



# Abstract Book



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# The experiences of consultant paediatricians involved in end-of-life care for children with a palliative diagnosis

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## Abstract

**Objective:** There is limited access to a specialist children's palliative care consultants in the UK. End-of-life care for children is predominantly led by consultant paediatricians who have a variance of experience and training regarding palliative care. There is limited literature which considers the experiences of paediatricians in delivering this care. This qualitative study aims to explore views and experiences of consultant paediatricians who have been involved in providing EOL care for children with a palliative diagnosis and increase understanding of the facilitators and barriers paediatricians face when delivering paediatric palliative care to their patients.

**Methods:** A phenomenological approach, using semi-structured interviews with a purposeful sample of nine consultant paediatricians from three acute district general hospitals in the South West of England. Interviews were recorded digitally, transcribed verbatim and analysed thematically using a framework approach.

**Results:** The findings are categorised into four themes. 1. communication with others 2. Confidence to deliver EOL care 3. making decisions regarding EOL care 4. The emotional impact of the EOL situation. Barriers identified by paediatricians in providing EOL care include; time constraints, uncertainty of prognosis, infrequency of cases, the coronial process and lack of emotional support. Facilitators include; having a relationship with the child/family and wider healthcare team, peer support and access to specialist advice, shared decision making and EOL planning with the MDT. The emotional and personal burden on paediatricians was found to be significant to all participants and influenced communication, decision making and confidence.

**Conclusions:** Paediatricians find EOL situations challenging and emotionally difficult but are in a good position to provide EOL care due to their ongoing relationship with the family and ability to work with wider MDT. Specialist palliative care services should increase training and learning opportunities for health professionals and health organisations must do more to recognise emotional burden and develop strategies to improve formal and informal support strategies.

# Home use of breast milk fortifier to promote post discharge growth and breastfeeding in preterm infants: a quality improvement project

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## Abstract

**Objectives and background:** The use of nutrition guidelines in the Princess Anne Neonatal Unit has resulted in improved nutritional intake and reduced growth failure amongst preterm infants. However, concerns about growth failure in exclusively breastfed infants following discharge led us to develop a quality improvement (QI) project which aimed to improve the post discharge growth of exclusively breastfed preterm infants, born weighing  $\leq 1.8\text{kg}$ , by using breastmilk fortifier (BMF) until 48 weeks gestational age. The use of mixed feeding e.g. preterm formula feeds/breastfeeding is common, although this erodes maternal confidence and increase anxiety around breastfeeding leading to early breastfeeding cessation.

**Methods:** We completed four plan-do-study-act (PDSA) cycles to develop an electronic patient information sheet to promote the use of BMF up to 48 weeks gestational age. A parent questionnaire was completed considering the use of BMF at home. In addition a retrospective audit (July 2015–September 2017) was completed investigating the effects of home BMF on growth up to 1 year of age. The main outcome measure was change in standard deviation scores for weight for age, length for age and head circumference of age at various time points compared to those at birth.

**Results:** We compared the results to a historic cohort of infants born October 2012–November 2013 (a time before the nutrition guidelines were implemented). Growth was improved amount infants discharged with BMF (measured as the change in SD score from birth) for weight (SDS -0.7), head circumference (SDS 0.4) and length (SDS -0.8) at discharge, and for weight (SDS 0.9) and length (SDS 0.8) at 1 year. In addition home BMF use appeared to be safe and parents found its use acceptable.

**Conclusion:** Quality Improvement methods facilitated the successful integration of BMF into routine clinical care after discharge, improving the growth trajectory of exclusively breastfed preterm infants discharged home, as well as supporting, breastfeeding in this vulnerable population group.

# Improving growth of infants with congenital heart disease using a consensus-based nutritional pathway

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## Abstract

### Objectives and background:

Infants with congenital heart disease (CHD) often have growth failure before surgery, which is associated with increased morbidity and mortality. A consensus based nutritional pathway was developed aiming to i) reduce variation in nutrition management of infants with CHD, ii) promote early referral to a dietitian and iii) improve clinical outcomes e.g. paediatric intensive care unit length-of-stay (PICU-LOS).

### Methods:

Forty-four infants <12-months-of-age with CHD were recruited from University Hospital Southampton Foundation Trust, during the neonatal period (November 2017-August 2018) and followed by a Cardiac Multi-disciplinary Nutrition team up to 4-months pre-operatively. Infants were assigned to a nutrition care plan based on their nutrition risk, which included the use of nutrient-energy dense infant formula. Clinical outcomes and growth variables were compared to a historic control (n=38) matched for CHD lesions from 2012–2013.

### Results:

Comparing growth to the control (n=38), infants in the study cohort (n=44) had significantly improved linear growth at 12-months-of-age HAZ  $-0.6 \pm 0.9$  compared to the control  $1.4 \pm 1.4$  ( $p=0.04$ ). Duration of mechanical ventilation was significantly lower in the study cohort  $5.1 \pm 8.2$  days vs. control  $11.7 \pm 15.8$  days ( $p=0.009$ ) and the PICU-LOS was significantly shorter; study cohort  $8.2 \pm 11.6$  days vs. control  $18.3 \pm 24.0$  days ( $p=0.006$ ).

### Conclusion

Linear growth was improved in infants at 12-months-of-age using the pre-operative nutritional pathway compared to the control cohort. We have previously demonstrated children with poor linear growth are 5 times more likely to have increased PICU-LOS; the significant reduction in PICU-LOS may therefore be as a result of improvements in growth. However, this may also be as a result of other factors e.g. changes in surgical/post-operative medical management. This pilot study shows the use of consensus-based standardized nutritional pathway in these infants has the potential to improve growth and clinical outcomes.

# Head home: Paediatric Head Injuries with Discharge At Triage (HIDAT). A prospective cohort study of a Nurse led paediatric head injury protocol at a district general hospital. A pragmatic practice worth adopting?

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## Abstract

**Objectives** - To assess if a nurse led paediatric head injury protocol would be safe compared to current practice.

**Methods** - Head injuries presenting to our Emergency department (ED) from 1st May to 31st October 2018 had data prospectively entered using a mandated electronic 'Head Injury Discharge At Triage' questionnaire (HIDATq). Analysis centred on those who screened negative and if discharge at triage would have been safe. The primary end point was the need for computography (CT) brain with secondary endpoints of clinically important intracranial injury (ICI) and representations.

**Results** - Of 1739 patients 1052 screened negative. 1 CT head occurred in this group showing no abnormalities and was against local guidelines. 349/1052 (20% of total cohort) had 'no injuries' and 543/1052 (30% of total cohort) had 'abrasions or lacerations'. HIDATq's negative predictive value was 99.9% (CT) and 100% (ICI). The positive predictive value of the tool was low but it was not designed for this purpose. 72 CT's were performed due to trauma (7 abnormal) with a local total CT head rate of 4.2%. There were minimal representations (2%).

**Conclusion** - A negative HIDATq appears safe in our ED. Potentially 20% of all head injuries presenting to our department could be discharged by nurses at triage with adequate safety netting advice as 'ultra low risk' for significant intracranial pathology. This increases to 50% when those with lacerations or abrasions are included. This has the potential to significantly reduce paediatric ED crowding and waiting times at our centre.

Between 20-50% of head injuries may not have needed to attend ED. Nationally this has an estimated cost implication of £42 million pounds per year. Medical and public health education/training may significantly reduce this expenditure in the long term.

# EDUCATIONAL STRATEGY TO EMPOWER JUNIOUR NURSES TO UNDETAKE PATENTAL TEACHING WITHIN A TERTIARY PAEDIATRIC ONCOLOGY CENTRE

## Author

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## Abstract

### Background:

The treatment of children and young people (CYP) with a cancer diagnosis can be complex. However, there will be times when CYP are at home, therefore needing to be confident in managing side effects, identifying healthcare professionals to liaise with and adhering to treatment specific advice. Prior to discharge after initial diagnosis every family receives a parent held oncology record book (PHOR), containing the aforementioned information. For the family's understanding of the PHOR to be assessed, a knowledgeable nursing workforce is required.

### Objective:

To create and implement an education strategy to empower junior nurses to provide teaching contained in the PHOR, to parents/carers of CYP with an oncological diagnosis.

### Method:

A timeline was established for PHOR teaching for all new and current junior nurses within the unit. An initial foundation day was mandatory followed by an introductory study day covering all aspects of the teaching. A competency document was implemented, identifying dates of study days, witnessing a senior nurse delivering teaching, being supervised and deemed as competent. Parental teaching was also added to the list of requirements in the initial probationary period.

### Results:

Evaluation forms after each study day and formal feedback was obtained from all nurses. Results indicated they felt more equipped for the task and were supported by their senior colleagues. At the end of the initial six-month probationary period all nurses had completed their PHOR competencies and were confident in delivering teaching unsupervised.

### Conclusion:

Implementation of an education strategy for junior nurses to deliver PHOR teaching in the form of teaching and a competency document has increased the confidence and competence of nurses to carry out this task as well as their understanding of treatments and side effects. With an increase in competent nurses, patients received their information earlier on in treatment.

# Feeding Difficulties in Young Paediatric Intensive Care Survivors: A Scoping Review of the Evidence

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## Abstract

Objectives and background

In childhood, oral feeding is established as a reciprocal process, one that is essential in the life experience of young children. However, critical illness may interrupt feeding skill acquisition or result in a regression of feeding skills. The association between critical illness and feeding difficulties are well described in survivors of adult intensive care and complex feeding disorders are described in children with congenital heart disease (CHD) and preterm infants, resulting in growth failure and significant parental anxiety. There is a paucity of evidence describing the prevalence of feeding difficulties amongst paediatric intensive care (PICU) survivors and subsequent impact on family life. The aim of this work was to complete a scoping review of evidence describing feeding difficulties amongst PICU survivors.

Methods

Using predefined search terms, an advanced search was conducted of six electronic databases plus grey literature and cross-referencing. Publications were eligible if they reported feeding difficulties and parental experiences amongst PICU/preterm graduates. Following initial title and abstract review, two reviewers independently screened full-texted publications and extracted study data.

Results

9618 articles were identified searches, 88 publications were initially reviewed, and seven studies met the inclusion criteria. Definitions and extent of feeding difficulties reported varied considerably. Common features included oral aversions, delayed development of feeding skills and feeding as a source of parental stress beyond the acute hospital discharge period. Risk factors included for feeding difficulties included, length of intubation and post-operative dysphagia following cardiac surgery.

Conclusions

There is limited evidence describing feeding difficulties amongst young survivors of intensive care. As the majority of PICU admissions are infants, there is a need to explore this further to describe the prevalence of feeding difficulties and develop appropriate toolkits to reduce the burden of feeding difficulties post-discharge, reducing health care utilisation and parental anxiety.

# Animal Assisted Intervention in Paediatric Intensive Care

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## Abstract

### Objectives and Background

The recognition that dogs can provide support to people in many different ways has led to an increase in the number of health and social care settings where dogs are present. Animal Assisted Intervention (AAI) has been associated with some physiological and psychological benefits, including improved mood, improved cardiovascular and stress response indicators and reduced pain and anxiety. Paediatric Intensive Care (PICU) is a unique clinical area, with individual challenges, not only in terms of the types of patients and severity of the disease, but also the emotional response to illness or injury for the parents and staff caring for the children. The use of AAI in PICU has been recognised although there is a paucity of underpinning evidence to support this.

### Methods

A comprehensive literature review has been undertaken, reviewing literature that report on the therapeutic impact of AAI.

### Results

The paediatric studies demonstrate varying findings in relation to reduction of pain and anxiety (Braun et al, 2009; Barker et al, 2015). Uglow (2019) found an overwhelmingly positive response to the therapy dogs' presence throughout a paediatric unit. However, the studies that have been conducted are specific to individual populations, not the PICU population, and limited with small samples and limited transferability. Adult studies suggest that animal assisted therapy resulted in increased happiness, calmness and less loneliness for patients (Cole & Gawlinksi, 1995; Munoz Lasa et al, 2011).

### Conclusions

This literature review presents the impact of AAI in both adult intensive care settings and general paediatric wards. However, the unique environment of PICU has rarely been researched in terms of AAI. Animal assisted intervention within PICU is already established in University Hospitals Southampton and a new quantitative study starting in Autumn 2019 aims to establish whether there are physiological differences as a consequence of AAI.

# Children and young people with inflammatory bowel disease attend less school than their healthy peers

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## Abstract

### Abstract

**Objectives and background:** Chronic diseases, such as inflammatory bowel disease (IBD), can impact negatively on education and social development. Examining the impact of IBD on school/college attendance for children and young people (CYP) is vital to provide targeted support to patients, families and schools.

**Methods:** We performed a cross-sectional survey to determine the school/college attendance rates, the reasons for absence related to IBD and facilitators/barriers to school/college attendance. In a subset followed-up locally, we performed a detailed review of hospital attendance data, to assess the healthcare burden.

**Results:** Two-hundred-and-thirty-one questionnaires were given to CYP with IBD aged 5-17 years. Response rate was 74% (final sample 169). The median school/college attendance rate was 92.5%; significantly lower than all children in England (95.2%). 39.6% of children with IBD were persistently absent, defined nationally as missing 10% or more of school. Only five children (3%) had a 100% attendance record. Increasing age and use of monoclonal therapy were predictors of poor school attendance. Concerns about feeling unwell at school/college, access to toilets, keeping up with work, and teachers' understanding of IBD are the main issues for CYP with IBD. There was a significant negative correlation between number of days in hospital and school attendance.

