Results: Participants n = 25; paediatric senior house officers 7, midwives 6, paediatric nurses 5, neonatal nurses 5, paediatric registrar 1, paediatric consultant 1. Source of most recent learning: NLS 15, weekly neonatal resus teaching 2, departmental study day 2, midwife 2 h study day 2, local trust NLS 3, emergency obstetric study day 1. Time since last training: <1 year (40%), <2 years (24%), <3 years (16%), ⩾3 years (20%) (see table).
Conclusions: There are gaps in knowledge and the practice of basic life support across all professional groups.
Recommendations: Regular resuscitation training sessions involving all team members may reinforce and refresh the knowledge and skills gained from attending life support courses. Resources need to be made available for continued training.

PA.28 PRIORITIES IN NEONATAL MEDICINES RESEARCH: A SCOPING EXERCISE

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The inadequate evidence base for neonatal therapeutics and the limited number of clinical trials that can be performed at one time indicate a need for prioritisation. The aim of this scoping study was to examine how prioritisation can be informed by data relating to medicines use and therapeutic gaps provided by clinicians.

A survey was sent to 80 units in the extended neonatal network (ENN) of the Medicines for Children Research Network. 25 units reported which medications were used over a 2-week period: 15 reported how many babies received each medication, 16 suggested therapeutic gaps.

Reports covered 119 medications and 1767 prescriptions. Medications most frequently used related to infection (20 medications, 34% of prescriptions), vitamins (11, 22%), chronic lung disease (8, 9%), skin (21, 9%), pain (7, 7%) and upper gastrointestinal tract problems (7, 6%). A dose for preterm infants was unavailable for 13 of the 21 most commonly used medications. Therapeutic gaps related to infection (8 units), chronic lung disease (6), hypotension (6), patent ductus arteriosus (6), vitamins (4) and neuroprotection (4). All units used caffeine, which is unlicensed in neonates.

This study demonstrates the feasibility of using the ENN to gather data about medicines use and the opinions of clinicians during prioritisation. Prioritisation will need to reconcile the need for research on high impact, low volume medicines (inotropes/patent ductus arteriosus), high impact, high volume medicines (chronic lung disease) and low impact, high volume medicines (vitamins). The large number of medications used in some therapeutic areas suggests that priorities could include therapeutic rationalisation.

BAPM/NNS: Epidemiology, Outcomes and Brain

PB.01 EPIDEMIOLOGY OF CONGENITAL DIAPHRAGMATIC HERNIA IN THE FORMER TRENT REGION, UK

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Aims: The management of congenital diaphragmatic hernia (CDH) remains a major challenge to all clinicians with no definitive trials to identify even elements of an optimal management approach. The aims of this study were to report the incidence and short-term outcome of CDH in a large geographically defined population with routine access to antenatal scanning and termination and to estimate the feasibility of performing a randomised control trial (RCT) in this patient population.

Methods: Data were collected on all cases of CDH reported to the East Midlands and South Yorkshire Congenital Anomaly Register between 1997 and 2005.
Results: 194 cases of CDH were identified from 547 025 births, a birth prevalence of 3.5 per 10 000. 73% were diagnosed antenatally and 22% postnatally. 69% of cases resulted in a live birth, with 61% one year survival. 25% of cases were terminated. 54% were isolated cases and 46% were associated with another anomaly; livebirths were significantly higher in the isolated group (80% versus 56%, $p \leqslant 0.01$). The overall one year survival with an isolated CDH was 62% compared with 19% with an associated anomaly ($p \leqslant 0.01$). Overall, only 133 babies were born alive and only 83 were cases of an isolated CDH; these being the only group suitable for inclusion in a RCT.
Conclusions: Given the above, it is impossible that any unit alone would be able to recruit sufficient patients to perform a valid RCT of management strategies for CDH. This highlights the importance of planning collaborative international trials to address this complex clinical problem.

PB.02 TRENDS IN NEONATAL MORTALITY OVER A 30-YEAR PERIOD: WHAT ARE THE REMAINING CHALLENGES?

