3. Outstanding NIPes (Neonatal/Infant Physical Examination), causing delay at discharge were highlighted
4. Exception Reporting discussion at a junior/senior meeting
5. Bleep-free Handover trialled again
6. Improve co-ordination on postnatal wards by encouraging joint doctor-midwife 'huddles'
7. Reduce interruptions on postnatal wards
8. Start handover earlier on postnatal wards

Results An initial run chart showed doctors stayed back a mean of 52 minutes per doctor (Range 0–180 minutes) after their shift was due to end.

Over this project, the mean time doctors stayed back at the end of a shift was reduced from 52 minutes to 28 minutes per doctor per shift.

The most successful PDSAs were improving co-ordination on postnatal ward, and starting handover earlier.

Exception reporting, the main tool for safeguarding working practices is rarely used, despite there being no barriers to do so.

A narrative of doctor's viewpoints showed diverse attitudes including:

'I don't want to handover rubbish!'

'It's just a job.'

'I'm lucky to have the job on my terms, I don't mind staying late.' (part time trainee).

Conclusions There was exemplary engagement of seniors during the course of the project. Furthermore, the actual scheduled working hours were within European Working time directives.

Staying on beyond the shift pattern produces tired, burnt-out doctors, who are more likely to make mistakes or even leave the profession. Safeguarding work-life balance is an important aspect of doctors' and ultimately patients' well-being. The project demonstrated that multiple small adjustments can improve the efficiency of the working day, enabling doctors to leave work on time.

Changes can be considered in three areas.

1. Managing clinical workload
2. Operational Management
3. Doctors views/attitudes (the psychological aspect).

The overall aim is to work smarter, not harder. Quality Improvement Methodology is a powerful tool to enable important change to occur in many aspects of the workplace, contributing to betterment of doctors' work-life balance. This project illustrates this in a novel way. It is now more relevant than ever as the medical profession recovers from the impact of COVID-19.

British Association of Perinatal Medicine and Neonatal Society

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RISK FACTORS FOR LIMB ISCHAEMIA DURING FEMORAL ARTERIAL CATHETERISATION IN THE NEONATAL INTENSIVE CARE UNIT

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Background Intravascular arterial access is used during neonatal intensive care for continuous accurate monitoring of arterial blood pressure and for reliable blood gas measurements.

Common vascular access sites are the umbilical arteries (UAC) and some peripheral arteries. When these routes are not available, a femoral artery catheter can be inserted (FAC).

The leg has some protection against ischaemic injury during FAC insertion by the collateral arterial supply around the hip, but limb ischaemia is a risk. All intensive care procedures have associated risk and the risk and benefits of FAC insertion in an individual patient need to be considered before insertion.

Objectives To review outcomes of FAC insertion in a single large neonatal unit over a 12 year period between 20/8/2008 and 11/5/2020 to identify which babies are at risk of limb injury.

Methods The electronic patient record was used to identify all the neonatal patients who had a FAC insertion between 20/8/2008 - 11/5/2020. Data extracted included: patient demographics, details of the line insertion procedure, reasons for line removal, evidence of compromised limb circulation, and the occurrence of ischaemic injury. Each case of ischemic injury was further investigated.

Results 147 FACs were inserted.

	Median	Lower quartile	Upper quartile
BWt (g)	1012.5	682	2870
Gestation (weeks)	27	24	37
Wt at insertion (g)	1298	882	3000
Age at insertion (days)	12.03	2.02	24.39
Duration of line (days)	4.5	1.9	9

All patients were ventilated at the time of the insertion, and 78% were also receiving inotropes.

Impaired limb perfusion occurred in 32 (21%) patients. This recovered when the line was removed in most cases. The risk of impaired limb perfusion was greater with lower weight at the time of insertion.

Wt on insertion	n	impaired circulation	% impaired circulation
<900g	37	15	40.5
900 to 1300g	34	10	29.4
1301 to 3000g	37	6	16.2
>3000g	34	1	2.9

In 6 babies the impaired perfusion did not recover and injury was sustained. In all cases there was evidence of a delay in the recognition of impaired perfusion and therefore a delay in removal. 2 babies had an associated cause of intraluminal arterial obstruction (co-existing UAC, non occlusive aortic thrombus) and 2 others had previous concerns about limb perfusion that were thought to have resolved at the time of FAC insertion.

Conclusions FAC insertion can enhance the clinical care that babies receive in the Neonatal Intensive Care Unit. Emphasis should be on appropriate patient selection for the procedure,

and rapid response to any evidence of vascular compromise with immediate line removal. Smaller babies and babies with other co-existing causes of impaired limb perfusion appear to be at highest risk of injury and the risks may outweigh the benefits in these babies.