**Conclusion:** IBD has a significant impact on school/college attendance, with hospital attendance, disease burden, and school difficulties being major factors. Employing strategies to minimise health care burden and developing a partnership between health and education to support children with IBD will serve to facilitate school/college attendance.

# 999 Club, Reducing Children's Anxiety about Emergency Care

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## Abstract

Objectives and background:

There is no preparation for a child prior to attending the Emergency Department (ED). For many, this is their first experience of hospital and they may be scared, in pain or unwell. It can be a frightening time and place.

The 999 Club was created to reduce fears and anxieties associated with attending the ED through a joint initiative with Play Services, the Children's ED and South Central Ambulance Service. It allows children from reception up, the opportunity to 'experience' the department in a fun and informative way.

Methods:

Data is collected via a visual sticker chart that the children fill in at the end, and feedback from the parents on any comments from their child, or differences in behaviour about hospitals they observe. All data collected is anonymous.

Results:

The results have been encouraging. Feedback from over 200 children via visual feedback shows a consistent 100% positivity. In total, 3 have highlighted 'good' while the others have chosen 'great'. Parents showed overwhelming interest to sign their child up to attend. One parent wrote that her son was apprehensive about attending as he did not like hospitals, however, he loved the trip and could not stop talking about it. Another said that although her child was familiar with hospital situations "it brightened her thoughts to see it from a different perspective".

Conclusions:

The 999 Club allows us to highlight children with significant fears or phobias of hospital or procedures thereby providing support early enough to avoid any long term emotional/ psychological trauma. Children who are not ill are more able to rationalise and understand what is happening and willing to try new things. Some children who are scared at the beginning have conquered their fears quicker resulting in them engaging more with what is happening. This is more challenging when they are unwell.

# 'A Round of Our Paws' Therapy Outside the Norm

**Author** Joyce Stebbings, Southampton Children's Hospital

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## **Abstract**

Objectives and background:

The Animal Assisted Intervention Team formalised in 2018. They work with Child Health professionals, parents/ carers, children and young people to promote improvement in a child's physical, social, emotional, or cognitive function through animal assisted activity and goal oriented and structured interventions.

Two studies were carried out and aimed to evaluate the current service, identify any improvements to be made, how it was received, did it only work for those with dogs in their own environment, and, finally, could we promote a real improvement for the child/ young person referred.

Methods:

The initial study asked parents, relatives, carers and staff to complete a questionnaire via an online link. 200 surveys were collected in total, 118 from parents/relatives/carers, and 82 from staff.

Once the survey completed, the handlers started to document who they saw, ages, areas visited, and the support offered over 12 months. All feedback collected was anonymous.

Results:

Although collated separately, the results unanimously demonstrated a positive result. 100% supported encouraging other hospitals to have therapy dogs as part of their team.

The handler's data showed 2,496 patients, siblings, parents, and visitors were seen, with 599 requiring successful animal assisted intervention. This surprisingly not only included patients but other members of the family. Referrals increased month by month.

Conclusions:

The human-animal bond is strong and if used correctly can make an overwhelming difference to a child's wellbeing and how they overcome difficulties with procedures, diagnosis, or even build self-confidence. Although mainly focused on the patients the benefit was also noted in parents, siblings and staff morale.

We noticed multiple benefits ranging from less fear when having investigations, a reduction in pain relief, better engagement with physio and improvements in a child's clinical observations when the dogs were present. Further studies are planned.

# Improving the Quality of Information to Parents on the Special Care Baby Unit (SCBU)

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## Abstract

Objectives and Background:

Having your baby admitted to the SCBU can be a traumatic experience for families, causing anxiety and uncertainty. It is essential that the team provide clear, consistent communication to parents to alleviate stress and ensure that parents understand what is happening to their baby.

The Bliss Charter Audit found a third of families admitted to the unit had not been given a welcome leaflet. The current leaflet was very out of date.

The objectives of this project were to create an innovative Welcome Pack as a communication tool:

- To reduce anxiety and promote parental involvement
- To improve communication and consistency of information with parents.

Methods:

After looking at information provided in other neonatal units and recent studies on improving communication with families and parental experience on neonatal units, a new information leaflet was written as a two sided A4 word document. For ease of reading and accessibility, the leaflet was printed on pale yellow paper.

A5 wallets were obtained to create a compact pack for the leaflet, copy of the Bliss Handbook and a selection of other booklets. We wanted to be able to personalise the packs.

A draft pack was presented at a team meeting. The pack was left at the nurse's station and the team were asked to write feedback.

Changes were made to some of the wording on the leaflet. A questionnaire was created for parents to complete feedback. The feedback received has been overwhelmingly positive. An update was given to the team at the team meeting and a survey monkey created for individual feedback.

Results:

Feedback from parents, the team and recent Bliss Audit data indicates that the welcome packs have resulted in safer, more consistent information being given to families and has improved communication overall. The survey also identified that training is required to ensure that team members go through the pack contents with parents on admission and be shown how they can personalise them.

Conclusions:

The welcome pack was ratified by the Trust for full implementation at the unit. A welcome pack for transitional care is now being written.

# IMPLEMENTING AN EARLY FEEDING PATHWAY POST-GASTROSTOMY INSERTION REDUCES INPATIENT STAY

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## Abstract

**Aim:** There is no consensus regarding post-operative feeding strategy following gastrostomy insertion in children. We implemented an early post-operative feeding pathway as part of a quality improvement initiative, aiming to reduce length of stay (LOS) without increasing complications. The aim of this study was to determine the effect of this pathway.

**Method:** Retrospective, casenote review of prospectively identified children having a new gastrostomy between July 2016 - June 2017 and the year following pathway introduction (July 2017-July 2018). LOS and post-operative complications were recorded and compared. Children kept in hospital for other medical reasons, contemporaneous procedure or had a medical or nutritional reason not to follow the pathway were excluded. The pathway comprised feeding 50% of normal feed at 2 hours post procedure, followed by 100% of normal feed at 5 and 8 hours post procedure. Prior to this, patients were fed post-operatively according to surgeon's preference.

**Results:** 185 gastrostomies were inserted during the study period, 116 met inclusion criteria; 55 prior and 61 after the pathway. Demographics were similar (Table). Insertion methods were similar across the two groups. Children following the pathway had a shorter post-operative LOS than the historical group (median 28 vs 33 hours,  $p < 0.003$ ) whilst immediate ( $< 72$  hours) and early ( $< 30$  day) complication rates were similar (8.2 vs 7.3%,  $p = 1.00$  and 12 vs 16%,  $p = 0.59$  respectively).

**Conclusions:** Early feeding after gastrostomy insertion is safe and reduces LOS. Further quality improvement initiatives may enable realisation of greater reductions in LOS in the future.

	<b>Pre-pathway (n=55)</b>	<b>Post-pathway (n=61)</b>	<b>p*</b>
<b>Age (years)</b>	4.3 (0.6-17.4)	2.4 (0.6-15.6)	0.21
<b>Weight (kg)</b>	14.7 (4.0-52.0)	11.2 (5.0-27.0)	0.05
<b>Male, n (%)</b>	28 (51)	41 (67)	0.09
<b>Neurodisability, n(%)</b>	45 (82)	48 (79)	0.82
<b>Post op length of stay (hours)</b>	33 (22-174)	28 (20-126)	<b>0.003</b>
<b>Complication/re-admission within 72 hours, n(%)</b>	4 (7.3)	5 (8.2)	1.00
<b>Complication/re-admission within 30 days, n(%)</b>	9 (16)	7 (12)	0.59

# The utility of point of care testing of Procalcitonin in paediatric acute assessment units: a service evaluation pilot.

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## Abstract

**Introduction:** Febrile illnesses are a common cause of presentation in acute paediatrics. Rapidly differentiating benign viral illnesses from serious bacterial infections (SBIs) remains a challenge, and biomarkers are frequently used to help decision making. We aimed to see if a point of care test for procalcitonin could help reduce antibiotic use and avoid unnecessary admission for children presenting to acute paediatric units.

**Methods:** A point of care procalcitonin machine capable of producing results within 20 minutes on 20microliters of blood was introduced to the 2 paediatric assessment units across both sites of Hampshire Hospitals Foundation Trust, along with guidelines for clinical scenarios when the test would be suitable and how to interpret results. We performed a prospective, pilot service evaluation, collecting baseline data at the time of testing (including regarding clinician decision making), then retrospectively collected outcome data for all children tested.

**Results:** A total of 68 tests were performed over a 5 months period. Children were predominantly male (58.8%) and pre-school age (Median age 2.9, IQR 1.3 – 6.7). Severity of illness was generally low, with only 11.5% triggering sepsis tools. The primary indication was febrile illness with no source and some concerning features (52.5%). At the time of testing, clinicians reported that were the test not available, they would have admitted 22.1% of patients, and started 26.5% on antibiotics. Following testing, 52.5% of patients were admitted and 47.1% were commenced on IV antibiotics. A low procalcitonin (<0.5ng/L) was observed in 69.1% of patients, however 45.7% of these children were admitted and 34.8% were given IV antibiotics. Procalcitonin performed poorly at detecting SBIs in this cohort (result >0.5ng/L for 1/5 SBIs).

**Conclusion:** There was no clear impact of point of care procalcitonin on admission or antibiotic prescribing in this small pilot study. Clinicians often tested for reasons outside the recommended scenarios and often treated “low risk” patients with antibiotics. These effects may be due to low familiarity with procalcitonin as a biomarker.

# Peptide nutrient-energy dense enteral feeding in critically ill infants – an observational study

## Author

Luise Marino, UHS

## Other Authors and Affiliations

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## Abstract

### Introduction and objectives:

Enteral feeding is challenging in critically ill infants. Target intakes are often not achieved due to fluid restriction, procedural interruptions and perceived enteral feeding intolerance. In those infants perceived to have poor feeding tolerance the use of a peptide nutrient-energy dense enteral feed (PEF) may improve nutritional intake and minimise feeding interruptions due to gastrointestinal symptoms. The aim of this observational study was to characterise the use of a PEF amongst critically ill infants in two paediatric intensive care units (PICU).

### Methods:

Records from critically ill infants <12 months-of-age admitted to two PICUs were retrospectively reviewed with a PICU length of stay (LOS)  $\geq 7$  days. Achievement of nutritional targets for the duration of PEF was reviewed. Gastrointestinal symptoms, including gastric residual volume (GRV), constipation and vomiting, were evaluated as tolerance parameters.

### Results:

53 infants were included, median age on admission 2.6 months. Median admission weight PICU-1 and 3.9kg and PICU-2 4.7kg. Median energy intake in PICU-1 and PICU-2 was respectively 68 (IQR 47–92) and 90 (63–124) kcal/kg and median protein intake respectively 1.7 (1.1–2.4) g/kg and 2.5 (1.6–3.2) g/kg. Feeding was withheld due to feeding intolerance in 1 infant (4%) on 2 occasions in PICU-1 for 2.5 hours and in 2 infants (7%) on 2 occasions in PICU-2 for 19.5 hours. Gastric residual mean volumes were  $3.5 \pm 5.4$  ml/kg in PICU-1 and  $16.9 \pm 15.6$  ml/kg.

### Conclusions:

Peptide feeding in two different centers with different population and feeding indications is feasible without any major complications found. Infants met nutritional targets and there were minimal feeding interruptions arising from feeding intolerance. There may be a role for the use of peptide nutrient-energy dense feed in critically ill infants who are difficult to feed as a result of feeding intolerance and gastrointestinal symptoms.

# Development of feeding information for infants with congenital heart disease

## Author

Luise Marino, UHS

## Other Authors and Affiliations

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## Abstract

Objectives and background:

Infants with congenital heart disease (CHD) often experience growth failure. Ensuring optimal growth before surgery is associated with improved outcomes, and has emerged as a significant cause of parental stress. Parents have reported a perceived lack of accessible feeding information for infants with CHD. To address this gap, the aim of this study was to develop feeding information to better support parents.

Methods:

A search for existing material was carried out on six-electronic databases and an internet search for unpublished (grey) literature on feeding information for infants with CHD. Following the development of feeding information, semi-structured interview(s) with parents/healthcare-professionals were completed, focusing on whether the information was; i) easy to understand ii) relevant iii) provided sufficient information around feeding/feeding difficulties and iv) whether there were any information gaps. Iterative changes were made to the information following each interview. The process was completed until thematic saturation was achieved.

Results:

23 unique articles were identified of which 5 studies were included. From the grey literature 4 web pages were reviewed. Twenty-two parents and twenty-five health care professionals were interviewed. All parents/healthcare-professionals felt the feeding information developed provided sufficient information, however many wanted information on how to introduce complementary food particularly if weaning was delayed.

- Feeding advice for infants with congenital heart disease
- Recipe book - For babies who need to make the most of every mouthful
- Recipe book - For toddlers who need to make the most of every mouthful

Conclusions:

This study describes the development of feeding information for infants with CHD. From parent interviews, gaps identified focused on the introduction of complementary foods, and uncertainty regarding the feeding journey beyond surgery.