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Aims: A report on neonatal mortality in Northern Ireland during 1974/5 showed it was higher than the rest of the United Kingdom. It also highlighted significant deficiencies in perinatal services at that time. Our aim was to review neonatal mortality and the organisation of services in 2004/5 compared with the earlier review.
Methods: All babies who died before 28 days of age between 1 January 2004 and 31 December 2005 were included. Data were collected on neonatal mortality rates, causes of death, place of birth and maternity services. Cause of death was classified using mortality tabulation based on the International Classification of Diseases, version 10.
Results: In the 1970s there were 44 maternity units and only one neonatal intensive care cot with one part-time neonatologist. There are now 10 obstetric units and 19 intensive care cots, all appropriately staffed. The neonatal mortality rate during 1974/5 and 2004/5 fell from 13.3 to 4.1 per 1000 live births. Immaturity is now the main cause of death with significantly more being less than 24 weeks (31.2% versus 2.8%). There are notably fewer deaths primarily from respiratory distress syndrome. Congenital malformation remains a major cause of death but with a marked reduction in some groups such as congenital heart disease (6% versus 26.5%) and the virtual disappearance of deaths from neural tube defects.
Conclusions: Neonatal death has fallen rapidly in 30 years as a result of major advances in prenatal diagnosis and neonatal therapy. The problems that remain are with very immature babies and those with sporadic lethal syndromes or other major malformations.

PB.03 MANAGING SEIZURES IN THE NEONATAL PERIOD: IS THERE A UK CONSENSUS?

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Background: Neonatal seizures are a relatively common occurrence associated with an adverse outcome. Their recognition is difficult. The clinical signs are often subtle and a substantial proportion are non-clinical. The introduction of cerebral function monitoring (CFM) has led to an increased recognition of seizures. Creating a guideline is difficult due to a lack of evidence for the drugs used and lack of international consensus.
Aim: To benchmark the management of neonatal seizures.

Methods: 50 neonatal intensive care units within the United Kingdom (more than four intensive therapy unit cots) were contacted by telephone and completed a structured questionnaire.
Results: 20% of units did not have a guideline. Seizure recognition: CFM was used in 36 (72%) units, EEG in 22 (44%) and video-EEG in one. Treatment: first line: phenobarbitone was used by all, although with variations in dosage and interval; second line: 29 (73%) used phenytoin, others included midazolam, clonazepam, lignocaine; third line: 14 (35%) used clonazepam, others included paraldehyde, midazolam, lignocaine, lorazepam, diazepam and sodium valproate; fourth line: 25% used paraldehyde; other drugs used included thiopentone and heminevrine. Pyridoxine: 68% of units incorporated this into their guideline. Non-clinical seizures: three units had a guideline. Only a third of units considered treating them. Imaging: 94% performed a cranial ultrasound scan. 58% considered computed tomography scan. Only 10% obtained a magnetic resonance imaging scan in every baby.
Conclusions: This study confirms there is a marked variation in the management of newborn seizures. National guidance would be welcome. Despite increased recognition of CFM only 6% of units have guidance on the treatment of non-clinical seizures and we believe there is evidence supporting their treatment.

PB.04 PARENT AND HEALTH PROFESSIONAL EXPERIENCES OF TREATMENT WITHDRAWAL FROM SICK NEONATES: A QUALITATIVE STUDY

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Background: The viability threshold for premature babies has decreased in recent years, but as gestation decreases, the risk of serious complications increases. When prognoses are extremely poor, moves towards palliative care may be considered. Existing qualitative research explores decision making, but less is known about how parents and health professionals experience and conceptualise treatment withdrawal.
Methods: A qualitative, semistructured interview study of personal experiences of treatment withdrawal in the neonatal intensive care unit (NICU). Interviews were conducted with purposive samples of 22 professionals (10 consultants, 12 nurses) with a range of NICU experience, and 12 bereaved parents, from two tertiary units. All participants had experience of treatment withdrawal. The parent sample included prospective cases (2–4 months post-bereavement) and retrospective cases (1–3 years post-bereavement). The professional sample included medical and nursing staff. Data were analyzed using two qualitative methods: a generative thematic approach and a discursive, deconstructive approach.
Results: Thematic analysis generated six themes, highlighting similarities in nursing, medical and parent understandings of treatment withdrawal: treatment withdrawal as a process; treatment withdrawal as a personal experience; communication; timing; identity and reflexive practices. The deconstructionist analysis drew out aspects of differential understandings in the data, such as the symbolic meaning of terminology and notions of suffering in dying and bereavement.
Conclusions: Treatment withdrawal from sick neonates is an event that is largely consensual between the three key groups involved: parents, medical and nursing staff. Understanding the aspects that are not consensual is crucial to solving longstanding problems in NICU such as staff retention.

