prior to *The Checklist* being introduced (June 2017) compared with 12.5% 2 months afterwards (September 2017).

Staff satisfaction regarding intra- and inter-disciplinary communication has anecdotally improved and is currently being formally assessed.

Conclusion Our novel *Neonatal Delivery Safety Checklist* has improved early care of the newborn, including admission temperature of preterm babies.

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G216(P) AUDIT OF COMPLIANCE WITH A GUIDELINE FOR A NOVEL METHOD OF PREPARING BREAST MILK FORTIFIER

C King, S Clark. Department of Nutrition and Dietetics, Imperial Healthcare NHS Trust, London, UK

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Background Some clinicians suspect that breast milk fortifier may increase risk of necrotising enterocolitis in preterm babies¹ although there is no evidence for this.² However there is risk of contamination of breastmilk during fortification, in addition vigorous shaking risks damage to delicate immunological components, and storage for longer than 12 hours leads to coalescing of milk fat globules³ with reduced surface area for digestion. In 2012 a guideline using a novel method to prepare fortified breastmilk was written to address these concerns; it combed several practices to ensure milk safety. Fortifier is dissolved in 3 ml of breastmilk at the time of preparation to avoid the need for shaking. The concentrate is then used to accurately prepare low volume fortified milk precluding the need for storage over 12 hours. Each step is carried out using aseptic handling.

Aims To audit compliance with this novel method of fortification within a tertiary neonatal unit.

Methods Approval was granted by the local audit committee. The guideline was evaluated by observation of 40 separate preparations of fortified breastmilk during 2 weeks in 2016. All fortification was carried out in the nursery as the unit has no milk kitchen. Seventeen steps were identified and compliance noted for each. Four steps around labelling, 7 around aseptic technique, and 6 around handling.

Results Compliance achieved, for labelling 84% of time, aseptic technique 60% and handling 83%. Non-compliance around handling was most common when fortifier was added to large volumes of breastmilk, leading to vigorous shaking of milk to dissolve powder.

Conclusion Non-compliance with aseptic techniques when preparing fortified breast milk is high. This needs to be addressed with ongoing nurse education around the potential risks to milk quality.

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G217(P) THE BURDEN OF STOMA-RELATED COMPLICATIONS IN PRETERM INFANTS

L Harris, N Smee, T Bradnock, J Simpson, C Granger. Neonatal Intensive Care Unit, Royal Hospital for Children, Glasgow, UK

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Aims Preterm infants requiring small bowel resection may receive a temporising enterostomy to divert the faecal stream and allow optimisation of their clinical condition and nutritional status prior to restoration of intestinal continuity.

Facilitating growth in the presence of an enterostomy can be challenging, and may require adjuvant parenteral nutrition in addition to enteral feeds. There remains no consensus regarding the optimal timing of stoma closure.

We aimed to determine the stoma-related complication rate in preterm neonates undergoing small bowel resection and enterostomy formation to help inform discussions about the timing of stoma closure.

Methods We retrospectively identified all infants <32 weeks gestation who underwent small bowel resection and enterostomy formation between January 2012 and June 2017, from our surgical procedures database. Information including basic demographics, indication for enterostomy, timing of formation and closure and associated complications were extracted from case records. Local Caldicott Guardian approval was obtained.

Results 34 neonates were identified with a median gestational age and birth weight of 27+3 weeks (range 23+2–31+6) and 933 grams (range 480–2050) respectively. Indications for enterostomy formation were necrotising enterocolitis (NEC) in 16 (47%) infants, spontaneous intestinal perforation in 9 (26%) and 'other' in 9 (26%).

The overall median age at stoma formation was 26 days (range 3–97); with a median age of 44 days (range 6–71) in infants with NEC, compared to 15 days (range 3–97) for all other infants. Median age at stoma closure was 105 days (range 27–394).

27 neonates (79%) required adjuvant parenteral nutrition via central venous access and 14 (51%) of these developed a central line associated complication. There were 7 stoma-related complications comprising 3 stoma prolapse, 1 wound dehiscence and 3 superficial wound breakdown.

Conclusions Complications directly related to an enterostomy, or due to a requirement for central venous access and parenteral nutrition are common in preterm infants. These data should inform multidisciplinary discussion regarding the risks and benefits of persevering with an enterostomy versus early closure.