# The development of a consensus-based nutritional pathway for infants with congenital heart disease before surgery using a modified Delphi process

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## Other Authors and Affiliations

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Affiliations: University Hospital Southampton NHS Foundation Trust; Department of Dietetics/ SLT 1, Department of Neonatal Medicine<sup>2</sup>, Department of Surgery<sup>3</sup>, Department of Paediatric Cardiology<sup>4</sup>, NIHR Biomedical Research Centre Southampton, University Hospital Southampton NHS Foundation Trust and University of Southampton<sup>5</sup>, University of Southampton; Faculty of Medicine<sup>6</sup>, Faculty of Health Sciences<sup>7</sup>

## Abstract

### Objectives and background:

Despite improvements in the medical and surgical management of infants with congenital heart disease (CHD), growth failure before surgery in many infants continues to be a significant concern. A nutritional pathway was developed, the aim of which was to provide a structured approach to nutritional care for infants with CHD awaiting surgery, reducing variation in practice and ultimately improve growth in infants with CHD before surgery.

### Methods:

The modified Delphi process was as follows: 1) development of nutritional pathway, 2) initial stakeholder meeting to finalise draft guidelines and develop questions 3) round 1 anonymous online survey, 4) round 2 online survey, 5) regional cardiac conference and pathway revision, 7) final expert meeting and pathway finalisation.

### Results:

Paediatric Dietitians from all 11 of the paediatric cardiology surgical centres in the United Kingdom contributed to the guideline development. 33% of participants had 9 or more years of experience working with infants with CHD. By the end of rounds 1 and 2, 76% and 96% of participants respectively were in agreement with the statements. Three statements where consensus were not achieved by the end of round 2 were discussed and agreed at the final expert group meeting.

### Conclusions:

Nutrition guidelines were developed for infants with CHD awaiting surgery, using a modified Delphi process, incorporating the best available evidence and expert opinion with regards to nutrition in this group. A pilot study will be completed considering the feasibility of applying the structured approach to nutrition care in day to day practice.

# Competence, Confidence and Courage: Increasing clinical skills in a Children's Hospice;

## Author

Elli Rushton, Wessex Children's Hospice Trust

## Abstract

### Objectives & Background

To plan, develop, and deliver a comprehensive practice development programme within a children's hospice to support the nursing care of clinically complex children and young people.

Children's palliative care is changing. Medical advances and improved technology, enable an increasing number of children with life limiting conditions to survive for much longer. They are supported by procedures such as long term ventilation, total parenteral nutrition, and peritoneal dialysis. Nurses in Children's Hospices are required to develop a much higher level of knowledge and skills to facilitate the support of these children, young people and their families.

### Methods

#### Development of the Practice Education Team

- Honorary Contracts PICU/HDU/Respiratory Unit
- Increase in PE hours from 48 to 104 pw
- Collaboration with regional hospitals PE Teams

#### Development of Competency Frameworks & Assessment of Practice

- Specialist Study Days : Long Term Ventilation, Intravenous Therapies, Peritoneal Dialysis.
- Skills Lab/Simulation
- Supervised Practice
- Pop up Training Sessions
- Clinical supervision , Focus based solutions

#### Joint Posts with Specialist Hospital

- Paediatric Palliative Care Consultant
- Adult Palliative Care Doctor
  - CNS Palliative Care
  - CNS Long Term Ventilation
  - Physiotherapy rotation
- Development of a Long Term Ventilation Unit
- Partnership working with Specialist Hospital : Respiratory Consultant,
- Specific LTV Competency Framework & Respiratory Workbook
- Increased opportunities to develop competence and confidence

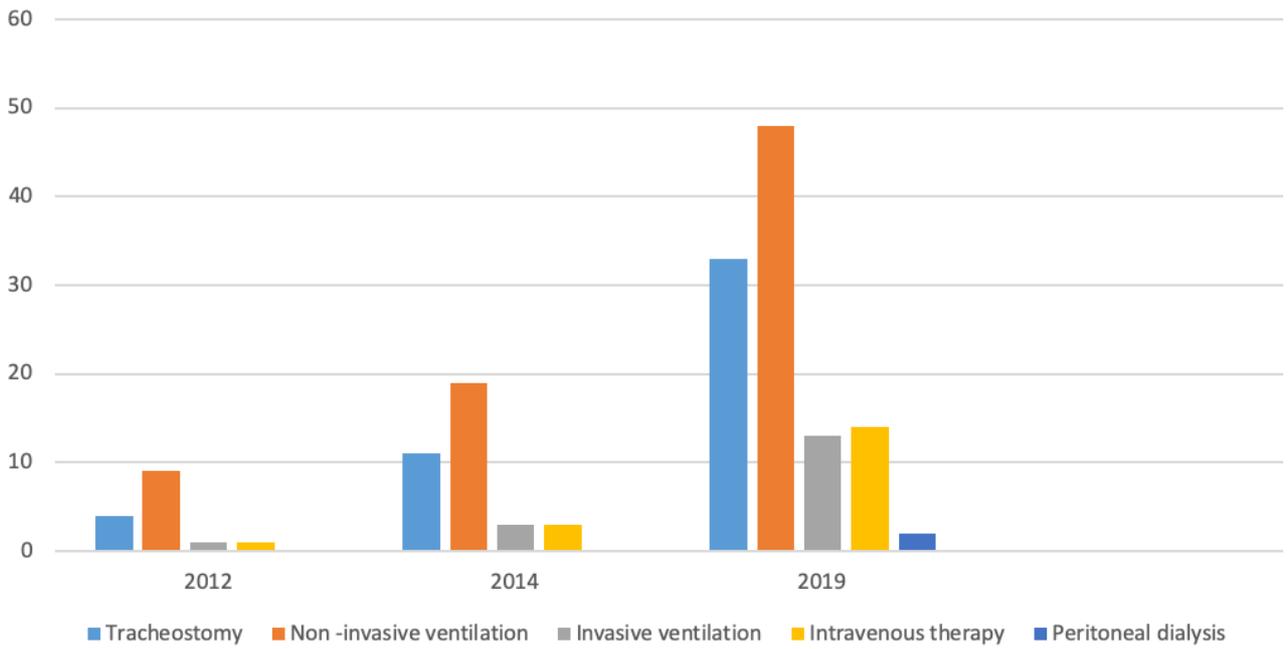
### Results

Staff competencies increased significantly during the seven year periods particularly in the areas of LTV, and IV administration. The consequence of this was an increased ability to support children and young people with very complex clinical needs.

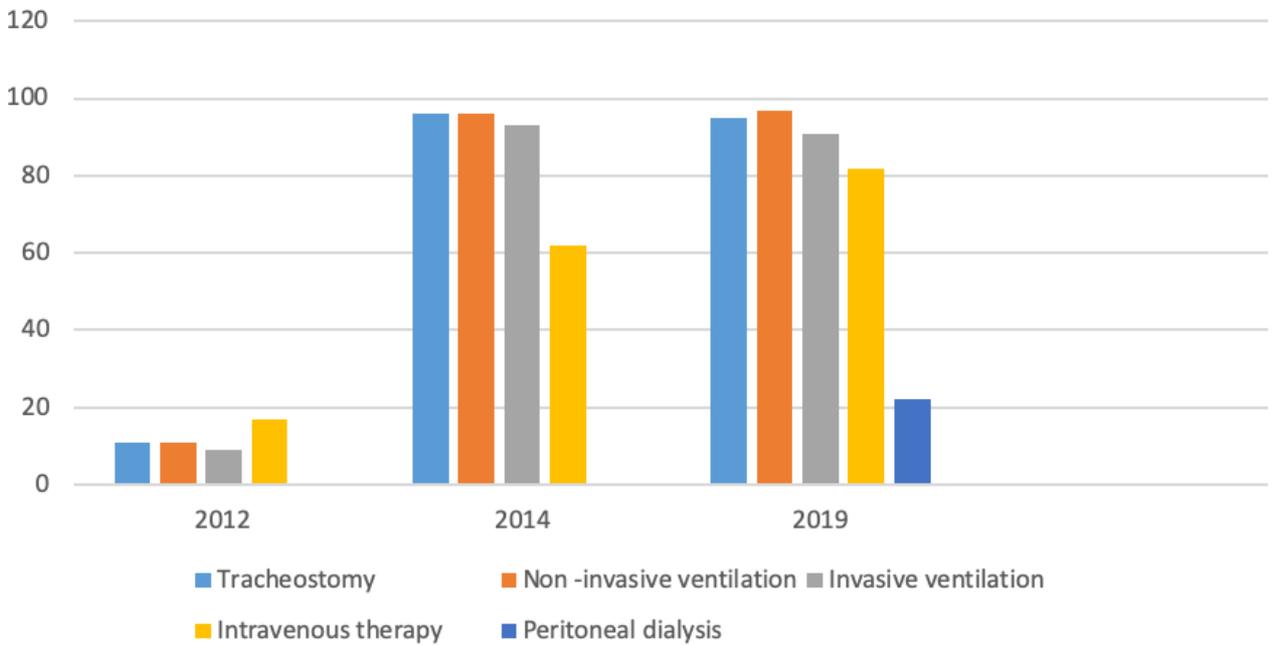
### Conclusion

Partnership working with a tertiary Hospital in combination with practice development and the opening of a Specialist Long Term Ventilation Unit resulted in a Nursing team of competent and confident practitioners with the courage develop to meet the needs of those in their care.

### Admissions of Children & Young People between 2012-2019



### Chart Title



# Utilising Appreciative Inquiry Approach to support development of culture of continuous improvement in child health

**Author** Kate Pryde, Southampton's Children's Hospital

**Other Authors and Affiliations** Suzanne Quinney - Appreciating People

## Abstract

### Background

Like much of the NHS, Southampton Children's Hospital is looking for solutions to combat high staff vacancies and poor morale.

There is increasing evidence that the use of the appreciative inquiry (AI) approach facilitates conditions which enable improvement to occur without it being a burden. AI is a versatile asset based approach which develops emotional intelligence and equips staff for culture change.

### Aim

To trial the use of AI training to help support development of culture of continuous improvement and improve staff morale and wellbeing.

### Methods

We partnered with "Appreciating People" to deliver training (funded by HEEW QI grant) to front line clinical and non-clinical staff.

We utilised a PDSA approach to the training, adjusting the programme significantly (& invitees) on feedback and our reflections on sessions.

### Results

We ran a total of training 7 sessions, ranging from 4 hours to 2 days. Training over 150 staff including doctors, nurses, AHP, managers and administrators.

Feedback was unanimously positive.

There has been a significant increase in number of Favourable Event Report Forms completed.

Staff sickness and turnover haven't changed significantly.

Our culture survey occurs annually and this will be in the autumn

### Conclusions & Spread

The training was extremely well received despite some initial reservations.

The "off shoots" have been numerous and included: Gratitude boards, shout out's too, ward leaders using tools on ward training days (with feedback that it was the best training day ever). Specialties using a SOAR rather than a SWAT.

Word has 'got out' – other areas in trust utilising AI training.

Health Education England Wessex have commissioned Appreciating People to deliver several AI courses

### Learning to Share

Quoting Albert Einstein " Not everything that matters is measurable and not everything that is measurable matters" – the impact of this piece of work is really challenging to measure.

Team training rules! Achieves much bigger impact.

Administrative staff really appreciated the training – a group so vital to the NHS but often undervalued & rarely given training opportunities

Positivity breeds positivity. "The words you speak become the house you live in" Hafiz.

Just do it in your organisation!

# Children and young people's experience of source and protective isolation while in hospital

## Author

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## Other Authors and Affiliations

Donna Austin, Advanced Nurse Practitioner, Paediatric Intensive Care Unit, University Hospital Southampton

Dr Jacqui Prieto, Clinical Academic Lecturer, University Hospitals Southampton, University of Southampton

Dr Helen Rushforth, Senior Lecturer, University of Southampton

## Abstract

Objectives and background:

Single room isolation is an essential part of transmission-based precautions for the purpose of infection prevention. Literature demonstrates that adults cared for in isolation precautions can experience loneliness, depression, feelings of stigma and confinement. The paediatric literature related to single room isolation is limited and dated, and what there is tends to focus on specific conditions, or the experience of parents of children in isolation, so little is known about how isolation is experienced by children themselves on general paediatric wards.

Aim:

This study explored the experiences of children and young people in single room isolation whilst in hospital.

Methods:

Social constructivism was the underpinning philosophy and study methodology, using a narrative inquiry method. Data were collected using retrospective interviews and video diaries. The study recruited children 6-17 years (n=8), parents (n=11) and staff (n=21), throughout paediatric wards in a large children's hospital in the UK. Data collection methods were adapted in accordance with challenges in recruitment and data collection was conducted between 2011 and 2015. Data were analysed using narrative analysis.

Results

The key themes derived from the data sets from children, parents and staff were: control, community and coping. Incidental findings from this study developed understanding concerning the methodological insights of researching with children in hospital in this age group. Although this study cannot give one structured approach to providing care for children in isolation, it encourages practitioners to consider the children in this study within the child's social construct, development, familiarity with hospital and individualise care according to their needs. There are significant differences between children and adult experiences of isolation as a consequence of their developmental level, need for social interaction, understanding of contagion and the relationship that they have with staff.

