

their visits. The first phase of the project focusses on a range of apps designed for service improvement and patient experience.

The Digital Bedroom Project aims to enhance the experience of the patient and families through enhanced technology which will ideally improve the performance of research visits and improve patient outcomes. Research is at the heart of everything we do and by tailoring all patient visits to their individual needs we hope to link to the GOSH Always Values, making all individualised patients feel Always Welcoming to the new research environment and improve our research facilities through digital innovation.

77 COLLABORATIVE INDUCTIONS FOR HEALTHCARE SUPPORT WORKERS (HCSWS)

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10.1136/bmjpo-2023-GOSH.24

New HCSWs identified feeling daunted and isolated by existing induction processes due to multiple communications and timetables. Collaboration across Practice Education (PE) and other teams aimed to streamline this by combining Trust, Care Certificate, apprenticeship, and local induction into one two-week timetable to provide standardised teaching and encourage a community of practice and peer-support amongst HCSWs. This would reduce repetition and time spent by educators.

Method We met with PEs and Learning/Development teams to establish content. Meeting existing HCSWs allowed us to review the learner experience. A timetable was established, with sessions delivered by different educators allowing for a diverse teaching team, encouraging PE collaboration. The National Care Certificate standards were aligned to sessions to ensure quality, standardised teaching. We identified the need for context, so included two shadow shifts on allocated ward areas for orientation and application of learning.

During the pilot process we targeted managers and PEs for engagement. Feedback was gathered from stakeholders through an electronic questionnaire.

Results Aims were achieved: the initiative had an overall rating of 4.6/5. 83% of HCSWs recommended it to future cohorts. 100% found the shadow shift useful. Qualitative data showed HCSWs benefited from group working and clearly understood roles and responsibilities. PEs overall rated the experience as positive, reporting time was saved in reducing content repetition and would be likely to engage in same process again. The collaboration and networking between PEs was a real benefit, showing an appreciation for each other's roles. Throughout the two weeks peer support was observed, the HCSWs were animated, engaged and open to discussions together.

Conclusion The initiative achieved its aims, showcasing increased collaboration, reduced duplication and a more welcoming environment and will therefore run again. Being entry level, early investment is imperative through high-standard inductions to improve staff experience, retention, and safer patient outcomes.

80 PICTURE – LUNG FUNCTION TESTING IN CHRONIC LUNG ALLOGRAFT DYSFUNCTION

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10.1136/bmjpo-2023-GOSH.25

Introduction Chronic lung allograft dysfunction (CLAD) is driven by chronic rejection post lung transplantation and is the main cause of mortality in those more than one year post lung transplantation. It's defined by change in lung function (spirometry) results. We hypothesised that analysis of trends in lung function could identify early changes in spirometry (forced expiratory volume in 1 second; FEV1) trends. We built an analysis web application (PICTURE) that analyses electronic health record (EHR) data and presents it interactively or as PDF reports. We used PICTURE to compare FEV1 in transplant patients alongside additional lung function outcomes (lung clearance index; LCI), demographics, and laboratory data from the EHR.

Methods Data for Paediatric lung transplant patients cared for at GOSH between 01/05/2019 and 31/03/2023 were extracted and divided by outcome (presence or absence of CLAD) within PICTURE. LCI and FEV1 results were obtained and compared with the Kruskal–Wallis test.

Results There were 8 CLAD positive and 27 CLAD negative lung transplant patients. FEV1 scores were lower in patients with CLAD diagnoses. LCI didn't significantly differ between groups.

Conclusions PICTURE allows rapid extraction and analysis of datasets for children with rare diseases whose data is held at GOSH. The finding of lower FEV1 in the CLAD group validates the use of PICTURE for audit type analyses. LCI is reported to be more sensitive than spirometry in CLAD, a finding that was not reproduced in this study. As PICTURE used existing functions this report demonstrates its potential to answer queries which previously required manually transferring data between systems.

This project has been completed by Great Ormond Street Hospital NHS Foundation Trust and Roche Products Ltd as part of a collaborative working agreement. Roche Products Ltd had no influence on the results or decision to publish regarding this work. M-GB-00013791 | September 2023

Acknowledgements for funding or support This work is supported by the NIHR GOSH BRC. The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health.

83 ACCURACY OF ARTIFICIAL INTELLIGENCE FOR FRACTURE DETECTION IN OSTEOGENESIS IMPERFECTA

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10.1136/bmjpo-2023-GOSH.26

Purpose The genetic condition osteogenesis imperfecta (OI) is associated with an increased risk of bone fractures. This study

evaluates the ability of an Artificial Intelligence (AI) tool, that is available commercially, to improve radiologists' performance in diagnosing fractures in children with OI.

