: developing a neonatal surgical outreach service. Infant 2018; 14:25-29.
14. **National Audit Office.** Caring for Vulnerable Babies: The Reorganisation of neonatal services in England. 2007 Online at: www.nao.org.uk/report/caring-for-vulnerable-babies-the-reorganisation-of-neonatal-services-in-england/

Nursing the surgical neonate clinical module

A national, accredited part-time course has been developed for staff caring for neonates requiring gastrointestinal or urogenital surgery. *Nursing the Surgical Neonate: Gastrointestinal and Urogenital Disorders* is a flexible work-based, double module for neonatal and paediatric nurses. Delivery is over a six-month period and consists of 10 study days interspersed with clinical practice with surgical patients in the student's own clinical setting as well as a three-week placement on a neonatal surgical ward. On successful completion of the course, the student will be awarded 40 credits at level 6 or 7.

The course is provided by Southern West Midlands Neonatal Operational Delivery Network in collaboration with Birmingham Women's and Children's NHS Trust and validated by Birmingham City University.

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