Conclusions:

The findings demonstrate that the experience of isolation for children is fundamentally different to the experience of isolation, and this necessitates that practitioners understand the experience of isolation

for families in order to provide patient-centred care. This study was limited in size, therefore may warrant from a larger scale study.

# '3 is the new 4' - A quality improvement project for 2-5 year old with wheeze and earlier discharge. Why wait for 4hour inhalers?

**Author** Patrick Aldridge, Frimley Park Hospital

**Other Authors and Affiliations** Naren Siva - Frimley Park Hospital  
Leo Poulouse - Frimley Park Hospital

## Abstract

Objectives & background

Standard practice across many UK hospitals in children with wheeze or asthma is a salbutamol requirement every 4hrs before discharge. No evidence exists in the literature for 2, 3 or 4hrly inhalers and discharge. A recent retrospective study at Royal Children's Hospital, Melbourne showed asthmatic children could be safely discharged 1hr post treatment if they were symptom free. The current British Thoracic Society guideline (SIGN 158, 2019) advises that children can be sent home at 3-4 hourly inhalers.

The objectives were:

1. Implement discharge at 3hr inhalers
2. Review if there was an increase in readmissions <72hrs.

## Methods

Children aged 2-5 years old admitted to Paediatric Assessment Unit (PAU) or ward (F1) with wheeze or discharge diagnosis asthma/viral induced wheeze. Data was collected 01/12/18 to 31/07/19. Notes and drug charts assessed for fitness for discharge at 3 or 4hrly inhalers. Admission to the ward, direct discharge from PAU & readmission <72hrs recorded. Children discharged from the Emergency Department (ED) were excluded. Data entered into a run chart with median calculated Dec 2018 – March 2019 (pre formal intervention).

## Results

Of 171 children – 10 discounted (unclear documentation), 78 (48%) fit for discharge at 3hr inhalers vs 83 (52%) at 4hr inhalers. Two reattenders <72hrs in each group (3 or 4hr inhaler). No definitive shift in practice demonstrated (require 6 data points above/below median) but it is clear a change in practice has occurred. Change likely due to open discussion of topic locally since January 2018 and confounding the median.

## Conclusions

Discharge at 3hrly inhalers in 2-5 year old children with wheeze appears safe and is becoming standard practice at our hospital. Merely talking about change is enough to influence a change in practice with early adoption by staff. Other centres across the region should consider adoption of this practice.

# 'A spoonful of Ondansetron helps the fluids stay down': An early intervention quality improvement project for children presenting to an emergency department with vomiting.

## Author

Paolo Hollis, Frimley Park Hospital

## Other Authors and Affiliations

Dr Patrick Aldridge, Frimley Park Hospital

## Abstract

Objectives and background:

Evidence suggests that children with acute infectious gastroenteritis (AGE) have a decreased length of Emergency department (ED) stay and reduced blood tests when given ondansetron. Anecdotal observation within our ED suggested many children were getting intravenous fluids, blood tests and admission with low use of ondansetron.

The objectives were:

1. Implement Ondansetron for children with suspected AGE.
2. Review number of admissions to Paediatric Assessment Unit (PAU), blood tests & reattenders within 72hrs.

Methods:

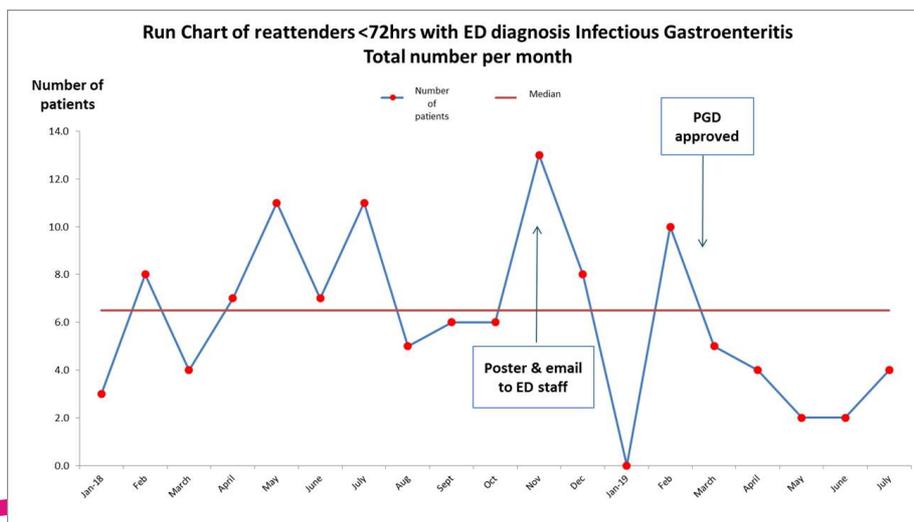
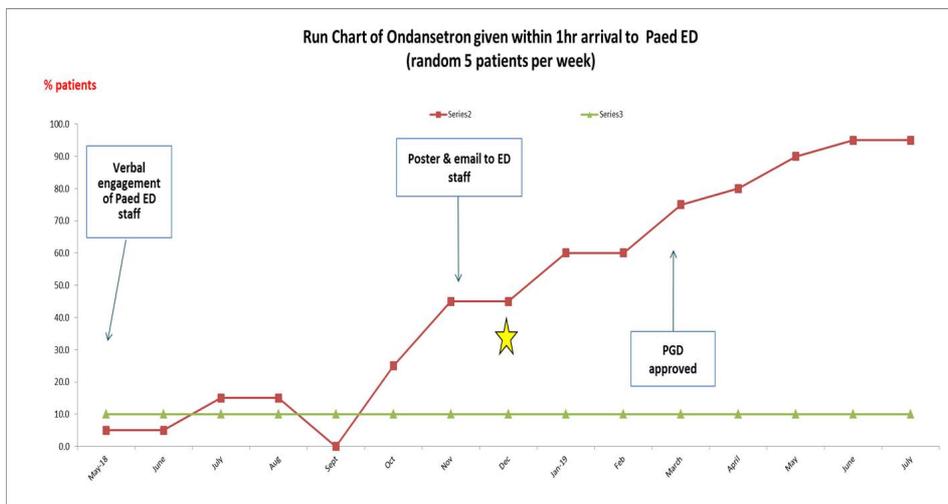
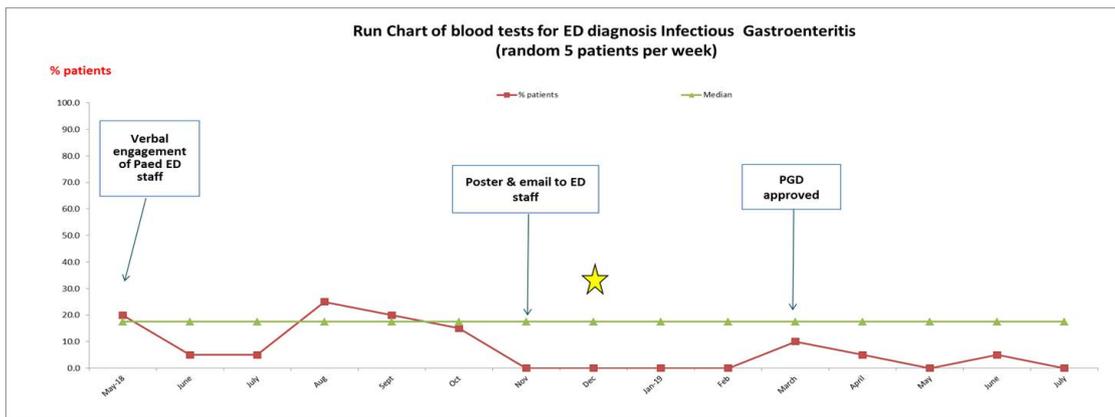
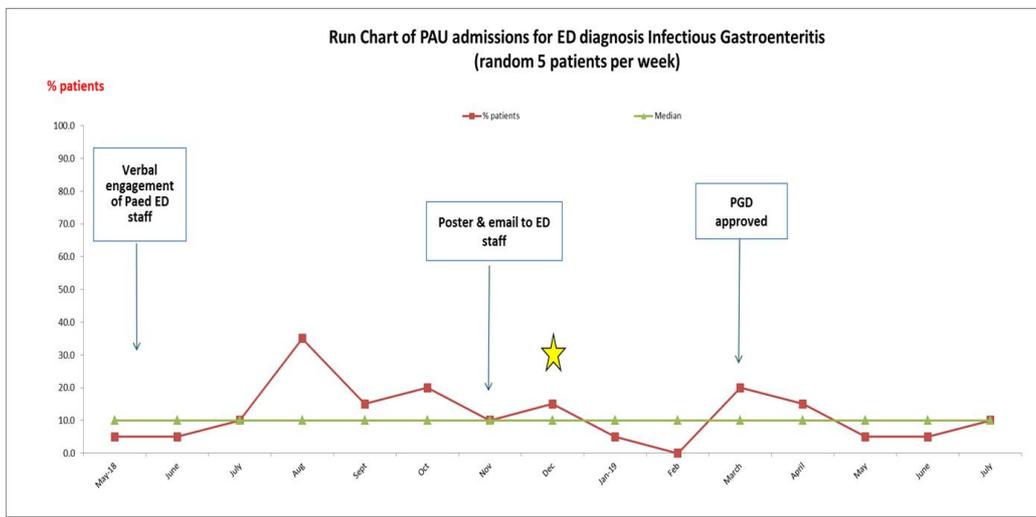
Children attending ED aged 1-16yrs old with discharge diagnosis AGE were included 01/05/18 to 31/07/19. 5 patients per week were chosen randomly for inclusion. Notes & drug charts were reviewed to collect the information noted above. Reattenders <72hrs were sourced electronically and screened for inclusion/exclusion. Data was entered into a run chart with median calculated May 2018 – Oct 2018 (pre formal intervention - November 2018). ED length of stay could not be accurately measured (technical issues). Interventions were noted on the run chart including education, posters and patient group directive (PGD).

Results:

Ondansetron use within 1hr of ED arrival for AGE increased from median 10% to >90% over the study period showing a statistically significant shift in practice (SIP). Blood tests decreased below the median (18%) from November 2018 showing a SIP. Admissions to PAU did not fall consistently below the median (10%) but is confounded by an increased departmental push to fluid challenge children in PAU due to time pressure targets. Reattenders <72hrs shows a trend below the median (n= 7 patients per month) since introduction of a PGD but is not yet statistically significant.

Conclusions:

Early administration of ondansetron decreased blood tests in children with AGE but has not significantly altered admissions due to confounding factors. Reattenders within 72hrs may have reduced. Other centres should consider adoption of this practice.



# Mind the paediatric rota gap: What can doctors with experience of the UK paediatric training programme inform us about their career decisions given increases in paediatric rota gaps in the UK NHS?

## Author

Emily Whitehouse, Royal Preston Hospital

## Abstract

### Objectives and background

Paediatrics is an example of a shortage specialty with increasing rota gaps in junior doctor rotas (RCPCH 2017). Policy to address this focuses on increasing recruitment to the specialty. Previous research about career decision-making in doctors is often quantitative, focuses on those choosing rather than leaving a specialty, and is based on early career-grade decisions. This study aimed to identify and explore which factors contribute to paediatric trainees leaving the UK training programme, and if any factors could be changed to improve retention.

### Methods

This exploratory study examined factors relevant to retention by conducting in-depth qualitative interviews with 14 doctors who had recently left the UK paediatric training programme. Participants were recruited via regional and national social media forums for doctors or were recommended to the author. In order to engage a broad range of opinion, doctors from five training regions were invited who had left UK paediatric training within the last five years in four groups: those who had left i) for another specialty, ii) to train in paediatrics abroad, iii) to continue in UK paediatrics in a non-training position and iv) for a career outside medicine. Topics discussed included why trainees were attracted to paediatrics, whether training was as expected, factors which contributed to their decision to leave and factors which could have potentially kept them within paediatric training. Data was analysed using thematic analysis.

### Results

A broad range of push and pull factors were described regarding family and lifestyle, aspects of training, health concerns, and other specific considerations. Experiences common to the group were increasing stress, lack of control over training and perceived lack of support.

### Conclusions

The new findings of mental health concerns and fear of making mistakes in the context of systemic pressures is worrying for workforce sustainability, particularly given participants' views that these are not being recognised by their professional regulator or government. However participants were able to identify aspects of training such as increased flexibility and continuity within training, career guidance, support for incidents, and psychological support which, if improved, could counterbalance a preponderance of push factors to leave paediatrics.

# A review of interventions supporting parent's psychological well-being after a child's intensive care unit discharge

## Author

Zoe Bedford, WSHT

## Other Authors and Affiliations

Suzanne Bench.  
Article is published in Nursing in Critical care,

## Abstract

**Background:** Having a child admitted to a paediatric intensive care unit (PICU) is a highly stressful experience, and post-traumatic stress among parents is well documented. How best to support parents is currently unclear.

**Aim:** To review research on interventions to support the psychological well-being of parents after their child's discharge from paediatric intensive care.

**Methods:** Searches were conducted using Medline, PsycINFO, PubMed, CINAHL and the Cochrane library in January 2017. Study selection was carried out using pre-specified criteria. Following appraisal of methodological quality and risk of bias, data were extracted and analysed using a narrative synthesis.