G218(P) NORMAL OXYGEN SATURATION VALUES; DATA FROM TERM INFANTS USING MASIMO RADICAL 7

¹C Godden, ¹E Mullan, ¹HM Mactier, ²R Hamilton. ¹Neonatal Unit, Princess Royal Maternity Hospital, Glasgow, UK; ²Medical Physics Department, Royal Hospital for Children, Glasgow, UK

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Aims Chronic lung disease affects up to a third of babies born prematurely in the UK.¹ For some, this necessitates discharge home on supplemental oxygen. Criteria for identifying these ex-preterms vary between units. Increasing use of formal

saturation profiles using the newest saturation recording devices in apparently asymptomatic babies reveals previously unsuspected reduction in oxygen saturations. The significance of this is not clear as there are limited data on normative values in this population.

A pilot study of oxygen saturation limits in 40 healthy term newborns was designed to define normative values, with the aim of better informing interpretation of oxygen saturation profiles in ex-preterms.

Methods Overnight saturation monitoring was undertaken in healthy term newborns aged 24–36 hours using the MASIMO Radical 7 device. Recording was for up to 12 hours and mothers logged pertinent events.

Results To date 19 studies have been completed. A 5000 replicate robust quantile bootstrap methodology with outlier detection² was used to give a 95% reference range with a 90% confidence interval for each respective value as below: (table 1)

Abstract G218(P) Table 1

	n=19
Mean saturations (%)	95.7
Median saturations (%)	97.98
5th centile (%)	94.98
95th centile (%)	99.51
Number of dips per hour (mean)	29.8
Minimum saturation level in a dip (%)	74

Significant dips to 74% occurred in 3 subjects, all coincident with handling, feeding and/or changing. Collecting data has been hampered by frequent movement artefact triggering alarms and resulting in removal of sensors.

The study is ongoing, and a time-dependent reference range will be constructed using a hierarchical regression approach to summarising data, in order to deal with covariance and increase resolution of the final range. We anticipate that greater number of data points will result in widening of the reference range at the lower end.

Conclusions Interim data using the next generation of monitors demonstrate oxygen saturations >93% for >95% of the time, in healthy newborns, suggesting that this should remain the target for ex-preterm babies when discharged home. Recording normative data may be improved with a two point sensor application to minimise movement artefact.

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HYDROCORTISONE TABLETS: HUMAN FACTORS IN MANIPULATION AND THEIR IMPACT ON DOSING ACCURACY

^{1,2}C Watson, ³S Kerr, ³J Davies, ⁴H Stirling, ^{1,5}E Webb, ²H Batchelor. ¹Institute of Metabolism and Systems Research, University of Birmingham, Birmingham, UK; ²School of Pharmacy, Institute of Clinical Sciences, University of Birmingham, Birmingham, UK; ³Department of Endocrinology and Diabetes, Southampton General Hospital, Southampton, UK; ⁴Paediatric Department, University Hospitals Coventry and Warwickshire, Coventry, UK; ⁵Department of Endocrinology and Diabetes, Birmingham Children's Hospital, Birmingham, UK

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Background Exposure to deficient or excess glucocorticoids is associated with increased morbidity in patients with adrenal insufficiency. An age-appropriate low dose hydrocortisone formulation is not available and manipulation of adult medication is required with potential for inaccurate dosing. Licensed pharmaceutical products must contain $\pm 10\%$ of labelled drug content.

Aims To assess the variability in manipulation procedures undertaken by parents/carers and to quantify the dose-variability in the manipulated product based on the method of preparation.

Methods Parents of children with adrenal insufficiency completed a survey assessing the methods used to manipulate hydrocortisone 10 mg tablets. A sub-group were asked to manipulate a scored 10 mg hydrocortisone tablet (Auden Mackenzie brand) to provide the prescribed dose for their child as they would at home. Hydrocortisone content was analysed according to the current European Pharmacopoeial method.

Results One hundred and twenty-nine parents completed the questionnaire. Overall 55% of parents break or cut the tablet and 43% suspend the tablet in water prior to administration. 34% are prescribed a dose indivisible by 2.5 mg of whom 33% break the tablet to acquire the dose. Twenty-seven parents/carers participated in the sub-study and the target doses they prepared ranged from 0.5–7.5 mg. Forty eight per cent of the preparations were within 10% of the target dose; 74% were within 20% and 82% were within 30%. Based on this small sample size the most accurate method of tablet manipulation is to split the tablet along the score lines. However, this is only possible for doses divisible by 2.5 mg. Dispersion of the tablet in water and withdrawal of the relevant volume was associated with poor accuracy.

Conclusions Children are at risk of suboptimal dosing when parents/carers are required to manipulate adult products to provide the appropriate dose to children. This risk is greatest