78% (n=7) of patients who had a GDP requested a specialist dental check-up at Alder Hey. Three patients already under the dental department, were no longer registered with a GDP. Only one patient (11%) who hadn't been seen in the dental department previously knew of its existence. 67% (n=2) of patients who had been seen within the dental department previously, requested a dental review. Dental review was arranged for all the patients who requested it.

Conclusions

- There was generalised high demand for specialist dental review and oral health information
- Most patients were post-transplant or CKD 4 & 5, who require specialist dental management
- Few patients had been seen within the department previously, and few were aware that there was a dental department at Alder Hey
- Data collection was disrupted due to the COVID-19 pandemic but highlighted the need for formal renal-dental pathways

Recommendations

- Specialist dental assessment for all haemodialysis patients
- Dental assessment of pre-transplant patients during work up
- Annual or semi-annual specialist dental review post-transplant

Development of an oral health leaflet for renal patients

British Association of Child and Adolescent Public Health

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PREDICTORS OF HEALTHCARE UTILISATION IN CHILDREN: A POPULATION SEGMENTATION APPROACH IN NORTH WEST LONDON

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Background There is a growing role for health services in managing population health. Segmentation approaches are widely used in the adult population to identify individuals with similar healthcare needs, based either on demographics and long-term conditions (LTCs), or on healthcare utilisation. Although the two approaches are closely linked in adults, the link between demographics and LTCs with healthcare utilisation in children at a population level is unclear.

Objectives To segment the child population of North West London based on healthcare utilisation, and to identify the predictors of utilisation based on age, sex, ethnicity, long-term conditions, and socio-economic deprivation.

Methods Data for this study used the Discover platform to access routinely collected primary and secondary healthcare data in North West (NW) London. A retrospective cohort was constructed of children aged 0–15 years currently registered to a general practice (GP) in NW London with one full year of follow-up up to the end of February 2020. For children who had died during this period, one year of follow-up was

included up until the date of death. A k-means clustering method was performed to segment the population based on seven healthcare utilisation variables (GP, A&E and outpatient attendances; elective and emergency admissions; elective and emergency total length of stay in days over the year). Adjusted multinomial logistic regression was used to identify the predictors of segment membership, including age, sex, ethnicity, deprivation (using quintiles of the Index of Multiple Deprivation score) and presence of one or more LTCs as covariates.

Results 378,309 currently registered children aged 0–15 years were included in the cohort, of whom 43 (0.01%) had died. Six segments were defined with differing healthcare utilisation patterns: three segments predominantly using primary care, one predominantly using emergency care services, one predominantly using elective care services, and another, representing 4.4% of the population with the highest activity across all service types. Younger children, males, those with one or more LTCs, and those living in areas with higher deprivation were more likely to be in higher utilisation segments. However, the pseudo-R² for the model was 0.052, suggesting significant unexplained variation in utilisation.

Conclusions Using a data-driven method, we segmented the child population of NW London into six distinct groups based on healthcare utilisation. Although demographics and co-morbidities were strong predictors of utilisation segment, a significant amount of variation remained unexplained, suggesting a less well-defined trajectory of utilisation in children than in adults. Further research is needed to understand whether additional factors available in electronic health records can explain variation in utilisation, and can enable early identification and intervention.

Association of Paediatric Emergency Medicine

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COMPARISON OF THREE PAEDIATRIC EARLY WARNING SCORES FOR CHILDREN REQUIRING UNPLANNED PICU ADMISSIONS RETROSPECTIVE OBSERVATIONAL STUDY

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Background Paediatric early warning system (PEWS) is a well-recognised multi-faceted structure used to detect and manage clinical deterioration in children. There are multiple systems used in various clinical settings with limited evidence despite its widespread implementation in healthcare. However, it has been identified that there is a need for standardisation to help improve patient safety. The three tertiary children's hospitals in the 'South Thames Paediatric Network' in London (Evelina children's hospital, Kings College Hospital and St Georges hospital) use three different types of PEWS.

Objectives The overall aim of this study was to compare the three different PEWS to identify clinical deterioration in children requiring unplanned PICU admissions. The primary hypothesis was that there were differences in the time for escalation based on the type of PEWS tools used for a sample of population requiring unplanned PICU admission.

Methods This was a single centred retrospective observational study of 35 patients with unplanned PICU admissions from

May to November 2018. In this study, three different types of PEWS from three tertiary hospitals in South London were applied on the same sample of population to compare 'time for escalation' in 24 hours period before unplanned PICU admission. The three different types of PEWS used are 'Between the Flags' from Evelina children's, Paediatric Clinical Assessment Tool (PCAT) from St George's and Bedside Paediatric Early Warning Scores (BPEWS) from King's college hospitals.