PB.05 THE PROBLEMS OF BEING BORN AT OR NEAR TERM

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Introduction: Very few UK data are available on the morbidity of and workload produced by term and near-term (TNT, ⩾35 weeks' gestation) infants. The purpose of this study was to look into this neglected field.
Methods: A level 3 neonatal intensive care unit (NICU) database was queried for the details of demography, delivery, admission, interventions, morbidity, outcome and levels of care for all infants 35 weeks and more for the period 1 January 2004 to 30 June 2007.
Results: TNT infants constituted 54.9% (750/1365) admissions—23.3% of these were borderline term (35 and 36 weeks). 43.8% infants of 35 weeks' gestation, 27.3% of 36 weeks' gestation and 4.6% born at ⩾37 weeks needed admission to the NICU. 0.6% were very low birthweight and 19.8% were low birthweight. 12.4% were small for gestational age and 6% were large for gestational age. "Respiratory problems" (28.6%) and "for observation" (13.6%) were the commonest reasons for admission. 24.4% received neonatal continuous positive-airways pressure, 8.8% received intermittent positive-pressure ventilation and 1.6% high-frequency oscillatory ventilation. 46.8% needed intensive care and TNT infants accounted for 16.2% of intensive care workload, 30.8% of high dependency workload and 25.8% of special care workload. The mean duration of admission was 7.7 days (SD 8.6). 0.6% infants died, most as a result of hypoxic ischaemic encephalopathy.
Conclusions: TNT infants constitute over half of all admissions to a NICU and contribute to a substantial part of the workload. Borderline term infants have a greater chance of being admitted and have a longer duration of stay. The individual and combined morbidity is significant and this group of infants need more attention than they currently get.

PB.06 THERAPEUTIC HYPOTHERMIA FOR NEONATAL ENCEPHALOPATHY: UK 2007 SURVEY OF OPINION AND PRACTICE

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Background: The 2007 Cochrane review of therapeutic hypothermia for neonatal encephalopathy[1] indicates a significant reduction in adversity. Some leaders argue that therapeutic hypothermia should become "standard of care" for neonatal encephalopathy, whereas others advise a more conservative approach.[2] There is no consensus on the utility of therapeutic hypothermia in the United Kingdom.
Aim: To benchmark current opinion and practice to inform future strategies for optimal knowledge transfer for therapeutic hypothermia.
Methods: A Web-based questionnaire consisting of 30 sections related to opinion and practice in the care of neonatal encephalopathy was sent to the clinical leads of level I, II and III neonatal units throughout the United Kingdom.
Results: 128 UK neonatal units responded (out of 195) (total 66%; 11% level I, 37.5% level II, 51.5% level III). 56% were consultant neonatologists and 44% consultant paediatricians. 64% hospitals reported therapeutic hypothermia availability in regional centres (29% available locally). 58% believe therapeutic hypothermia is effective, 42% await further data. 37% would use therap*eutic hypothermia if available locally and 48.6% would transfer an infant to the regional centre to receive this treatment. 17% would not offer this treatment based on the current evidence.
Conclusions: In the United Kingdom at the end of 2007, access to therapeutic hypothermia is widespread although not universal. Two-thirds of perinatal networks have the facility to offer this therapy. The involvement of national bodies will be necessary to assess if and when therapeutic hypothermia should be the standard of care. Appropriate systems will be needed to ensure optimal knowledge transfer, quality of care and to formulate national guidelines.

PB.07 "DEVELOPMENTAL DYSPLASIA OF HIP": ARE WE GETTING IT RIGHT?

