1.6 to 5 mm. Twenty-nine patients were given non-selective ventilation and twenty-three were anesthetized using selective right-lung ventilation using a 2-F balloon catheter for arterial embolectomy. A left lateral mini-thoracotomy was performed in all infants and PDA closure achieved by double ligation using zero silk sutures.

Results The median operative time and mean length of hospital stay were 45 minutes and 90 days, respectively. No major hemorrhage requiring blood transfusion occurred during the surgery. The survival rate until hospital discharge was 88.5%. There were no mortalities associated with the surgery itself. Six (11.5%) neonates died postoperatively because of prematurity (P-value=1.000). Pneumonia and atelectasis were among the few complications encountered post ligation. An association was recognized between ventilation and surgical complications; that is neonates who underwent selective right ventilation did not experience any of the complications mentioned above in comparison to those who were put under non-selective ventilation (P-value <0.001).

Conclusions Closure of PDA by double ligation via a left mini-thoracotomy in small premature infants proved to be safe and effective in providing pediatric surgeons adequate exposure within confined and delicate anatomic spaces. No procedure related mortalities or major complications were encountered. It is a useful option in neonates with failed medical management of PDA especially in preemies where performing VATS is challenging.

Abstract 132 Table 1 Proportion of success at first attempt cannulation (Age wise)

Age	Conventional	Intervention	Chi square P value
3 months to 6 months	41/115(36%)	56/84(67%)	0.001*
7 months to 12 months	29/83(35%)	32/52(63%)	0.001*
13 months to 18 months	27/53(51%)	26/40(65%)	0.175
19 months to 24 months	6/10(60%)	7/11(64%)	0.864
25 months to 30 months	8/16(50%)	4/7(58%)	0.752
31 months to 36 months	8/21(38%)	10/16(63%)	0.141

Abstract 132 Table 2 Median number of pricks required to successfully cannulate (Nutrition wise)

Weight/height	Conventional		Intervention		P value
	Median (IQR)	N	Median (IQR)	N	
<-3 Z SCORE *Severe acute Malnutrition*	2(1–3)	48/102	1(1–2)	45/65	0.002*
-3 TO -2 Z *Moderate Acute Malnutrition*	2(1–3)	26/56	1(1–2)	26/42	0.112
-2 TO -1 Z SCORE	2(1–3)	19/50	1(1–2)	22/33	0.170
-1 TO MEDIAN	2(1–3)	18/51	1(1–2)	26/33	0.01*
> MEDIAN	2(1–2)	08/39	2(1–3)	17/37	0.027*

132 TO COMPARE EFFECTIVENESS OF INFRAREDSPECTROSCOPIC TECHNOLOGY WITH CONVENTIONAL PERIPHERAL VENOUS ACCESS IN CHILDREN: RANDOMIZED CONTROL STUDY

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Background Although considered to be a routine minor intervention, intravenous cannulation can often be difficult and potentially painful. The implications maybe more pronounced in younger children. Otica pediatric LED uses near infra-red light to enhance the visibility of veins and thus to negotiate difficult venous access. In our study we hoped to explore the utility of NEAR INFRARED TECHNOLOGY in children with difficult peripheral venous access.

Objectives To assess the superiority of near infra-red spectroscopic technology over conventional vein viewing techniques in children with difficult peripheral venous access.

Methods From November 2018 to August 2020, 509 children aged 3 to 36 months satisfying the inclusion criteria for difficult cannulation (based on DIVA score) were included. Randomization was attempted by employing Otica pediatric LED (intervention group) and conventional methods (control group) every alternate fortnightly by the same set of residents. The median no. of pricks before successful cannulation per child in each group, and the proportion of first attempt success rate in each group were the primary end points.

Results The median no. of attempts was lower in the intervention group (1; IQR 1–2) than in the control group (2; IQR 1–3, p<0.001). Proportion of cannulations successful in the first attempt was 64% (136 of 211) in the intervention group and 40% (119 out of 298) in the control group (p <0.001). From the sub-group analysis we found significant difference between both the groups when analysed across the age-groups as well as the nutritional status. An interesting finding in the trial is that the advantage with the NIR device was significant in children requiring more than one instance of cannulation (those that are not IV line naive).

Conclusions In our study we found a significant clinical advantage with the use of Otica pediatric LED consistent across the sub groups. However to vouch for any routine recommendation will require a larger and perhaps a multicenter study to begin with. While the busy and shuffling schedule of a residency inherently weighs down on any interventional study, the results of our study calls for an optimistic investment into the research in near infrared technology for standard cannulation procedures.

135 REDUCING BLOOD TESTING IN PICU, A QUICK QI PROJECT

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Background

Introduction Critically ill children are at significant risk of repeated blood sampling for laboratory testing, which could lead to nosocomial anaemia and blood transfusions[1]. We aimed to optimise blood testing and the associated costs in PICU without adversely impacting patient safety and outcome.