Results A total of 35 patients requiring unplanned PICU admissions from Evelina hospital wards were selected. The 5-time slot observations (1, 6, 12, 18 and 24hrs) from these 35 patients in 24 hours prior to unplanned PICU admission were plotted on three different PEWS tools and median times for escalation were compared. Out of 35 patients included for this study, 22 (63%) were male and 13 (37%) were female patients. The age of these patients ranged from 0- 16 years and grouped as < 3 months (20%), 3-12months (34%), 1-4 years (29%), 5-11 years (8%) and > 12 years (9%). The median time for escalation with use of 'Between the flags' and PCAT tool was 12 hours compared to 1 hour before unplanned PICU admission with use of Bedside PEWS. There was statistically significant difference ($p < 0.001$) between the median times of escalation for unplanned PICU admissions.

Conclusions This study found that the average time for escalation was similar with the use of PEWS tools from Evelina Children's and St George's hospitals. However, there was a significant difference and the PEWS tools from these two hospitals performed better and predicted escalation earlier compared to BPEWS scoring tool used at King's College hospital.

This is one of the first studies comparing three PEWS tools in these tertiary hospitals in South London. PICU admissions are uncommon events and retrospective study design offered cost effective alternative to conducting controlled or prospective research. Further prospective study with a larger sample size is needed to have a better understanding of PEWS.

improvements in various aspects of healthcare including better recognition and intervention in clinical deterioration of children. PEWS is a recognised tool and is widely used by healthcare staff, despite the evidence being unclear. Nursing and medical staff find it helpful not only in detecting clinical deterioration but also communicating escalation of care. However, there is no standardised PEWS system in the whole of UK, with significant inter-hospital differences. This makes it difficult to evaluate and compare performance between hospitals. There is a need for uniform national PEWS, with validation for use in different clinical conditions and inclusion of patient/carer concerns.

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THE EFFECT OF THE COVID-19 PANDEMIC ON TIME USE, BELIEFS, CHILDCARE AND CHILD DEVELOPMENT FOR FIRST-TIME PARENTS IN ENGLAND

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Background The COVID-19 pandemic has generated a catastrophic shock to the development of this generation of children, not only through the increased financial hardship faced by many, but also through the substantial disruption to routines, learning time, use of childcare and social contact. In England, social distancing restrictions have varied both regionally and over the course of 2020. In this project, we study the effects of the COVID-19 pandemic on child health and development, the level of investments parents are putting into their children, and determinants of these decisions such as parental beliefs about the importance of different investments.

Objectives This paper analyses whether parental beliefs about the importance of different investments differ by individuals' characteristics, and whether beliefs are predictive of actual investment decisions.

Methods We collected primary survey data for 560 first-time parents living in England, with one child less than five years old, who had not started primary school before the pandemic hit. Our first survey wave ran from 31st May to 9th June 2020, and the second between 12th July and 6th September 2020. Our rich data includes, amongst other things, detailed time-use diaries, types of childcare used before, during and after the pandemic, changes in employment and finances, and child health and nutrition. As social distancing restrictions in England evolve, we are running an additional wave of our survey. Ongoing research will incorporate this additional data, building the panel of time-use diaries, as well as analysing differences in child nutrition as an investment in child development, and using SDQ scores and child health measures as a proxy for child development. Additionally, we analyse how individual's beliefs may be determined by where in England they live by merging in Local Authority level characteristics.

Results Exploiting variation between multiple waves of the survey, and between hypothetical scenarios to elicit respondents' beliefs, we employ an individual-fixed-effects approach. Our preliminary results indicate that the first lockdown caused significant differences in patterns of children's time-use and the use of childcare. We also find significant differences in beliefs about the costs and benefits between types of parental investment. Although parents believe that parental play, play with friends and schooling improve child development, they perceive that parental play is the most important input for reaching a good level of development. Attending school is also perceived as the activity most likely to result in catching COVID-19, followed by play with friends and parental play. Concordant with beliefs about the costs and benefits of schooling, childcare usage is low among those eligible during lockdown, and after lockdown usage does not reach pre-pandemic levels. We find that parental beliefs, time-use and childcare attendance vary significantly between individual's socioeconomic characteristics.

Conclusions The lack of return to normal childcare use may be partially determined by parents' beliefs that the benefits of parental play outweigh the costs. Given that these perceived benefits and costs vary systematically by individual's characteristics, policy makers should consider targeted information campaigns to improve information about the benefits and costs of childcare use.