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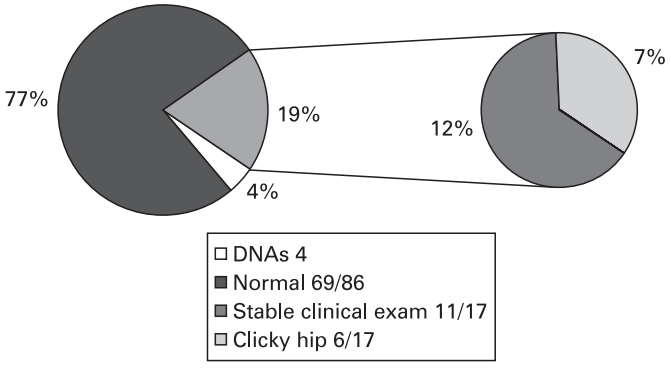
Background: Clinical examination, although useful, has been shown to be insufficient as the sole screening method in infants. Therefore, ultrasound examination at 6–8 weeks in "high-risk" infants is an integral part of the screening process in the University Hospitals of Leicester (UHL). Any abnormality picked up is further followed up in the "hip clinic".
Aim: To evaluate the current practice of management and follow-up for potential developmental dysplasia of hip at UHL.
Objectives: To check: the adherence to the protocol by neonatologists, radiologists, orthopaedicians; final outcome of the follow-up cases.
Methods: Patients identified from computerised data sheets and retrospective data collected. 90 cases analyzed from year 2004 and 3-year follow-up conducted.
Results: Neonatal team referred 90/90, ie, 100% based on criteria for referral. Radiologists scanned 86/90, ie, 95.5%. Orthopaedics appointments sent to 23 of 27 babies who had abnormal scans and/or positive family history (see fig).
Conclusions: Using a risk-based approach and strict criteria for referral along with ultrasound has allowed minimal intervention, with only three babies needing a Pavlick harness and none requiring surgery.



Abstract PB.07 Correlation of scan result with clinical examination

PB.08 INEQUALITIES IN SHORT-TERM SURVIVAL AND PROVISION OF CARE: A POPULATION-BASED STUDY OF VERY PRETERM INFANTS

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Objectives: Exploring socioeconomic inequalities in short-term survival and hospital inpatient care provision among very preterm infants.
Setting: The former Trent health region in the United Kingdom, representing 1/12 of UK births.
Participants: All very preterm births (22^{+0}–32^{+6} weeks' gestation) born between 1 January 1994 and 31 December 2005.
Main Outcome Measures: Intrapartum stillbirth and neonatal mortality rate for very preterm births (alive at the onset of labour) per 1000 live births and per 1000 very preterm births. Hospital inpatient neonatal care provision assessed using length of stay and respiratory support.
Results: Mothers from the most deprived areas were twice as likely to have a very preterm infant, which suffered an intrapartum stillbirth or neonatal death than mothers from the least deprived areas (table). However, this was predominantly due to the increased incidence of very preterm birth among more deprived women.

Abstract PB.08

Intrapartum stillbirth and neonatal mortality rate	Deprivation quintile				
	1 Least deprived	2	3	4	5 Most deprived
Mortality/1000 live births	3.5	3.9	4.7	5.5	6.5
Mortality/1000 very preterm births	328	306	322	313	320

Intrapartum stillbirth and neonatal mortality rates among very preterm infants were extremely similar across all deprivation groups. For those very preterm births surviving at least 28 days, length of stay and provision of respiratory support was extremely similar across all deprivation groups.
Conclusions: The burden of intrapartum stillbirth and neonatal mortality is greater for babies born to women from deprived areas due to increased incidence rates. However, among very preterm births, survival rates and service use is similar for all infants.

PB.09 VANISHING GASTROSCHISIS: CASE REPORT AND LITERATURE REVIEW OF THIS RARE CONDITION

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Vanishing gastroschisis is a rare, yet very serious complication of the fetal condition gastroschisis. The abdominal wall defect closes spontaneously, leading to sloughing off of the extra-abdominal bowel in utero. This can lead to catastrophic loss of bowel. Only 15 cases have previously been described. There is a very high mortality rate (10 confirmed deaths and one stillbirth from 15 cases in the literature).

We present a case that had active surgical management from day 1 of life with a successful outcome.

A patient at 18^{+6} had a gastroschisis confirmed at the regional fetal management unit and counselling given. She was referred to the paediatric surgeons. The scan at 21^{+6} showed well peristalsing and perfused extra-abdominal bowel. At 30^{+6}, no extra-abdominal bowel loops could be visualised. The intra-abdominal bowel exhibited gross dilatation and obstruction. The bowel measured 34 mm and 40 mm at 31^{+6} and 32^{+6}, respectively. The paediatric surgeons were involved antenatally for further counselling as this fetus had a high chance of developing short bowel syndrome, with its associated morbidity and mortality.

On day 1 of life a laparotomy was performed, which revealed a single dilated blind ending jejunal loop that measured 30 cm. There was an unconnected microsigmoid colon. After 6 months of bowel expansion a longitudinal intestinal lengthening and tapering procedure was performed. The patient is 24 months and has been total parenteral nutrition free for the last 8 months.