Methods and Materials In two separate rounds, seven radiologists reviewed 107 appendicular radiographic examinations (consisting of 336 individual projections) from 48 different children with OI (aged 6 – 17 years). There were 206 distinct fractures across the entire dataset (as set by the ground truth). The first round involved radiologists reviewing the cases alone and in the second they had access to AI assistance. Two consultant Paediatric radiologists used knowledge of the clinical indication and availability of prior examinations to conjointly establish the ground truth (or gold standard). Analysis of the radiologists' performance was conducted at three levels: per examination, per image, and per fracture.

Results Overall, the average per patient accuracy increased from 83.4% [95% CI, 75.2%, 89.8%] to 90.7% [95% CI, 83.5%, 95.4%] when using AI assistance. The per fracture specificity, PPV, and accuracy rates improved by 10.0%, 7.2% and 3.7% respectively; however, the average sensitivity also decreased by 2.8% and NPV showed a mild reduction of 0.4%.

Conclusion The use of AI assistance to aid in detection of fractures for cases of OI can yield small improvements in diagnostic performance. Prospective application of these AI tools may not be certain to see equivalent results as the clinical significance of the improvements is yet to be determined. The data from this study does indicate that there is some generalisability in AI tools not tested or trained on Paediatric OI populations, to extend to such cases and without negatively impacting reader performance.

Acknowledgements for funding or support The authors receive funding from the Great Ormond Street Children's Charity and the Great Ormond Street Hospital NIHR Biomedical Research Centre. This article presents independent research funded by the NIHR and the views expressed are those of the author(s) and not necessarily those of the NHS, NIHR or the Department of Health.

85 INVESTIGATING MEDICATION ADMINISTRATION WORKAROUNDS VIA USE OF A DATA WAREHOUSE

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10.1136/bmjpo-2023-GOSH.27

Protocols combined with technology-based systems such as Barcode Medication Administration (BCMA) or Computer Prescription Order Entry were designed to embed the elements of best-practice into workflow and are now dominant in promoting healthcare quality and safety (Rack, Dudjak, & Wolf, 2012). These protocols are failing, often not addressing the root cause workflow issues that are causing quality issues.

As a result, there is increasing interest in the phenomenon of Nursing Practice Workarounds (NPWs); with a focus on patient safety and evidence-based practice (Seaman et al, 2015). Workarounds have typically been viewed as deviations

from best practice that put patients at risk of poor outcomes (Alter, 2014). However, this is increasingly considered a narrow view which fails to take into consideration the multi-factorial origins of workarounds.

Through interdisciplinary work with Data Engineers based in the Digital Research and Informatics Unit (DRIVE) we have been able to find the digital evidence of workarounds. Data from the trust's electronic patient record system (EPIC) is transformed and then stored in a data warehouse (Caboodle). Using the Data Warehouse Schema relevant data was located. Data was then extracted iteratively until the specific desired medication administration data was extracted.

Pending ethical approval, this method can provide historic quantitative measures of the prevalence of non-conformation with the BCMA workflow. Combined with testimony from critical care nurses, this could prove to be a demonstration that some NPWs are unseen and meeting or exceeding KPI's may not accurately reflect clinical safety.

As a result, there is evidence for further investigation into the nature of NPW's and how they are influencing patient safety. Additionally, this kind of work reflects the increasing benefits for nursing/clinical staff working with data engineers. **Acknowledgements for funding or support** NIHR Great Ormond Street Hospital Biomedical Research Centre (BRC)

88 PATIENT MONITORING: A COLOURFUL CONUNDRUM

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10.1136/bmjpo-2023-GOSH.28

Background Patient safety is at the centre of every anaesthetic that we give. Intraoperative monitoring of vital signs including blood pressure, ECG, oxygen saturations and end-tidal carbon dioxide concentration, allows continuous patient monitoring throughout the perioperative period and is essential for patient safety. The formatting of the information presented including the layout and the colour is not standardised. When moving between Trusts (as is the case for many anaesthetic trainees and fellows) this can lead to confusion and potentially risk patient safety.

Method I carried out a survey of anaesthetists and Operating Department Practitioners (ODPs) in the Anaesthetic Department at Great Ormond Street exploring the issue of standardised monitoring. These were distributed and collected over a period of two days in August 2023.

Results A total of ten surveys were collected (seven anaesthetists and three ODPs). 80% of people were able to remember the colours used for each of oxygen saturations, ECG, non-invasive blood pressure and invasive blood pressure at Great Ormond Street Hospital. 40% of people had experienced different coloured monitoring when working at different hospitals. One person was aware of guidelines relating to the formatting of monitoring (10%). 100% of people who completed the survey felt that intraoperative monitoring should be standardised across all hospitals.

Conclusion Anaesthetists and ODPs feel that standardising monitoring would enhance patient safety and reduce the risk of errors.