**Results:** Six quantitative studies met the inclusion criteria. Intervention types included follow-up appointments, telephone calls, educational information and post-admission interviews. Insufficient evidence was found to fully support any intervention in isolation, but findings support a clear trend that some form of follow up is beneficial.

**Conclusions:** Testing costly interventions is challenging and takes time. In the meantime, a low-cost intervention (such as an information leaflet) to raise awareness of potential problems in staff and to provide a support resource for parents is recommended.

**Relevance to clinical practice:** Parents and carers of children admitted to PICU can develop post-traumatic stress symptoms after their child's discharge from PICU. This article addresses how best to support these parents to improve their psychological well-being.

# Use of lumacaftor/ivacaftor as rescue therapy and stabilisation treatment for severe lung disease in children with cystic fibrosis

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## Abstract

**Introduction:** Lumacaftor/ivacaftor is a precision medicine for cystic fibrosis (CF) patients aged  $\geq 6$  years and homozygous for the Ph508del mutation. Whilst there is data for some efficacy in CF adults with severe lung disease (FEV1 <40%), there is very little information in children. We report the UK use of lumacaftor/ivacaftor in our region, made available on a compassionate basis, as rescue therapy in children with severe deterioration in respiratory status resistant to conventional treatment (2) and worsening chronic disease despite regular intravenous antibiotics (3), between Feb 2017-Dec 2018.

**Results:** All patients were female. The mean age when starting treatment was 11.7 years (8.8, 9, 12.1, 12.5 and 15.9 years). 2 children had >20% falls in lung function persisting despite > 1 month of intensive in-patient antibiotic treatment and in both cases to FEV1 <40%. Symptomatic improvements were readily appreciated in both within days. Mean absolute increases in FEV1 were 32.6% and 16% respectively within 2 weeks. Improvements have been sustained after continued treatment. 3 children with severe chronic lung disease, poorly controlled symptoms and FEV1 <40% despite regular 3 monthly IV antibiotics were also treated. Mean absolute changes in FEV1 were 20%, 29% and -8%. The child whose FEV1 decreased (aged 15.9 years) had chronic infection with B. Cepacia. She experienced increased respiratory secretions and low mood necessitating an increased dose of anti-depressants. Medication was stopped, reintroduced post IVs and was subsequently well tolerated. All 3 have continued treatment and are appreciably more stable between IV courses.

**Conclusions:** These data support the use of lumacaftor/ivacaftor to treat children with severe CF related lung disease. The drug has been well tolerated and in most cases could be successfully introduced at times of acute-on-chronic illness.

# The Trainee Nursing Associate Programme for Children's Nurses

## Author

Jacqueline Mills, University Hospital Southampton

## Abstract

### Introduction

Southampton Children's Hospital (SCH) recognises the value of the Nursing Associate role, providing development for the non-registered workforce, the quality of care this team can provide and the essential part the role plays in work force planning for the future. The Trainee Nursing Associate programme is generic across the four fields of nursing. Our aim at SCH is to ensure that although the trainees are exposed to a wide scope of practice to meet the NMC programme requirements, the course is specific enough to allow those who work within the Children's Hospital to give quality care to our sick children on completion of training.

### Method

This is an apprenticeship, where trainees learn within their own workplace and on placement within both acute and community settings. These placements have been developed to ensure the trainee cares for the Child within a variety of settings and examples are Children's High Dependency, CAMHS and residential mental health setting, and district and specialist nursing teams. As well as individual learning, the trainees have brought valuable new skills and care planning to their work areas sharing best practice. The academic learning is provided both by the university and specialist practitioners, an example of this being the Deteriorating Patient Module and Medicines Management delivered by UHS. This has enabled the Children's Hospital Education Team to provide bespoke lectures, child specific simulation with OSCEs for medicine's management involving children and sessions such as safe transfer of the sick child.

### Results

The first 2 Nursing Associates are employed within the Children's Hospital with 8 qualifying in March 2020. The bespoke course has ensured that although they are qualified to work in any setting they are able to provide high quality care to children complimenting the Registered Nursing team.

### Conclusion

This is an evolving programme which is designed to meet the individual needs of the learner while supporting the investing employer, addressing the needs of the nursing workforce of the future.

# Audit and Survey on neonatal deliveries of Buckinghamshire Healthcare NHS trust (BHT): indication of paediatric team standby and effectiveness of SBAR handover

## Author

Federica She Wai Au, Oxford University Hospitals NHS Foundation Trust

## Other Authors and Affiliations

Dr. Cassim Akhoon, former Foundation Year 2 doctor, Buckinghamshire Healthcare NHS trust

Dr. Gopa Sarkar, Consultant Paediatrician, Buckinghamshire Healthcare NHS trust

## Abstract

Objectives and background:

Paediatricians were requested to attend a significant number of neonatal deliveries. A number of those attended were not according to the Trust's guideline either for the indication or the lack of information in handover. It could compromise the quality of care provided to neonatal patients. Conversely, we needed to ensure the appropriate presence of the neonatal team at high-risk deliveries. This audit aimed to determine compliance of the guideline by paediatric and obstetric colleagues.

Methods:

We carried out a prospective audit which involved the development of a form that paediatricians filled in for each delivery attended, over a three-week period from 4th to 29th June 2018. We then analysed the data and compared it with the Trust's guideline.

We also created a survey for paediatricians, midwives and obstetricians to complete, which assessed knowledge and understanding of the Trust's guideline on the need for paediatrician's presence at deliveries.

Results:

The paediatric team attended 31% of the deliveries when their presence was not indicated. Often, the midwives were calling on behalf of their colleagues and they provided minimal information about the situation over the phone.

Our survey presented 20 scenarios of baby deliveries, of which 10 required paediatric team's attendance and 10 did not require their presence, these were based on the Trust's guideline. The survey identified the lack of awareness of the Trust's guideline.

We created recommendations for an updated guideline regarding indications for paediatric presence at deliveries and emphasized on difficult scenarios that warranted the need for senior presence at deliveries.

We also created recommendations for hand over based on our findings:

Minimum information handed over should include

- Urgency (timing)
- Location
- Gestation
- Singleton/ Multiple births
- Specific reason why paediatrician is required

Conclusions:

Since there is no consensus guideline regarding the indications for paediatric presence at deliveries,

we hope to share our findings with other hospital teams.

In the future, it would be useful if we can come up with universal consensus regarding the indications for paediatric presence at deliveries regionally or nationally to improve the quality of neonatal care.

**Here is a comparison of our Trust's guideline, that of the Oxford University Hospitals and the American Heart Association Neonatal Resuscitation Program**

<b>Buckinghamshire Healthcare NHS Trust</b>	<b>Oxford University Hospitals</b>	<b>American Heart Association Neonatal Resuscitation Program: perinatal risk factors increasing the likelihood of neonatal resuscitation</b>
Any vaginal birth (spontaneous vaginal delivery/forceps/ventouse) if there is assumed fetal distress or compromise	Abnormal CTG showing evidence of significant fetal compromise eg: bradycardia, sinusoidal trace, deep decelerations (a CTG for which active neonatal resuscitation is anticipated)	Category II or III fetal heart rate pattern
Category 1 caesarean section (CS)	Category 1 caesarean section	Emergency caesarean delivery
Category 2 CS with suspected fetal compromise		
CS under general anaesthetic	CS under general anaesthetic	Maternal general anaesthesia
Maternal bleeding, severe pre-eclampsia, eclampsia, even if no fetal distress is assumed/suspected	Life threatening emergency	Intrapartum bleeding, placental abruption, pre-eclampsia, eclampsia, fetal anaemia
All multiple births	Paediatric attendance NOT routinely required for multiple birth	Multiple gestation
Breech presentation regardless of mode of birth		Breech or other abnormal presentation
Premature (less than 36 completed weeks of gestation)	Premature 35 weeks and below	Gestational age less than 36 0/7 weeks
Significant meconium staining in the liquor	Thick meconium stained liquor and the need for active resuscitation anticipated	Meconium-stained amniotic fluid
Known significant congenital abnormality	Known significant congenital anomaly	Significant fetal malformations or anomalies
Suspected fetal infection		Chorioamnionitis
	Shoulder dystocia	Shoulder dystocia
	Cord prolapse	Prolapsed umbilical cord
	Rotational instrumental delivery	
	Paediatric attendance NOT routinely required: <ul style="list-style-type: none"> <li>• Elective Caesarean section</li> <li>• Forceps/ ventouse extraction</li> <li>• Thin meconium stained liquor</li> <li>• Mildly abnormal CTG</li> </ul>	Other antepartum risk factors: <ul style="list-style-type: none"> <li>• Gestational age greater than or equal to 41 0/7 weeks</li> <li>• Maternal hypertension</li> <li>• Polyhydramnios</li> <li>• Oligohydramnios</li> <li>• Fetal hydrops</li> <li>• Fetal macrosomia</li> <li>• Intrauterine growth restriction</li> <li>• No prenatal care</li> </ul>
		Other intrapartum risk factors: <ul style="list-style-type: none"> <li>• Forceps or vacuum-assisted delivery</li> <li>• Maternal magnesium therapy</li> <li>• Narcotics administered to mother within 4 hours of delivery</li> </ul>

# Quality improvement project in babies admitted to Royal Berkshire Hospital Buscot neonatal unit with pulmonary air leak

## Author

Federica She Wai Au, Oxford University Hospitals NHS Foundation Trust

## Other Authors and Affiliations

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## Abstract

Objectives and background:

We observed that there was an apparent increase in the number of babies with pneumothorax or pneumomediastinum (pulmonary air leak) that required admission to Buscot neonatal unit, Royal Berkshire Hospital.

We would like to know the number of babies with pulmonary air leak that required admission in recent years. We would also like to look into factors that may contribute to the increase in the number of babies with pulmonary air leak. And by identifying these factors, potentially we may be able to develop measures to prevent pulmonary air leak in neonates which improves patient care and decreases admissions.

Methods:

All babies admitted to Buscot neonatal unit with pulmonary air leak between January 2017 and May 2019 were identified for inclusion in this project.

Data was obtained from BadgerNet (UK Neonatal Patient Data Management System), Electronic Patient Record and Picture Archiving and Communication System (PACS).

Results:

There was an increase in the number of term babies admitted to Buscot neonatal unit with pulmonary air leak more than the first 4 hours of life between January and May 2019. We were providing more breathing support to term babies in this period. This might be because there were more term babies with meconium stained liquor, meconium aspiration syndrome, transient tachypnoea of the newborn (TTN) and congenital pneumonia during this period.

The majority of babies with pulmonary air leak did not have positive transillumination on examination. Preterm babies with pulmonary air leak were more likely to require emergency needle thoracocentesis or chest drain insertion while 45% of pulmonary air leak cases in term babies resolved without intervention.

Conclusions:

This quality improvement project revealed a higher incidence of pulmonary air leak in a slightly different group of babies, who traditionally are thought to be at low risk of having air leak.

It also revealed an increase in the number of term babies with meconium stained liquor, meconium aspiration syndrome, TTN and congenital pneumonia between January and May 2019.

This could reflect wider regional problems regarding maternal health and management of post-term pregnancies.

# Lumbar puncture technique: current practice and opinion in the paediatric emergency department

## Author

Jessica Webster, University of Oxford

## Abstract

### Objectives and background

Lumbar punctures (LPs) are a key tool in the diagnosis of meningitis. Debate exists over the technique most likely to be successful: using a lying or sitting position, and timing of stylet removal (once in the presumed cerebrospinal fluid space (late stylet removal) or subcutaneously (early stylet removal)). The ongoing NeoCLEAR trial aims to address this question.

This project aimed to ascertain current opinion on which technique practitioners felt was more effective, but also which they felt was least painful and easiest to hold the child for. These factors are likely to colour whether a change in practice is implemented should NeoCLEAR find a significant result. The project also surveyed other aspects of LP technique such as the use of analgesia or ultrasound guidance.

### Methods

A survey addressing current practice and opinion was administered to doctors and nurses working in the Paediatric Emergency Department of the John Radcliffe Hospital, Oxford over a four-week period.

### Results

77% (20/26) respondents stated a preference for the lying position, but only 21% (6/28) felt this was least painful and only 32% (9/28) felt it was most likely to be successful. 21% (6/28) of respondents had experience of early stylet removal compared to 71% (10/14) for late. When asked which was more likely to be successful, 90% (26/29) responded 'don't know'. In all types of analgesia surveyed, no more than 3 respondents recommended its use in children aged <1 year.

### Conclusion

With the exception of a personal preference for the lying position, respondents were uncertain about the best position and technique for LP suggesting that practitioners may be open to change in practice. In addition, the survey revealed that only a minority of practitioners recommend analgesia for children <1 year. The reasons for this require further study.

# Are we effectively identifying childhood obesity on our paediatric wards?: A quality improvement project using PDSA cycles to improve documentation of BMI and obesity at Queen Alexandra Hospital.

## Author

Sarah Long, University Hospital of Wales

## Other Authors and Affiliations

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## Abstract

Objectives and background:

Childhood obesity is a major epidemic facing our population. It is also preventable. National guidelines state that clinicians have a duty to lead discussions about a child's weight. This starts with the identification of a child who is overweight or obese using Body Mass Index (BMI). Current practice for inpatients involves documenting height and weight. BMI is not routinely documented. Consequently, children with concerning BMI's are missed. This quality improvement project (QIP) aimed to review and improve the recording of overweight or obese inpatients of the paediatric department at Queen Alexandra Hospital.