This case highlights how, with active surgical management, perinatal morbidity and mortality of short bowel patients can be reduced.

PB.10 REASONS AND ADMISSION PATTERN OF NEAR-TERM INFANTS

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Objective: To determine reasons for admission of near-term infants to the neonatal unit.
Methods: Infants who were 35 weeks' gestation or above identified from the neonatal unit admissions register. The study period was from January to December 2005. The information was extracted from case notes using a proforma. The setting is a level 2 neonatal unit at Whiston hospital, a large district general hospital, Merseyside, England. This was a retrospective baseline audit.

Results: 148 infant records were available out of 165 (90%). The median gestation and birthweights were 38 weeks and 3.18 kg, respectively. The male/female ratio was 1.3 : 1. Most (70%) were more than 37 weeks but 35 weekers were more likely to be admitted than 39 weekers. Respiratory distress, hypoglycaemia and feeding problems being the top three medical reasons for admission. 7% of infants were admitted for purely social reasons. Fourteen infants had prolonged rupture of membranes but 50.7% had intravenous antibiotics whereas 22% had an admission temperature less than 36°C. The majority were vaginal births; 61.5% of those delivered by Caesarean section were mainly as emergencies. 77% were admitted in the first 12 h. 70% of births were out of hours.
Conclusions: The majority of the infants admitted above 35 weeks' gestation are term infants, a stepdown facility like a transitional care facility could cater for the needs of a large number of these infants. Creation of a transitional care facility in all neonatal units (or maternity units) might be the way forward in the modernisation of neonatal services.

PB.11 DOES APGAR SCORE PREDICT SURVIVAL TO DISCHARGE IN PRETERM INFANTS?

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Since Dr Virginia Apgar first introduced the Apgar scoring system back in 1952, it has become widely accepted as a way of recording a newborn infant's activity and response to intervention. A number of authors have suggested that low Apgar scores at 5 minutes correlate with neonatal mortality in infants of >26 weeks' gestation. A recent study of infants born at 25 weeks' gestation reported that Apgar scores at 1, 5 and 10 minutes correlated with survival without severe brain damage.

We undertook a retrospective review of all infants born at <30 weeks' gestation and admitted to the Neonatal Intensive Care Unit at the Royal Devon and Exeter Hospital (RD&E) between 2001 and 2005. Infants born at local hospitals but transferred to the RD&E on day 1 were also included in the analysis. Apgar scores at 1 minute increased with increasing gestational age. This trend was less evident for Apgar scores at 5 minutes reflecting the institution of effective resuscitation.

Survival to discharge improved with increasing Apgar scores recorded at 1 minute. 65% of infants with Apgar scores of 0–3 survived to discharge, compared with 87% of infants with Apgar scores of 7–10. The average 1 minute Apgar score of infants who survived to discharge was 6.0 compared with 4.5 for those who died.

Our data support previous studies suggesting that Apgar scores do hold some predictive value for short-term survival in this population. However, we discuss its limitations and factors affecting its reliability as a predictive tool.

PB.12 WITHDRAWN

PB.13 PREMATURE BIRTH: A SYSTEMATIC REVIEW OF EXECUTIVE FUNCTION AND ATTENTION SKILL DEVELOPMENT

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Background: In addition to general cognitive problems, preterm children often have difficulty with tasks of executive function and attention in comparison with term children. However, due to confounding factors such as age at assessment and gestational age (GA) it is very difficult to draw conclusions on the development of these skills after preterm birth.
Methods: We conducted a meta-analysis on studies of executive function and attention in preterm children. Separate analyses were performed for skills of selective attention, sustained attention, spatial working memory, inhibition, shifting, verbal fluency and planning.

Abstract PB.13

Skill	Studies N	Total sample size	Effect size d N (95% CI)
Selective attention			
GA <26 weeks	4	676	0.59 (0.44 to 0.74)
GA ≥26 weeks	6	795	0.18 (−0.04 to 0.32)
Shifting			
GA <26 weeks	3	338	0.62 (0.43 to 0.80)
GA ≥26 weeks	11	1371	0.18 (0.07 to 0.29)

GA, gestational age.

