hospitals. Alternative methods of identification such as Day 0 samples were also found to be unreliable.

Analysing laboratory data for over 12,000 first samples received found an overall avoidable repeat rate of 2.1% (acceptable threshold $\leq 2.0\%$, achievable threshold $\leq 1\%$). An avoidable repeat rate of 5.2% was found for inpatient babies compared to 1.7% for community babies.

Badgernet is a neonatal IT system that issues screening reminder prompts in neonatal units to trigger completion of screening in neonatal units, these can be dismissed when screening is not complete. This system is not used in stand-alone children's hospitals.

Conclusions Laboratory data can provide maternity units with information to be able to identify differential avoidable repeat rates for babies in hospital settings. This allows the targeting of quality improvement work to reduce avoidable repeats.

NBSFS is currently not able to provide differential information about inpatient babies. This would be improved by renaming the 'NICU' field as 'inpatient' and mandating completion.

Access to NBSFS for neonatal units and other inpatient children's settings would support completion of timely screening. In the interim, local feedback mechanisms to update maternity units on screening status are needed.

British Association of Perinatal Medicine and Neonatal Society

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NEURALLY ADJUSTED VENTILATORY ASSIST (NAVA) IN VERY PREMATURELY BORN INFANTS WITH EVOLVING/ESTABLISHED BPD

¹Sandeep Shetty, ¹Katie Evans, ¹Anay Kulkarni, ¹Donovan Duffy, ²Anne Greenough. ¹St George's Hospital NHS Foundation Trust; ²Asthma UK Centre for Allergic Mechanisms in Asthma, King's College London

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Background NAVA/NIV-NAVA (Neurally adjusted ventilatory assist/non-invasive NAVA) utilises the electrical activity of the diaphragm to trigger the ventilator. A modified nasogastric feeding tube with a series of electrodes allows monitoring of the diaphragmatic electromyogram (Edi).¹ The waveform of the Edi is used to trigger and control ventilator support. NAVA/NIV-NAVA allows the infant to initiate support of inspiration and termination of inspiration, potentially allowing efficient ventilation at lower pressures. Furthermore, using the respiratory drive of the infant to control ventilation may help avoid hypocarbia and hypercarbia.² Use of NAVA for infants requiring mechanical ventilation is in its infancy.³

Objectives Our aim was to determine whether NAVA/NIV-NAVA has advantages over conventional modes of invasive and non-invasive ventilation in evolving/established (Bronchopulmonary dysplasia) BPD.

Methods A retrospective study was undertaken. Each infant on NAVA/NIV-NAVA was matched with two other infants (controls) supported by conventional invasive and NIV. Matching was by gestational age, birth weight, sex, antenatal steroid exposure and if inborn/or transferred ex utero. Infants were identified from a standardised electronic neonatal database (Badgernet). Data were obtained from the electronic documentation recording system. NAVA/NIV-

NAVA was delivered by the SERVO-n[®] Maquet Getinge ventilator and conventional ventilation (predominantly flow sensor triggered) by the Stephanie STEPHAN ventilator and non-triggered non-invasive modes were BiPAP, CPAP (flow driver) and HHFNC. Outcomes were extubation failure, duration of invasive and non-invasive ventilation, total length of hospital stay (LOS), BPD (oxygen requirement at 36 weeks corrected age) and home oxygen rates. Outcome included data from the local hospital after discharge from St George's Hospital (SGH). The study period was between June 2019 and November 2020. The infants were compared to the historical cohort born between June 2016 and January 2019. This project was registered with SGH Audit department.

Results Eighteen 'NAVA' infants were compared with 36 controls. Infants on NAVA/NIV-NAVA had lower extubation failure rates (median 0 (0–2) versus 1 (0–6) $p=0.002$), shorter durations of invasive ventilation (median 30.5 (1–90) days versus 40.5 (11–199) days $p=0.046$) and total duration of invasive and non-invasive ventilation up to the point of discharge from the local hospital (median 80 (57–140) days versus 103.5 (60–246) days $p=0.026$). In addition, the total length of stay in hospital was lower in the NAVA/NIV-NAVA group (111.5 (78–183) days versus 140 days (82–266) days $p=0.019$). There were no differences in the BPD (17/18 (94%) versus 32/36 (89%) $p=0.511$) or home oxygen rates 14/18 (78%) versus 23/36 (64%) $p=0.305$ between infants on NAVA/NIV-NAVA group and infants in the control group.

Conclusions These results suggest that a combination of NAVA/NIV-NAVA compared to conventional invasive and non-invasive modes may be advantageous for preterm infants with evolving/established BPD.

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International Child Health Group

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ADDRESSING BARRIERS TO EARLY INTERVENTION IN CHILDREN WITH DEVELOPMENTAL IMPAIRMENT IN LUCKNOW, INDIA

¹Rahul Bharat, ²Uzaina Qazi, ³Sanjay Niranjana, ³TR Yadav. ¹Association of Child Brain Research/Royal Cornwall Hospital NHS Trust; ²Association of Child Brain Research; ³Geniuslane Child development centre

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Background Child developmental impairment problems offer a challenge and a valuable opportunity. Unlike any other medical problem, the human brain continues to develop for the first six-year and respond to its environment. The parents are the main stakeholders for children and training parents could provide a valuable low-cost early intervention. The parents are often in denial about a developmental impairment. Some parents panic or feel anxious, angry, and hopeless. There seems to a lack of guidance on the best practice to address parental feelings.