Methods:

This QIP was designed with a Plan Do Study Act (PDSA) cycle framework involving two interventions for the nursing staff on paediatric wards. The first intervention was a poster and email notification. The second intervention was an additional email. Retrospective data collection occurred at baseline and after each intervention. Data for the following parameters was recorded: height, weight and BMI. The primary outcome measure was the number of children that were correctly identified and documented as being overweight or obese. The secondary outcome measure was the percentage of patients with both height and weight measurements.

Results:

Baseline analysis revealed no identification and documentation of overweight or obese patients. Following the first cycle, 3(25%) obese patients were identified and documented as obese. None of the overweight patients were identified and documented. Following the second cycle, none of the obese or overweight patients were correctly identified and documented. Across the department, the recording of height and weight measurements did not improve but there was considerable variation across wards.

Conclusions:

In conclusion, a poster and email intervention would not be a suitable method to increase BMI recording in the inpatient setting. Further interventions are needed to improve identification of obese and overweight children with a lasting effect.

# Management of tonsillitis and otitis media at Southampton Children's Hospital: A service evaluation

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## Abstract

### Introduction

Antimicrobial resistance is an important global issue, with a primary driver being inappropriate prescription of antibiotics. Upper respiratory infections in children such as tonsillitis and otitis media are usually caused by viruses and self-limiting, however antibiotics are often prescribed. We aimed to assess the current practice of investigation and management of tonsillitis and otitis media in children at Southampton Children's hospital.

### Methods

We performed a retrospective review of every case with a primary diagnosis on discharge from the paediatric wards or emergency department of tonsillitis or otitis media for the whole calendar year of 2018. We collected data on patient demographics, swabs for culture and sensitivity and antibiotic prescribing. We also collected surrogate data on perceived disease severity (length of stay, use of intravenous antibiotics or taking of blood culture).

### Results

A total of 735 patient episodes had a discharge diagnosis of tonsillitis or otitis media, including 313 from the paediatric wards, and 422 from the emergency department. 262 (83.7%) patients were prescribed antibiotics from the wards, and 270 (64%) from the emergency department. Of patients meeting our low risk criteria, 64/92 (69.6%) were prescribed antibiotics from the ward, and 111/172 (64.5%) were prescribed antibiotics from ED. There was a total of 3573 days of antibiotics prescribed for these diagnoses during 2018.

### Conclusion

High levels of antibiotic prescribing for tonsillitis and otitis media were observed during 2018, including for groups least likely to benefit from treatment or suffer complications. This remains an important area to address with antimicrobial stewardship interventions across the children's hospital.

# Qualitative Analysis of Specific Training Needs in Paediatric Nutritional Assessment in Children at Nutritional Risk (Under and Overweight); Process to Developing A Care Pathway

## Author

Philippa Thomas, Department of Child Health, Southampton Children's Hospital, University Hospital Southampton NHS Foundation Trust, Southampton & Wessex School of Quality Improvement, Health Education England (Wessex), Winchester & NIHR Biomedical Research Centre Southampton, University Hospital Southampton NHS Foundation Trust and University of Southampton

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7. Mark Beattie (Department of Paediatric Gastroenterology, Southampton Children's Hospital, University Hospital Southampton NHS Foundation Trust & NIHR Biomedical Research Centre Southampton, University Hospital Southampton NHS Foundation Trust and University of Southampton)

## Abstract

Objectives and background:

Current paediatric nutritional screening tools are unsuitable for routine use in clinical practice, with none designed to identify those who are overweight/obese. To develop effective screening and care pathways to identify, assess and manage acutely unwell children with nutritional deficits (including overweight), we need to better understand attitudes, behaviours, barriers and learning needs of staff.

Methods:

Semi-structured interviews of nurses, dietitians and doctors involved in paediatric clinical assessment were conducted in a children's hospital. Qualitative analysis, including framework methodology and thematic analysis, was used to identify attitudes, behaviours, barriers and facilitators to nutritional assessment and management.

#### Results:

Qualitative analysis revealed a common thought process for initially assessing a child's nutritional state if identified to have an abnormal body mass index. It demonstrated that the process and level of intervention was influenced by two key factors; a) the perceived impact of the presenting complaint on the nutritional status, including the potential negative implications on mental health, and b) the potential impact on communication and relationships built with patients and their families. There was general agreement that children who are underweight are assessed differently to those who are overweight, due to a greater concern of an underlying organic pathology for those who are underweight. Barriers identified included the severity of the acute presentation, time limits for thorough assessment and meaningful conversations, together with lack of confidence and knowledge on management, from giving simple dietary advice through to referral pathways and additional resources available for children and families.

#### Conclusions:

Assessment for nutritional risk, during an acute admission is influenced by multiple factors. Understanding staff members perceptions, current practices and training needs will enable the development of regional care pathways, incorporating improved knowledge, a focus on nutritional assessment and a clear nutrition management pathway.

# Experiences of Living with Cystic Fibrosis: improving our understanding of the impact on siblings

## Author

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## Abstract

### Background

Healthy siblings of individuals with cystic fibrosis (CF) face unique challenges. A better understanding of these might lead to more effective strategies for supporting these young people.

### Method

We held a focus group attended by 9 siblings (3 boys, 6 girls) representing 5 of 23 CF families who were invited to participate.

The group met for 2 hours of semi-structured discussion led by the paediatric CF social worker and supported by a paediatric registrar and quality improvement fellow.

### Results

Themes surrounding knowledge of CF that emerged included:

- Variable knowledge about CF, including life expectancy, and difficulties in knowing where to get accurate information.
- Concerns about inaccurate teaching about CF in school curricula.
- Variable levels of confidence in talking about CF with friends.
- Concern about the impact of not being able to socialise as a community due to cross-infection risks.

Themes about family experiences included:

- Feeling treated equally by their parents.
- A sense of pride as a result of their CF related experiences and acceptance about the levels of physical and emotional support they provide to their CF sibling(s).
- CF having a positive impact upon their relationships within their immediate family.
- Varying level of impact of siblings' hospital stays on who cares for them, where they sleep and how this varies in the school holiday and subsequently impacts on family life.

The siblings explored ideas about how they could be better supported:

- Social events for siblings, including fundraising and awareness raising
- Access to educational material created by CF professionals
- Peer resources/ support through social media

### Conclusions

Siblings of young people with CF shared generally positive views but also acknowledged the differences brought to their lives by CF. Concerns, included how CF is taught in the National curriculum and their access to accurate information will be fed back to the CF professional network and CF Trust to inform future practice.

# Appreciative Inquiry into FERFs

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## Abstract

### Objectives and background

Favourable Event Report Forms (FERFs) are used at University Hospital Southampton (UHS) to allow staff to report events where things went well (in comparison to adverse events). Recently a FERF team was established within the Children's Hospital to try and extend the impact and learning from FERFs using Appreciative Inquiry (AI). This is an approach using a process to engage people in focusing on strengths and positive experiences in order to build on these in a collaborative and creative way to create system change.

### Methods

Each month a FERF of the month is awarded. In order to take on the AI approach, the nominator and receiver for the FERF of the month were engaged in an appreciative conversation with a member of the FERF team. This followed the Definition, Discovery, Dream, Design and Destiny structure to draw out more details about the event and why it was so great and see if any further learning could be extracted for wider dissemination.

### Results

The FERF that was used involved a PICC line nurse who was on a bank shift, helping a doctor achieve IV access in a very tricky patient (twice!). The AI process allowed further depth to be gained in understanding the impact on staff of being valued for ones skills and being able to teach them to others as well as benefiting the patient. It also led to the idea that a difficult IV access (DIVA) pathway could be incredibly useful to guide staff on where to get help in patients who have challenging IV access. This pathway is now in development.

### Conclusion

The AI conversation around the FERF led to a much greater depth of understanding of the key positive issues and strengths of the event. Additionally, it provided a suggestion of an improvement pathway that will be developed that could have a positive impact on any child with DIVA. The wider impact of this positive event is far greater than that achieved purely by the FERF alone. Other departments could use this approach in the same way to further investigate FERFs.

# Are the “BIDS” study ‘Early Discharge’ criteria in Bronchiolitis safe for use in a Level 2 Paediatric Critical Care population?

## Author

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Sarah Mills - Medical Student Brighton & Sussex Medical School

## Abstract

Introduction and aims:

Bronchiolitis is the most common cause of hospital admissions in children under the age of 2 years old. Children are admitted to our Level 2 Paediatric Critical Care Unit (L2 PCCU) when they require ventilatory support. Our L2 PCCU implements an evidence-based “early” discharge criteria which sees children recovering from bronchiolitis discharged when they have awake oxygen saturations of  $\geq 90\%$  in air or asleep saturations  $\geq 88\%$  with minimal signs of respiratory distress and are managing  $>50\%$  of their normal feeds. This study aimed to compare outcomes to the “BIDS” study, to calculate LOS for this population group and identify factors that may contribute to increased length of stay (LOS) in L2 PCCU.

Methods:

Data was collected on children under the age of 2 admitted to our HDU with a diagnosis of bronchiolitis from 1st October-31st March for 3 years (2014-2017). 277 patients met the inclusion criteria. Data on patient’s LOS, age on admission, virology, weight, comorbidities, prematurity and any ventilatory support they received was collected from their notes and analysed.

Results:

Our study shows that the median LOS of children receiving ventilatory support in our HDU is 3 days. We also found that lower patient weight, age of  $<3$  months on admission, the presence of comorbidities and also the mode of ventilatory support that patients receive is significantly associated with a longer LOS. Patients who received CPAP or BiPAP were shown to stay in hospital twice as long as patients treated using HHFNC. Readmission rates were lower than in the “BIDS” study.

Conclusions:

Compared to the current literature our findings suggest that the current care pathway and “early” discharge criteria implemented in our L2 PCCU is resulting in a shorter LOS for patients with no adverse effect on the clinical outcomes.

# Lumbar puncture technique: current practice and opinion in the paediatric emergency department

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**Other Authors and Affiliations** Andrew Marshall, Charles Roehr

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## Abstract

Objectives and background

Lumbar punctures (LPs) are an essential tool in the diagnosis of meningitis. Debate exists over the exact technique most likely to be successful: using a lying or sitting position; which form of analgesia; using ultrasound guidance; calculating needle-insertion depth formulae; and over the timing of stylet removal (once in the presumed cerebrospinal fluid space – late stylet removal) or subcutaneously (early stylet removal – before needle advancement into the CSF).

This project aimed to ascertain current opinion on which technique practitioners felt was more effective, and also which they felt was least painful and easiest to hold the child for.

Methods

A survey addressing current practice and opinion was administered to doctors and nurses working in the Paediatric Emergency Department of the John Radcliffe Hospital, Oxford over a four-week period.

Results

77% (20/26) respondents stated a preference for the lying position, but only 21% (6/28) felt this was least painful and only 32% (9/28) felt it was most likely to be successful, with most others being unsure. 37% (11/30) had experience of sitting position. 21% (6/28) of respondents had experience of early stylet removal compared to 71% (10/14) for late. 90% (26/29) felt unsure about which was more likely to be successful. In all types of analgesia surveyed, most practitioners recommended their use in children over 1 y/o, but no more than 13% (3/24) of respondents recommended its use in children aged <1 year. Only 1 of 13 respondents had used pre-procedural ultrasound or a needle-insertion formula.

Conclusion

With the exception of a personal preference for the lying position, respondents were uncertain about the best position and technique for LP, suggesting that practitioners may be open to change in practice. In addition, the survey revealed that only a minority of practitioners recommend analgesia for children <1 year. The reasons for this require further study.

# Improving Paediatric Neuroscience Education for Nurses

**Author** Kate Bailey, University Hospital Southampton

**Other Authors and Affiliations** Mandy Frisby, UHS

## Abstract

Improving Paediatric Neuroscience Education for Nurses

Author:

1. Kate Bailey – University Hospital Southampton NHS Foundation Trust
2. Mandy Frisby – University Hospital Southampton NHS Foundation Trust

Background and Objective:

There was a lack of quality Paediatric Neuroscience teaching for Nurses and this was highlighted across the Southern region.

Foundation Level - To increase the knowledge and skills required by Nurses who are caring for children with a Neuroscience diagnosis in a variety of care settings (DGH's, community & tertiary settings).

Advanced Level - To develop and consolidate the Nursing knowledge, skills and competencies essential in the care of children with complex Neuroscience conditions. Practitioners will be caring for children in tertiary Neuroscience centres.

Methods:

This was a joint venture supported by the NHS South Paediatric Neuroscience Operational Delivery Network. Meetings began between Oxford, Bristol & Southampton in early 2018 and the course piloted in Bristol in October 2018.

Foundation Course was provided by Bristol, Oxford and Southampton and ran from April to June 2019 in Southampton.

Advanced course was provided across the region with each of the 3 centres providing teaching for different days and ran from June-July 2019.