Results: The meta-analysis results show that the extent of difficulties preterm children have with executive function and attention is determined by an interaction between age at assessment and GA. Studies of children born on average <26 weeks' GA show higher effect sizes than studies of later mean GA (see table). Effect size decreases with increasing age for studies of children born ≥26 weeks, thus supporting a model of developmental catch-up. Due to a low number of studies, a similar effect could not be investigated for studies of children born <26 weeks' GA.
Conclusions: Executive function test results should be interpreted with caution in the context of the age at testing and GA at birth.

PB.14 CEREBRAL PATHWAYS FOR POOR COGNITIVE OUTCOMES WITH PROLONGED VENTILATION IN PRETERM INFANTS

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Hypothesis: Premature infants requiring prolonged ventilation are at increased risk of adverse neurodevelopment, independent of other confounders, which is mediated by white matter abnormality as seen on magnetic resonance imaging (MRI) at term.
Methods: 192 preterm infants (<30 weeks' gestation) underwent MRI at term corrected and 2-year Bayley II assessments. MRI were qualitatively assessed for white matter and grey matter abnormalities and abnormality scores were obtained.
Results: There was a strong association between mental developmental index and hours of total ventilation time (R^2 0.20, $p = 0.008$), hours of (endotracheal) end-tidal ventilation (R^2 0.22, $p<0.001$) and period of oxygen treatment (R^2 0.19, $p = 0.03$), which persisted despite adjusting for gestational age at birth, gender, growth restriction, antenatal and postnatal steroids, patent ductus arteriosus and sepsis. These findings persisted despite further adjusting for white matter abnormality score. End-tidal ventilation period was associated with delayed gyral folding and increased extra-axial space representing grey matter atrophy (R^2 0.07, $p = 0.02$).
Conclusions: Prolonged end-tidal ventilation in premature infants is associated with more selective cognitive impairments, which appear to be mediated by grey matter rather than white matter abnormalities. The factors influencing grey matter vulnerability in association with prolonged end-tidal ventilation require further elucidation and may represent a new focus for neuroprotection in the preterm infant.

PB.15 ADVERSE NEURODEVELOPMENT IN PRETERM INFANTS WITH POSTNATAL SEPSIS OR NECROTISING ENTEROCOLITIS IS MEDIATED BY WHITE MATTER ABNORMALITY ON MAGNETIC RESONANCE IMAGING AT TERM

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Objectives: Preterm infants are prone to postnatal sepsis and necrotising enterocolitis (NEC), both of which are associated

with an increased risk of adverse neurodevelopmental outcome. We hypothesised that the impact of postnatal sepsis/NEC on outcome was mediated by white matter abnormality (WMA), which could be demonstrated with magnetic resonance imaging (MRI).

Study design: A prospective cohort of 192 unselected preterm infants (gestational age <30 weeks), who were evaluated for sepsis and NEC, underwent MRI at term equivalent age and neurodevelopmental outcome at 2 years corrected age using the Bayley Scales of Infant Development (BSID-II).

Results: Sixty-eight preterm (35%) infants had 100 episodes of confirmed sepsis and nine (5%) infants had confirmed NEC. Coagulase-negative staphylococci accounted for 73% (73/100) of the episodes of confirmed sepsis. Infants with sepsis/NEC had significantly more WMA on MRI at term compared with infants in the no-sepsis/NEC group. They also had poorer psychomotor development, which persisted after adjusting for potential confounders, but which became non-significant after adjusting for WMA.

Conclusions: Preterm infants with sepsis/NEC are at greater risk of motor impairment at 2 years, which appears to be mediated by WMA. These findings assist in defining a neuroprotective target in preterm infants with sepsis/NEC.

PB.16 PREDICTORS OF LONG-TERM NEURODEVELOPMENT IN NEONATAL ENCEPHALOPATHY: AT BIRTH, 1.5 AND 4 H OF AGE

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Background: Early prediction of neurodevelopment outcome in infants with neonatal encephalopathy (NE) is essential to initiate neuroprotective intervention within the therapeutic window. The accuracy of predictive models within the first 4 h of life is moderate and uses mostly clinical variables.[1] Although ambulatory EEG improves the prediction at 6 h of life, specialist equipment and expertise is needed.[2]

Aim: To predict neurodevelopment outcome in NE infants using clinical and biochemical variables at birth, 1.5 h and at 4–5 h.

