

kickstarted the accreditation process across multiple trusts. This solidifies GOSH's position as a leader in multi professional education.

#### 40 USING ARTIFICIAL INTELLIGENCE TO IMPROVE PATIENT AND FAMILY EXPERIENCE

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Within Great Ormond Street Hospital for Children, (GOSH), valuable patient feedback is collected via the Friends and Family Test (FFT). GOSH receives 2,000 comments per month from inpatient and outpatient areas and 85% of the feedback contains unstructured free text.

The GOSH Patient Experience Team (PET) processes the feedback, manually applying sentiment and themes to each qualitative comment. Trends and themes are analysed and reported on from all wards and departments. This process is extremely time consuming, resulting in feedback trends being shared in the Trust retrospectively.

Consequently, GOSH PET applied as the only Paediatric Trust to be involved in the 'Scale Spread & Embed' project, led by Imperial College London, and funded by the Health Foundation. The project objective is to use Natural Language Processing (NLP), a branch of Artificial Intelligence (AI), to transform unstructured text into a structured format, enabling faster analysis. The PET felt it was vital to be involved to improve the resolution period for any negative feedback, as quicker resolution of any issues would result in a better experience for GOSH patients and their families.

One of the project elements is the creation of bespoke dashboards that are uncomplicated and user-friendly containing 'real-time' feedback data. These will be accessible to all GOSH staff and enable quick identification of any negative themes allowing for remedial actions to be carried out as necessary. Another important component of the dashboards is a spotlight on the positive feedback, which constitutes 95% of the feedback received, cultivating staff morale. Additionally, feedback will be utilised to identify any Quality Improvement projects, specifically within the new Q-TEAMS meetings.

This project has brought together experts from teams across GOSH, Patient Experience, Quality Improvement, Information Services, DRIVE, Ward and Department Managers and ICT who have all played a key role in the project's advancement.

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#### 42 PICTURE STANDARDS – A METHOD FOR THE CALCULATION OF GOSH-SPECIFIC COHORT-RELATED STANDARDS

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**Introduction** Paediatric standards are widely used by clinicians to understand how values of an important variable for an individual child compare to the typical range for a population of similar children, allowing them to identify and diagnose disease or deterioration. While there are published age-related standards for variables such as height and weight among healthy children, these are often unavailable for other uncommon variables, such as creatinine levels or gait, and in rare-disease populations. Our research explored analytical methods so that GOSH-specific standards can be computed from electronic health record (EHR) data and used to assess patients.

**Methods** We developed an analytical method within the GOSH clinical informatics platform (PICTURE) to build standards from EHR data. PICTURE allows one to define phenotype-based patient cohorts, extracts their data from the EHR, and applies generalised analytical methods to synthesise information derived from individual trajectories. We fit Generalized Additive Models for Location, Scale and Shape (GAMLSS) to construct growth standards. Using non-parametric (typically splines) flexible models, GAMLSS can fit standards to many types of data stored in the EHR such as vital signs and laboratory test results.

**Results** We constructed standards for two example applications in cardiology patients ( $n=3068$ ). We produced age- and sex-specific weight standards and visualised how GOSH-cardiology patient weight gain differs from that in a healthy population. We also produced sex- and age-specific standards for serum creatinine and show how they contrast with the usual discretised normal ranges.

**Conclusions** This investigation shows how standards can be generated based on EHR data as part of the GOSH clinical informatics platform. Easy access to GOSH-specific standards has the potential to support clinicians identifying how patients are deviating from what would be expected for healthy or similar patients. Further work is needed to validate the accuracy and utility of information from single-centre standards.

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#### 43 PICTURE – GENERATING PROVIDER-SPECIFIC DATA FOR INFORMED CONSENT IN CARDIAC REPAIR SURGERY

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**Introduction** Communicating the risks associated with a procedure is critical to the principle of informed consent. While clinicians typically use risk rates that are appropriate to the patient being consented, when there is a lack of published data or the patient has rare or complex disease, this can be challenging. GOSH has developed PICTURE, a clinical informatics platform allowing efficient analysis of EHR data from a flexibly defined cohort of previous patients. In this study we explore how PICTURE can produce provider-specific information about the prevalence of complications.