Objectives

1. To identify parental anxiety in children with Neurodisability
2. Can a digital platform with the child's developmental profiling and visual report, app-based support with tailored individualized informed based profiling address parental anxieties.
3. Do children have better outcomes If parental anxieties are addressed

Methods A parental stress index (PSI) with 5 items was constructed. 83 parents enrolled in the intervention program were interviewed. 50 parents scored higher than 30%. The parents were shown visual profiling of their child's development. We ensured that the parents could identify the developmental areas the child needed help. We provided parents with an app that had some targeted tailored information with play ideas to perform at home. We repeated the parental Stress index interview every 2 months with these parents. Only 44 parents continued the program.

Results After 8 weeks of support, the Parental stress index interview was reperformed on all 44 parents. Significant improvement was noted in PSI with a mean difference of 19.71 and t value of 7.56, with a significant .00 level. Their children's developmental progress also improved in parents with lower PSI.

Conclusions We believe that addressing parental anxiety improves interaction with the child. The result is limited on the number of parents and inability of a control population due to lack of resources, it highlights an important area of empowering parents and using digital technology for its implementation.

British Academy of Childhood Disability

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CHANGES IN HEALTHCARE USE DURING TRANSITION FROM PAEDIATRIC TO ADULT CARE FOR CHILDREN WITH LEARNING DISABILITIES OR AUTISM IN ENGLAND: POPULATION COHORT STUDY

¹Ania Zylbersztejn, ²Philippa Anna Stilwell, ³Hannah Zhu, ⁴Viki Ainsworth, ⁵Janice Allister, ⁶Karen Horridge, ¹Terence Stephenson, ¹Linda Wijlaars, ¹Ruth Gilbert, ¹Michelle Heys, ¹Pia Hardeid. ¹UCL Great Ormond Street Institute of Child Health; ²Community Child Health, Evelina London Community Children's Services; ³Community Child Health, Evelina Children's Hospital; ⁴Parent and Carer Research Advisory Group at Great Ormond Street Hospital; ⁵General Practitioner; ⁶South Tyneside and Sunderland NHS Foundation Trust

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Background Children and young people with learning disability (LD) and/or autism spectrum disorders (ASD) often have multiple health needs, requiring frequent involvement with healthcare services. Transition from paediatric to adult services can disrupt continuity of care, and impact on health outcomes of young people with LD/ASD.

Objectives To describe changes in emergency and planned secondary healthcare use for young people with LD/ASD before (at ages 10–15 years), during (16–18 years) and after (19–24 years) transition from paediatric to adult services.

Methods We used Hospital Episode Statistics, a national hospital admissions database, to develop one cohort of young people with LD, and one cohort of children with ASD, born in 1990–2002 in England, who were admitted to hospital in 1998–2019. We included individuals who had a diagnosis of LD, a condition associated with LD in more than 30% of

cases, or ASD. Young people were followed-up from their 10th birthday until death, their 25th birthday or 31st March 2019 (end of the study period).

We determined the annual (year-on-year) change in rates of planned and emergency admissions before, during and after transition, using multilevel negative binomial regressions models, accounting for area-level deprivation, sex, year of birth, presence of comorbidities and allowing for multiple observations per child using random intercepts. We ran analyses separately for individuals with LD and ASD.

Results The cohorts included 63,017 young people with LD and 58,363 with ASD. Overall, young people with LD aged 10–24 years had 219 emergency admissions per 1000 person-years. Emergency admission rates increased by 2% per year of age before (incidence rate ratio [IRR]: 1.02, 95% confidence interval: 1.02–1.03), by 3% per year during (IRR: 1.03, 1.01–1.05) and by 4% per year after transition (IRR: 1.04, 1.03–1.05). Emergency admission rates for individuals with ASD were 181/1000 person-years. Rates increased sharply by 14% per year of age before (IRR: 1.14, 1.13–1.14), remained constant during (IRR: 1.01, 1.00, 1.02), and increased by 6% per year after transition (IRR: 1.06, 1.05–1.06). Increases in emergency admission rates for young people with LD or ASD were mainly due to non-specific symptoms (eg. headache, abdominal pain), injury due to self-harm or mental health conditions.

For planned admissions, young people with LD aged 10–24 years had 491 admissions per 1000 person-years. Rates were highest and constant before transition (IRR: 0.99, 0.99–1.00), declined most rapidly during transition (IRR: 0.87, 0.86–0.87), and by 3% per year after transition (IRR: 0.97, 0.97–0.98). Young people with ASD had 239 planned admissions per 1000 person-years. Admission rates increased moderately before transition (IRR: 1.04, 1.04–1.05), declined during transition (IRR: 0.95, 0.94–0.95) and increased moderately after transition (IRR: 1.04, 1.04–1.05).

Conclusions Increases in emergency admission rates after transition among young people with LD or ASD could reflect unmet health needs due to higher thresholds for planned hospitalisation or accessing support from adult mental health or social care services, or loss of support from schools. Our findings are of relevance to the NHS Long Term Plan, which prioritises improving care of young people with LD/ASD and supporting young people during transition.

Quality Improvement and Patient Safety

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REVIEW OF THE NICE GUIDANCE FOR EARLY ONSET NEONATAL SEPSIS WITH THE USE OF A SEPSIS RISK CALCULATOR

Natalie Gallagher, Michael Grosdenier. *Leighton Hospital*

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Background The incidence of culture proven Early Onset Neonatal Sepsis (EONS) is approximately 0.5/1000 live births, but with high morbidity and mortality, it represents an infrequent but significant risk. NICE guidance states that any infant with ≥ 2 risk factors for sepsis or 1 red flag risk factor should be screened for infection and intravenous antibiotics given within 1 hour of being identified. A previous audit in this level 2 unit demonstrated that only 11.8% of asymptomatic infants,