British Association of General Paediatrics

A SERVICE EVALUATION OF GENERAL PAEDIATRIC CASELOAD

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Results Between 11th September 2019 and 10th September 2020, 22,940 patients attended the ED. The top 3 presenting complaints were shortness of breath (10.8%), head injury (9.7%) and fever (9.5%) and the top 3 diagnoses (made by a doctor) were ‘no abnormality detected/no diagnosis recorded’ (21.9%), URTI (6.6%) and closed fracture (5.6%). In the 12–17-year-old age group, mental health issues were the 4th most common diagnosis (8.4%). Over the same year, 3212 patients were admitted to wards under general paediatrics. The top reason for admission was viral infection for stays less than 24 hours (16.3%) and 24–72 hours (13.8%) and acute bronchiolitis (20.9%) for stays over 72 hours. The median length of stay was 1 day, and the most common length of stay was 0 days. Over 8 weeks of outpatient clinics (September-October 2020) there were 476 appointments. The top 3 reasons for attendance were constipation (8.2%), food allergies/intolerances (5.9%) and abdominal pain (4.2%). 16.3% of appointments were unattended.

Conclusions This is the first report of the full service provided by the general paediatric department at UHS, identifying common conditions presenting to the service. There may be a number of reasons why the final diagnosis made in ED was most commonly ‘no abnormality detected’. These include patients’ symptoms easing prior to consultation and misdiagnosis, where the patients attend for a reason perceived to be concerning, however the child is found to be well. Review of current guidance has shown a lack of information available for some common conditions and developing new pathways of care may be beneficial for clinicians and families. Additional targeted work and focussed education into these areas may lead to improvements in care. The data can be used to help inform further research projects, as well as to develop services within local healthcare systems, improving the management of patients presenting with conditions that could be dealt with outside a hospital setting.

British Paediatric Respiratory Society

IMPROVING THE CURRENT METHODS OF FRACTION OF INSPIRED OXYGEN CALCULATION IN NEONATAL POPULATION

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Results FiO₂ increases with flow rate, oxygen concentration and inspiratory time; and decreases with weight, respiratory rate and tidal volume. The Finer formula consistently estimated higher values than Benaron-Benitz in all comparisons, with especially large differences at weights between 0.5 to 2 kg and low flow rates > 200 mL/min. When comparing model values to empirical measurements from Gonzalez, we see the general trend with flow rate (linear increase then asymptote above ~1000 mL/min) is most similar to the Benaron and Benitz model which correlates strongly with the measured data and predicts within the error bars of all points (Figure 1). The Finer model overestimates all measured values and does not come within the error bars of most points (Figure 1). Assumption of inspiratory time could make a significant difference to the estimated FiO₂ value, which is less sensitive to small changes in tidal volume. The Benaron-Benitz formula was found to fit much better to hypopharyngeal measurements, especially at weights between 0.5 to 2 kg (IQR) predicted by Finer et al and Benaron et al were 32% (26–41%) and 25% (23–28%) respectively (p< <0.001) (Figure-2). A ‘static’ HTML website was produced to provide convenient access to the NICU Tools, Benaron-Benitz and our hybrid formulae, which can be accessed at fio2calculator.github.io.

Conclusions Significant variations are seen in calculation of fraction of inspired oxygen using currently existing formulas. Our interface provides convenient access to all the existing formulae including our new hybrid model.