British Society of Paediatric Gastroenterology, Hepatology and Nutrition

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REVIEW OF DIAGNOSIS AND MANAGEMENT OF COELIAC DISEASE IN A DISTRICT GENERAL HOSPITAL IN THE NORTH WEST (AUDIT)

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Background The guidance for Coeliac Disease (CD) has evolved over the last few years. The ESPGHAN guidelines from January 2020 state that HLA typing is not mandatory. Asymptomatic and symptomatic children will require the same diagnostic approach where biopsy is not required as long as high serological markers are confirmed.

This change will significantly help in improving diagnosis of undiagnosed cases and in diabetic children with a positive screen.

Objectives

1. To review the management of patients and compare it with the latest ESPGHAN/BSPGHAN guidelines.
2. To review time to confirmed diagnosis from the start of the symptoms.
3. To look at the provision of Gluten-free products at schools and Primary Care services.

Methods Retrospective data collected from the Coeliac database from January 2018 till November 2020 in a District General Hospital with provision for a dedicated Coeliac Clinic supported by a Specialist Dietician. We reviewed the presenting symptoms, methods of confirmation of CD, time duration from onset of symptoms till diagnosis, provision of gluten-free meals at schools, and availability of gluten-free products on prescription.

Results 35 patients were diagnosed with CD, 31 were symptomatic and 4 were asymptomatic.

27/31 of the symptomatic patients had high-level tTG (>10 times the upper limit), 20 had positive EMA and HLA DQ2/DQ8 for a confirmed diagnosis. The two negative EMA were referred for biopsy.

Five had HLA typing, no EMA but had had high tTG on two separate occasions which confirms the diagnosis.

Four symptomatic patients with low tTG<10x, had biopsy confirmation. 4 asymptomatic patients had high tTG and +ve EMA.

Of 28 patients referred from primary care, Seven were screened and referred with symptom duration of 4–12 months. Another 7 were diagnosed through screening due to positive family history or type1 Diabetes Mellitus. Fourteen cases had no specific duration of symptoms recorded. The remaining seven were diagnosed by hospital paediatricians due to different presentations.

Most parents stated that they were providing a packed lunch box even if the school provided some gluten-free meals as the menu choice lacked variety. Patients with Type 1 diabetes found a packed lunch easier for carbohydrate counting. Parents felt tailor-made menu recommendation from the dietician to the school would be beneficial for families and the school.

Conclusions We thus identified that 88.5% of patients had met the criteria for the diagnosis of CD as per 2015 guidelines, but if 2020 guidelines were applied all the patients would have met the criteria.

Recommendations:

1. Identifying the duration of time needed for the child to be screened will help to raise awareness within primary care practice. This will be audited in the future.
2. There is a large knowledge gap in schools about CD and the importance of convenient access to gluten-free meals in enhancing compliance with gluten-free food in children. Offering tailor-made presentations to the local schools will address this issue. A further review to identify if a similar knowledge gap exists in schools regionally is planned.

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ROLE OF OXYGEN SATURATION HISTOGRAM PROFILES IN PREDICTING HYPOXEMIA AND HYPEROXEMIA IN PREMATURE INFANTS

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Background Supplemental oxygen is the commonest ‘drug’ used in the NICU; goals of therapy is to maintain normoxia whilst minimising hyperoxemia and hypoxemia.

Objectives To determine the percentage of time preterm infants, spend with oxygen saturation (SpO₂) <90% and >95%, and to assess whether 4-hour SpO₂ histograms are predictive of 24-hour SpO₂ histogram profiles.

Methods This prospective audit reviewed 100 SpO₂ histogram profiles for 60 preterm infants (birth gestation between 23+0 and 33+6 weeks) admitted to the NICU, requiring invasive and non-invasive respiratory support, at different points of their neonatal course, between 01/01/2020 to 01/11/2020. Pre-term SpO₂ target range within this NICU is 90–95%. We collected SpO₂ histogram data from bedside Phillips monitors at 5% intervals displaying the percentage of time spent in SpO₂ ranges, at 4-, 8-, 12- and 24-hour intervals.

Results Mean birth gestation was 26.8 ± 2.4 weeks and mean corrected gestational age at the time of the study was 30.4 ± 2.5 weeks. Twenty preterm infants required conventional mechanical ventilation, 28 CPAP, 26 HFNC, 14 low flow oxygen and 12 had no respiratory support at the point of the study.

Table 1 shows preterm infants spend substantial amounts of time outside of their SpO₂ target range; hyperoxemia was especially marked. Infants <27 weeks versus infants >27