Result

All sessions and both courses as a whole were extremely well evaluated

Quotes from the Advanced Course

- "It was AMAZING – I learnt so much".
- "It has been an incredible opportunity to meet other neuroscience nurses and have lots of useful discussions".
- "I can't wait to take my knowledge back to the ward and develop resources that my team can use"

Conclusion

The overall conclusion was that it was a great success.

Some slight adjustments for the next course were identified as a result of feedback or how the programme ran on the day.

The course will continue to run in 2020

The next Foundation Course in Southampton is running from 02nd March to 27th April 2020

# Strengthening of Junior Doctors through Shared Learning of Evidence Based Paediatrics

**Author** Kavinda Dayasiri, Oxford University Hospitals NHS Foundation Trust

**Other Authors and Affiliations** Sahana Rao, Oxford University Hospitals NHS Foundation Trust

## Abstract

Strengthening of Junior Doctors through Shared Learning of Evidence Based Paediatrics.

1Kavinda Dayasiri, 2Sahana Rao

1Paediatric Registrar 2Consultant in Acute Paediatrics, Oxford University Hospitals NHS Foundation Trust, Oxford, United Kingdom

## Objects and background

Journal Club is an education platform for junior doctors and it is highly useful for sharing knowledge and practice which in turn leads to improved care. However, this forum was infrequently held, poorly attended and given less priority and trainees had less interest according to 2018 online survey at department of paediatrics, John Radcliffe hospital, Oxford.

## Methods

Journal club was conducted over one year with incorporation of new organisational measures. Trainees invited to present in Journal Club and trainee had the ownership of the choice of article. Presenters encouraged with formal written feedbacks for their e-portfolio. Junior doctors were guided but had their own choice for selecting themes. Each session was advertised by regular weekly emails to improve attendance. Resource articles were distributed in advance to promote discussion and peer learning. Online survey was conducted to assess the impact of the changes after thirteen months following these interventions.

## Results

Fifty weekly Journal Clubs were held over 13 months. 55 junior and senior trainees presented with presentation rate being 93%. Thirty trainees and consultants responded to online survey. 87% were satisfied about session length. 100% believed topics were relevant. 96% believed the journal club was at least somewhat relevant to their clinical practice. 100% believed the alert emails were useful. 100% believed resource articles were at least somewhat helpful.

## Conclusion

Provision of written feedbacks, regular and friendly reminders for participation, and distribution of resources articles prior to Journal Club meeting were associated with improved participation and overall satisfaction among both presenters and attenders.

# Low cost system for Humidified High Flow Nasal Oxygen Therapy (HHFNO) using innovative blender (Ranchi Blender)

## Author

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## Other Authors and Affiliations

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Krishna Kumar MD,MRCPCH,Paediatric consultant, Rani Hospital ,Ranchi,India

## Abstract

Low cost system for Humidified High Flow Nasal Oxygen Therapy (HHFNO) using innovative blender (Ranchi Blender)

Rajesh Kumar MD,DM , Medical Director, Rani Hospital ,Ranchi,India

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Krishna Kumar MD,MRCPCH,Paediatric consultant, Rani Hospital ,Ranchi,India

Objectives and Background:

The advent of HHFNO(Heated humidified high flow nasal oxygen) has revolutionized the management of both newborn and children with respiratory illnesses. Resource poor countries generally tend to have a larger populace and hence a bigger group of ill children who need this support. The cost of a standard high flow system is approximately Rs 250000/- (Indian Rupees) (GBP 2717) which is unaffordable for developing economies. The challenge was to develop an effective low cost HHFNO device.

Methods:

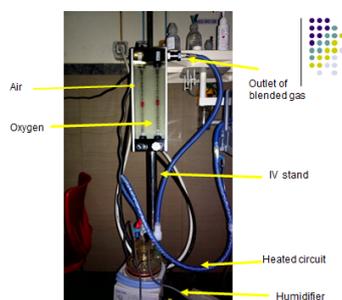
The setting was a 200 bedded exclusive Paediatric and Neonatal tertiary care hospital in eastern India. (Rani Hospital,Ranchi,India).The innovation was to develop an indigenous blender ("Ranchi Blender" Fig 1) that would bring the cost of the HHFNO system down. We took the blender from the Boyle's machine(Anaesthetic equipment) and used it to blend air and oxygen. Cost of the modified blender :Rs5500/- ,approximately GBP60). A commercially available humidifier was used for humidification of the blended gases. For calculation of FiO<sub>2</sub> being delivered ,the following formula was used :FiO<sub>2</sub>= {(Air flow x 0.21) + (Oxygenflow x 1.0)}/Total Flow.

Results:

This innovative device thus assembled(Blender from Boyle's machine+ stand to fix the blender +Commercial humidifier)reduced the overall cost to 1/5th ( assembled device :approximately Rs 50000= GBP544 vs commercial device GBP 2717). As a result of this innovation the hospital was able to assemble 40 HHFNO units, which is being used across NICU,PICU and Paediatric HDU environments.

Conclusions:

The adapted blender design ('Ranchi Blender') was born out of the necessity to provide healthcare solutions to the wider population at a reasonable cost . This innovation has now spread from our hospital to other hospitals across India, bringing down the cost of healthcare.



# Increasing efficiency in the out-patient clinic: Parent completed pre-clinic questionnaires

**Author** Catherine Tuffrey, Solent NHS Trust

**Other Authors and Affiliations** Dr Kathryn Padoa, Solent NHS Trust

## Abstract

Increasing efficiency in the out-patient clinic: Parent completed pre-clinic questionnaires

Dr Catherine Tuffrey, Dr Kathryn Padoa  
Solent NHS Trust

### Objectives and background:

Pressure on outpatient services in both hospitals and the community is increasing. Making clinic appointments quicker and more efficient is necessary, whilst maintaining quality and parent satisfaction. We adapted tools developed by Ireland and Horridge (1) in Sunderland for our outpatient clinics for both new (pre-clinic questionnaire) and complex follow-up (F-U checklist) patients.

### Methods:

Parents of all new patients referred into the service in one area of our community paediatric service were sent a pre-clinic questionnaire to capture past medical and developmental history, social and family history and the parents' concerns. They were asked to either send back before the clinic appointment in an SAE or to bring with them to clinic. Parents of children seen in our follow-up clinics in special schools with complex neurodisability were sent the F-U checklist, asking for current concerns, drugs and equipment, and asked to bring to clinic. Subjective views of clinicians and patients were obtained.

### Results:

Majority of parents completed and liked the questionnaires. Both types of questionnaire decreased clinic times for many patients (up to 15mins) and enabled more focussed discussion in the appointment. Parents commented that both parents had been able to contribute, even when only one was attending the clinic, gave them time to think in advance what they wanted to discuss and to look for information they could not immediately recall. Clinicians felt some parents wrote things down that they might not have felt able to say in clinic. Pre-clinic questionnaires for new patients can highlight when parents have literacy difficulties, with some asking relatives or other health professionals to complete.

### Conclusions:

Use of the questionnaires is now being rolled out across the service. Work is planned to integrate the pre-clinic questionnaire with information collection required by other services seeing the same children. Similar questionnaires would be applicable in other outpatient settings.

### References

1. Ireland P and Horridge KA. The Health, Functioning and Wellbeing Summary Traffic Light Communication Tool: a survey of families' views. 2016 <https://doi.org/10.1111/dmcn.13370>

# High frequency of paediatric facial nerve palsy due to Lyme disease in a geographically endemic region

## Author

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## Abstract

### Introduction:

Idiopathic facial nerve palsy (FNP) is an uncommon but important presentation in children, with Lyme disease known to be a common cause. The UK county of Hampshire is a high incidence area of Lyme disease. We conducted a retrospective review of the investigation and management of paediatric FNP at a large University hospital, including serologic testing and treatment of Lyme disease.

### Methods:

We conducted a retrospective chart review of children under 18 years old presenting between January 1st 2010 and December 31st 2017 with a diagnosis of FNP. Patients with clear non-Lyme aetiology at presentation were excluded. Data was collected on demographics, initial presentation, investigations (including Lyme serology), and management.

### Results:

A total of 93 children were identified, with an even proportion of male to female and median age 9.3 years (IQR 4.6-12 years). A history of rash was present in 5.4%, tick bite in 14% and recent travel to, or residence in the New Forest in 22.6%. Lyme serology was performed in 81.7% of patients, of which 29% were positive. Antibiotics were prescribed for 73.1% of patients, oral steroids for 44% and aciclovir for 17.2%.

### Conclusion:

Lyme disease is a significant cause of FNP in this endemic area of the UK, and there was a large degree of variability in its management. Local guidelines recommend Lyme disease testing on presentation, with empirical administration of antibiotics and eye care. Regional education is required to: firstly, highlight Lyme disease as a common cause of FNP in this region; secondly, direct clinicians to the recently revised PIER guidelines, to optimise patient care.

# Limp in Childhood: Are we missing significant diagnoses?

## Author

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Dr Kate Hooper - Oxford University Hospitals

## Abstract

### Background:

Limp is a common presentation and accounts for up to 5% of emergency department visits in children. It is difficult to clinically differentiate benign, self-limiting conditions like transient synovitis, from more serious conditions such as septic arthritis and osteomyelitis. It is therefore imperative to investigate and manage appropriately. Currently, there are no national guidelines for the investigation and management of limp in children in the UK.

### Objective:

The aim of this audit was to see how many children presenting with limp to the Children's Clinical Decision Unit were being correctly investigated and managed according to local guidelines. Additional aims were to see if any significant diagnoses were missed and to update the guidelines as appropriate.

### Methods:

A search was done for patients presenting with limp to our Children's Clinical Decision Unit, within the last 6 months. Their electronic medical records were then reviewed for details of their admission, investigations, diagnosis and any missed diagnoses. These were compared to local guidelines at Oxford University Hospitals Trust.

### Results:

The search found 106 patients. All patient should have had bloods and an x-ray, according to our guidelines. 33 of the 106 patients had the correct initial investigations. Those with 2 or more risk factors for septic arthritis should have had an ultrasound and this occurred in 10 of 15 patients. The most common diagnosis was transient synovitis (45 out of 106) and there were 2 cases of osteomyelitis and 1 case of septic arthritis. There were 4 missed diagnoses including 1 case of osteomyelitis.

### Conclusion:

Adherence to limp guidelines was poor and as a result significant pathology was missed. Recommendations included increased education of doctors about the limp management guidelines, creation of limp proforma and reinforcing mandatory telephone reviews after discharge. Further ongoing work includes reviewing and updating the limp guidelines.

# Home HHHFNC for preterm with severe CLD – ‘the way forward’

## Author

Krishna Shetye, Milton Keynes University Hospital.

## Other Authors and Affiliations

Lateefat Arije, Milton Keynes university Hospital

## Abstract

### Abstract Title

Home HHHFNC for preterm with severe CLD – ‘the way forward’

### Author

Krishna Shetye, Specialty doctor, Milton Keynes University Hospital,  
Lateefat Arije, ST4, Milton Keynes University Hospital

### Objectives and background:

We see an increasing number of extreme premature babies with CLD often established on heated humidified high flow nasal cannula(HHHFNC), but unable to wean off the support leading to prolonged stay in NNU and frequent readmissions after discharge due to respiratory illness. Using HHHFNC at home can help reduce the above morbidity and also ensure improved family bonding and reduction in healthcare costs.

Our aim was to determine if extreme preterms discharged on HHHFNC had a reduced number of admissions in the first two years of life.

### Methods:

A retrospective observational study of 7 extremely preterm with severe CLD and prolonged stay in NNU was done with electronic data collection of all babies discharged home on HHHFNC between 2013 and 2018. This novel project was first commenced on an ex-preterm born at 25.4 weeks of gestation and discharged home on low flow oxygen, but had frequent readmissions and hence was started on home HHHFNC at 17 months of age.

We analysed our data comparing our index case against the others and studied their readmission statistics in the first two years of life.

### Results:

Our index case had a total of 10 readmissions before starting HHHFNC and the longest duration of stay was 29 days. After intervention the same patient had only 2 more admissions and the maximum duration was of 6 days.

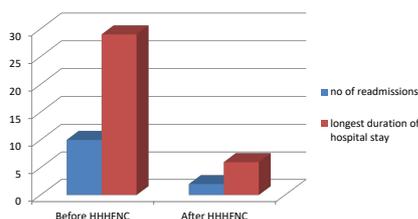
Amongst the other six, the maximum numbers of readmissions were two and the longest stay in that cohort was of 8 days.

### Conclusions:

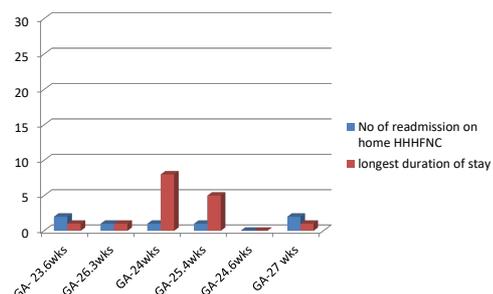
Babies with CLD discharged on home HHHFNC have fewer readmission rates in their first two years and shorter duration of hospital stay.

This has helped our setup in managing severe CLD cases in a cost effective way and helping families to spend more time in their early interventions and bonding.