Methods: NE was defined as fulfilling entry criteria to the "CoolCap" trial.[3] Demographic, early clinical and biochemical data were collected retrospectively for a cohort of 53 NE infants (mean weight 3386 g and gestation 39.9, 43% females), who received standard intensive care at normothermia. Outcome was assessed at 18 or 24 months of age using Bayley II or schedule of growing skills assessments. Adverse outcome: death or moderate to severe disability. Favourable outcome: normal or mild disability. Multivariable model using backward stepwise regression was applied. Variables were included if $p<0.05$ and excluded with a cut-off of 0.1.

Results and Conclusion: The table shows the predictors of adverse outcome at three time points: birth, 1.5 and 4–5 h of life. These early variables can predict outcome early and help initiate neuroprotective intervention such as hypothermia and counsel parents.

Abstract PB.16

Time	Variable	OR (95% CI)
Birth	Apgar at 10 min <5	6.16 (1.4 to 26.7)
	pH (cord/<60 min)	0.02 (0.0001 to 0.72)
Early 1.5 h	Lactate at 1.5 h	1.29 (1.04 to 1.6)
	Ventilated at 1.5 h	17.08 (2.08 to 139)
Intermediate (4–5 h)	Lactate at 4 h	1.26 (1 to 1.58)
	Ventilated at 5 h	8.49 (1.3 to 55.3)

OR, odds ratio.

1. **Shah PS,** *et al*. *Arch Pediatr Adlolesc Med* 2006;**160**:729–36.
2. **Toet MC,** *et al*. *Arch Dis Child Fetal Neonatal Ed* 1999;**81**:19–23.
3. **Gluckman PD,** *et al*. *Lancet* 2005;**365**:663–70.

BAPM/NNS: Cardiovascular and Respiratory

PC.01 THE VALIDITY OF ECHOCARDIOGRAMS PERFORMED BY NEONATOLOGISTS

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Introduction: Many neonatologists now perform echocardiograms but the reliability of this has not been established. This study assesses the validity of echocardiograms performed in a level 3 neonatal unit by two neonatologists.

Methods: All echocardiograms are recorded and entered on a database. Selected abnormal examinations are referred to regional paediatric cardiologists who maintain a regional database. Both databases were queried to confirm the concordance or discordance of the findings of referred infants.

Results: From 1 October 2003 to 31 December 2007, 852 echocardiograms were performed on 681 infants. Structural or functional cardiac abnormalities were identified in 334 (49%). 35 (5.1%) were life-threatening structural abnormalities and all were correctly identified. Of all infants who had echocardiograms, 319 (46.8%) required some action. 145 (21.3%) infants (including those with life-threatening abnormalities) were seen by paediatric cardiologists. Complete concordance was found in 127 (87.6%), partial concordance in 13 (8.9%) and discordance in five (3.4%). All discordant cases were false-positive diagnoses in non-acute situations. None of the infants who were discharged from neonatal follow-up after normal echocardiograms were identified to have presented to paediatric cardiology with undetected abnormalities. The sensitivity of the neonatal echocardiogram was 100% and the specificity was 99%. The positive predictive value and negative predictive value were 96.6% and 100%, respectively.

Conclusions: Echocardiography by neonatologists can have a high sensitivity and specificity and with appropriate paediatric cardiology support, this can be a safe and reliable tool. Because most neonatologists have no formal accreditation in echocardiography, audits of this kind are necessary and reassuring.

PC.02 THE EPICURE STUDY: BLOOD PRESSURE, WAVE REFLECTIONS AND ARTERIAL STIFFNESS IN RELATION TO BIRTH BEFORE 26 WEEKS OF GESTATION

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Background: Antenatal and postnatal growth are associated with increased arterial stiffness and cardiovascular risk (eg, myocardial infarction and stroke) in adults born at term.

Aim: We investigated cuff blood pressure (BP) and arterial waveforms in 70 extremely preterm children and in 91 age and sex-matched term-born classmates.

Methods: Arterial waveforms were evaluated by radial, carotid and femoral applanation tonometry using the SphygmoCor device (AtcorMedical) by three trained researchers blind to extremely preterm status. BP was measured using an automated Omron BP monitor. Data quality was assessed according to preset criteria and questions of pulse waveform quality jointly resolved by JF and an independent assessor (CM).

Results: There were no differences in cuff systolic or diastolic BP, mean BP or derived central BP in extremely preterm children compared with controls. However, extremely preterm children had