Objectives As part of the quality improvement initiative, a bedside guideline for common blood tests was introduced in 2014 based on a patient stratification system. We wanted to check if our practice is compliant with the guideline.

Methods We prospectively measured compliance with the guideline in a randomly selected subset. After doing the first cycle, we presented the results locally along with regular education of PICU medical and nursing staff. We compared the total number of blood tests requested and their costs per patient-day in three days-blocks pre-intervention (October 2019) and post-intervention (January 2020).

Results Prospective audit data showed compliance with the guideline in 8 of 24 (33.3%) patient-days studied. The total number of tests increased from 179 to 191 (% increase) in the post-intervention period. Patient-days had increased from 24 to 39 (% increase) in the corresponding period.

The proportion of patients needing level 3 and 4 care2 was higher in the post-intervention period (48.7% vs. 41.6%). The average number of blood tests requested per patient-day decreased from 7.45 to 4.89 post-intervention, a 34.3% reduction. The average cost per patient-day decreased from £36.6 to £24 post-intervention, a 34.4% cost saving. The savings over 12 months would be £51,458.4 based on 4084 patient-days in 2019. There were no adverse events reported due to lack of blood results

Conclusions Blood testing rates can be safely reduced in critically ill children.

136 USING GONAD SHIELDS IN PAEDIATRIC X-RAYS

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10.1136/bmjpo-2021-RCPCH.75

Background The problem of inaccurate placement of gonad shields in children has been highlighted by several publications nationally and internationally.[3]

A written departmental protocol for the correct use of gonad protection, with regular audit, will:

- Avoid confusion over when and where gonad protection is required
- Help new staff and locum staff to adapt readily and easily to local policy
- Reduce gonad dose without significant loss of radiographic information

Objectives

- The aim of the study is to make sure that children's gonads are protected from the unnecessary harmful radiations caused by x-rays that can affect them in the long term
- Gonad protection should be used according to the local policy in all cases.[1 2] (The guidelines of the paediatric radiology department at BRI)
- Initial Hip/Pelvic x-ray doesn't require gonad shield to avoid obscuring the sacrum in females or symphysis pubis in males.
- Gonad shield should be used and positioned accurately in all subsequent images.

Methods

- PACS system was used to search for 2 views Hip/Pelvic X-ray in patients <16 years old at BRI hospital.
- Retrospective study (Audit: September 2017 – April 2018)

(Re-audit April 2017 – August 2018)

- Each image was assessed to determine the presence or absence of gonad protection and whether the protection was placed correctly or not.

Results

- The results were discussed at the radiological clinical governance meeting.
- The superintendent radiographer has sent a reminder e-mail to all the radiographers discussing the importance of not only using the gonad shield but also placing it correctly.
- Reminder posters to use the gonad shield were put in every x-ray room.
- A course has been conducted for the new radiographers by a senior radiographer about when and how to use the gonad shield.
- The local guidelines have been reviewed and simplified to make it easier to follow.
- Gonad shields have been used in the correct position in 60% of patients after implementing the changes compared to 33% only in the first cycle.

Conclusions It was noticed that the percentage of the well-positioned shields has improved dramatically from 33% to 60% after implementing the previous changes.

137 USING EXTUBATION CHECKLIST IN NICU TO IMPROVE THE SUCCESSFUL EXTUBATION RATE

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10.1136/bmjpo-2021-RCPCH.76

Background Mechanical ventilation is a cornerstone of managing respiratory failure in preterm infants. Whilst its role to improve the survival rate has been proven, it can also result in unintended harm.[1 2]

It can increase the risk of developing bronchopulmonary dysplasia, sepsis, neurological injury, and retinopathy of prematurity. Because of that, clinicians aim to extubate preterm infants as early as possible. [3 4]

Given that approximately two-thirds of infants born before 29 weeks' gestation require intubation, an extubation checklist was implemented at the neonatal intensive care unit at Leeds General Infirmary hospital and St James hospital trying to improve the successful extubation rate.

Objectives To identify if using the extubation checklist has helped to reduce the rate of unsuccessful extubation in preterm infants in neonatal units at Leeds general infirmary hospital and St James hospital.

Methods

- A retrospective cohort study of extremely preterm infants (<27 weeks gestational age) or ELBW infants (birth weight <1000 g) requiring mechanical ventilation during the period 01/01 – 30/06 in 2013 and 2018 (pre and post-implementation of the extubation list).
- Successful extubation is defined as not requiring reintubation for 72 hours post-extubation.
- Badger system was used to search for all patients who were admitted to LGI & St James neonatal unites during the 2 periods of 01/01/2013 – 30/06/2013 and 01/01/2018 - 30/06/2018.
- Notes for the identified patients were requested from the archive.
- Dates of extubation and re-intubation attempts were obtained from the notes

Inclusive criteria