Index case (GA - 25.4 weeks)



Patients discharged on home HHHFNC



# SCURVY – “still a threat in developed world ”

## Author

Krishna Shetye, Milton Keynes University Hospital

## Other Authors and Affiliations

Niketa Chawda, Consultant Paediatrics, Milton Keynes University Hospital.

## Abstract

Title

SCURVY – “still a threat in developed world ”

Authors:

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At the onset:

A 22 month afro-Caribbean toddler presents with three weeks of hip pain and limping. He gradually worsens and at presentation is non-ambulatory, with a left eye swelling. He had no history of fever but has spikes in hospital. He also has dental abscess. A differential diagnosis of reactive arthritis, infection and malignancy is made.

Management:

A battery of investigations (ultrasound of hip, abdomen, pelvis, Xrays and bloods), but all were futile. Referrals made to Orthopaedic, ophthalmology, dental and oncology team.

MRI orbit shows left sided dacrocystitis. MRI lower limb shows increased signal in distal femurs with surrounding tissue edema.

MDT thought of CRMO, infection and inflammation but ruled out malignancy because of symmetry in images.

Rheumatology opined CRMO unlikely and proposed Scurvy as a clinical diagnosis and started Vitamin C.

On follow up, the child has a complete recovery.

Learning points

1. Diet history is one of the key elements in paediatric history taking but was missed. In this case it was containing only milk, Weetabix and oats.
2. To think beyond infection when the evidence does not support it.
3. Child had symptoms of pseudo-paralysis and gum bleeding in past and the dacrocystitis seen was actually orbital haemorrhage.

Change in practice

1. Very important to go back to basics of history taking when a diagnosis is in a dilemma.
2. MDT approach and discussions with other teams always helps (two brains better than one).
3. It will be wise to take a brief diet history in every child and also give advice if you feel its lacking in vital nutrients.

Benefit for network



# Managing Acute Paediatric Pain; a joined up approach.

## Author

Dr Rachel King, Wessex Trainee

## Other Authors and Affiliations

Dr Clare Hollingsworth, Consultant paediatrician, Dorset County Hospital

## Abstract

### Objectives + Background:

Managing pain in children presenting to hospital should be a high priority for staff in the emergency department (ED) and on the children's ward. Many factors influence the quality of this provision. Following an audit of pain management in children with fractures the Royal College of Emergency Medicine (RCEM) identified potential improvements in the care of children presenting to District General Hospitals having sustained a fracture. As part of a department wide focus on pain management and closer links being forged between paediatrics and ED at DCHFT, this project aimed to assess staff confidence in paediatric pain management as well as patient experiences in ED and on the paediatric ward.

### Methods:

An electronic survey, alongside face-to-face dialogue, was used to ascertain staff confidence levels, prior training and potential ideas for innovation in paediatric pain management. Alongside this a paper survey was sent to 50 families whose children were either seen in ED or admitted to the ward with a fracture.

### Results:

The feedback was analysed in a focus group involving medical and play specialist staff. We plotted the course of the patient journey and constructed a driver diagram with primary drivers including medicines provision, training and ability and a reassessment process. This culminated in change ideas such as; access to a distraction box in ED, increased awareness of play specialist availability, formal training in both departments and the development of a pain pathway tool.

### Conclusion:

Amongst other systems changes and wider education advances an acute paediatric pain tool was developed. This tool has been designed to be used initially at triage and then throughout an admission. The tool includes pain scores and guidance on pain management depending on the score and injury pattern. This tool has been reviewed at the paediatric clinical governance meeting and is currently being introduced. We aim to evaluate the effect of the tool on staff confidence and patient experience after six months.

# Quality Improvement Project: 'The Virtual Huddle'

**Author** Patrick Clarke UHS

**Other Authors and Affiliations** Dr Annelies Mitchell  
Dr James Edelman

## Abstract

### Objectives and Background

Paediatrics is an increasingly busy specialty, but the work-load can be split unevenly amongst different areas including paediatric sub-specialties and the admissions unit. It was identified that some junior doctors were exceedingly busy on some days, but this wasn't always predictable at morning handover; this needed improving. The aim of our project was to improve the division of labour to help ensure all junior doctors had a better and fairer working day.

### Method

The plan, do, study, act, model for quality improvement was used to design a solution. A lunchtime junior doctor huddle was developed and through cycles of plan, do, study, act, the huddle became 'virtual', and was conducted via WhatsApp. A traffic light system of green (I don't need help and am free to help), amber (I don't need help but I am not free to help) and red (please help me I am very busy) was used to make the replies quick and focused.

### Results

The 'virtual huddle' became a very useful and regular part of the day. It was felt to be effective for two reasons; firstly it seemed easier for people to ask for help by using the virtual huddle rather than meeting face to face and rather than using the word 'help'. Secondly, when junior doctors asked for help it reliably arrived. All junior doctors were engaged in the process and many were both able to give and receive help at different times.

### Conclusions

We recommend the use of the virtual huddle to all large teams particularly when juniors are split across different areas within the hospital. However it does require a junior doctor cohort who are engaged and motivated to help their colleagues and improve the department

# Virtually overcoming anxiety: Can virtual reality be effective in reducing anxiety for painful procedures in a children's emergency department?

**Author** Zoe Parton, Queen Alexandra Hospital Childrens Emergency Department

**Other Authors and Affiliations** David Patel - Consultant - Queen Alexandra Hospital Children's Emergency Department

## Abstract

### Objectives and Background

Procedures in the Emergency department can be painful and distressing to children. Perception of pain in children is complex and multifaceted, heightened by stress and anxiety with pain and fear intertwined. It is well recognised that procedural sedation and distraction can be effective in facilitating procedures. We introduced the use of a virtual reality (VR) headset to supplement more traditional forms of distraction. VR allows children to be immersed in games and scenarios with audiovisual separation from the clinical environment that they are in both providing distraction and focusing attention to reduce anxiety. We decided to survey a group of children using our VR headset for painful procedures to assess its effectiveness.

### Methods

We selected 25 children who we felt were suitable for VR distraction for a range of painful or distressing procedures within our ED, ensuring they could use the headset prior to the procedure. Following the procedure we asked the children to complete a questionnaire about there level of anxiety before and whilst using the headset, we also asked if it made them feel unwell in anyway.

### Results

Early results have demonstrated that VR has been effective in reducing anxiety, full results will be ready by the conference

# Patient and Parent experiences of transition from the Paediatric Intensive Care Unit (PICU) to the Hospital Ward

**Author** Kate Herriotts, University Hospital Southampton

**Other Authors and Affiliations** Verity Ashby, University Hospital Southampton

## Abstract

Abstract title

Patient and Parent experiences of transition from the Paediatric Intensive Care Unit (PICU) to the Hospital Ward

Innovation and improvement

Objectives and Backgrounds

The aim of the research is to gain insight on patient/parents experiences of being discharged from Paediatric Intensive Care Unit (PICU). It is recognised that leaving PICU can provoke feelings of fear and anxiety for patients and their parents. It is important for families to be supported throughout the discharge process.

The research will compare the experience of families that have had Paediatric Outreach Team input on discharge and those who have not. One of the aims of the Outreach team is to enhance patient safety and follow up all children discharged from PICU, assisting them in the transition to the wards with continued clinical support.

Methods

A feedback form was developed to be given to each patient/parent discharged from PICU over a two month period. The feedback forms aim to gather both quantitative and qualitative data relating to the patients feelings around the discharge process and admission to the ward.

The feedback forms were colour coded, blue for patients who were seen by the outreach team on PICU prior to discharge and red for children who were not seen by the outreach team.

Results

The results are pending. Using the qualitative feedback we would hope to use some direct patient/parent feedback to support the findings.

Conclusions

The findings we anticipate will show a more positive patient experience when the patient and parents are introduced to the outreach team in PICU and provide continued clinical support on the wards. Further research will be needed, repeating the research during the winter months when often bed pressures are greater and acuity is higher. The outreach team could develop a PICU discharge leaflet to give to parents as a support and provide further information on the change of care going from PICU to the ward.

# Escalation of concern for the deteriorating child in areas outside the Child Health division

**Author** Rebecca Joslin, UHS

**Other Authors and Affiliations** Jenny Bull (UHS)

## Abstract

### Objectives and Background

At this trust there are specialist children's outpatient departments that fall under a different division to child health. Through service evaluation following the deterioration of a paediatric patient within one of these departments, it was evident that improvements could be made, in particular the need for clear escalation pathways to stream line the care of these patients. As a result, the following objective was set;

- To improve the escalation pathway of the deteriorating child within areas outside of child health and to ensure that there is appropriate emergency equipment to manage these patients.

### Methods

The paediatric outreach team devised an escalation flowchart in response to the service evaluation and this was displayed in all treatment rooms within the specialist outpatient department. The team were educated about these changes locally and emergency equipment was updated and brought into alignment with other shared paediatric and adult services. These changes to service provision were evaluated by simulation within the department and the subsequent debrief provided a forum for staff to discuss the issues further. Formal feedback was gathered by means of a questionnaire.

### Results

The use of simulation enabled the team to test the efficacy of the above measures. The escalation flowchart was accessed quickly, used to inform decision making and the patient was escalated appropriately through liaison with the Paediatric outreach team. Staff were able to locate paediatric emergency equipment quickly and role allocation utilised individual skill set. The paediatric outreach team attended quickly despite it being in an area outside of child health.

### Conclusion

Appropriate care of the deteriorating child is of utmost importance irrespective of their location and division. An area for improvement was identified and effective measures were instigated within this trust to improve patient care. Implementation of an escalation pathway in the unwell child has shown to optimise response times of specialist services, with the aim of improving the experience of both the child and their family.

# Perception of Clinical Activity of Paediatric Outreach Team with Southampton Children's Hospital

**Author** Paediatric Outreach Team, Southampton Children's Hospital

**Other Authors and Affiliations** Verity Ashby, Jenny Bull, Naomi Haynes, Kate Herriotts, Sophie O'Toole and Hannah Taylor  
Southampton Children's Hospital

## Abstract

### Objectives and Background

The Paediatric Outreach Service was developed in recognition of the increased acuity of children and rising pressure on acute beds, particularly in Paediatric High Dependency Unit (PHDU) and Paediatric Intensive Care Unit (PICU). The team support both medical, nursing and allied health professionals with the aim of enhancing patient safety, ensuring patients are prioritised appropriately and cared for in the most suitable setting.

The team undertakes quarterly audits of activity, with specific details being logged regarding clinical tasks performed.

Currently, introduction at Child Health induction and education updates regarding the role of Outreach occur, however regular rotation of staff with the Children's Hospital happens frequently.

This audit was conducted in order to assess staff perception of the role of Paediatric Outreach, compare this to activity data collected and identify areas for education if required.

### Method

An online survey was sent out to all staff within Southampton Children's Hospital, encompassing in-patient wards, PICU and Children's Emergency Department. Staff were invited to state three most frequent activities they felt Outreach were involved in and these were compared to the clinical activity log completed by Outreach. Activity was retrospectively reviewed over the previous year.

### Results

Although only preliminary results are available at time of submission, 100 responses regarding activity were available to be analysed. Awareness of the Outreach team was seen in 97% of responses and at initial review, Outreach activity does appear to correlate with staff perception of the role of the team. Particular note was seen with regard to assessment and intervention for the deteriorating patient, intravenous access and review of patients post PICU transfer.

### Conclusion

Based on preliminary results, perception of the Paediatric Outreach team role correlates with team activity data. Continued education as new staff rotate and ongoing publicity of the Outreach role will continue.

# A Sticky Situation

**Author**

Shreya Chugh, Queen Alexandra Hospital

**Other Authors and Affiliations**

Dr Sophie Robertson

**Abstract**

Objectives and background

Local Safety Standard for Invasive Procedures (LocSSIPs) have been implemented to provide standardised patient care across the trust to reduce human errors and encourage adherence to proper documentation and sterile technique. In the paediatric wards at the Queen Alexandra Hospital, we have introduced Procedure Stickers for patient notes to be used for invasive procedures including LPs, cannulas, catheters, and PICC lines. The objective of this Quality Improvement Project is to identify the usage of Procedure Stickers on paediatric wards and increase the usage to 100% after 2 months as per the LocSSIPs standard.

**Methods**

I used a PDSA cycle to assess the change after primary intervention. I reviewed a random sample of notes on the Paediatric wards, then conducted preliminary interviews with 14 paediatric staff regarding the stickers' usage and collected suggestions on further improvement. Their suggestions of promulgating the stickers at inductions and displaying posters in staff toilets, alongside continuing monthly staff interviews will be implemented and the change in uptake of stickers assessed using a run-chart to monitor their usage.

**Results:**

From 24 sets of notes, 5 were excluded due to separate departmental documentation systems in A&E (1) and in theatre (4), and 8 excluded for not having invasive procedures, leaving a final sample of 11 sets of notes with 12 procedures requiring stickers. Preliminary results showed that 100% of staff were aware of the location and purpose of the stickers, however correct usage occurred in only 8.3% of instances.

**Conclusions:**

The use of Procedure Stickers as our LocSSIPs intervention was audited last year with successful outcomes after interventions, however this uptake has proven unsustainable given poor preliminary usage on this round. Potential explanations include new junior doctors, thus further and regular interviews should enhance the sustainable uptake of Procedure Stickers so the adherence to consent and sterile technique for invasive procedures.

