Background The NHS East of England guideline regarding administration of oxygen to infants (PNPG0161) was revised in 2019. It details the oxygen saturation target range and pulse oximetry monitoring alarm limits required by infants depending on their gestational age and comorbidities.

Objectives We set out to improve the prescribing and monitoring of oxygen saturation in the neonatal unit at Southend Hospital, with a view to making improvements should the standard fall below those set out in the guideline. Southend has a Level 2 unit which is able to care for infants born at from 27 weeks and monitors functional pulse oximetry using the Philips Intelliview MP70 Neonatal.

Methods We audited the unit between September and December 2019, 6 months after dissemination of the guideline within the neonatal department. This involved random spot checks of the prescriptions for oxygen and the saturation alarm limits set for all infants on the unit to assess compliance with the following 4 standards:

- 100% of infants receiving oxygen should have oxygen prescribed in a drug chart with a specified saturation target range.
- 100% of infants receiving oxygen should be on continuous pulse oximetry.
- 100% of continuous pulse oximetry should have appropriate set saturation alarm limits.
- 100% of infants requiring deviation from the recommendations should have this documented by a clinician in their notes.

Following the initial results, we worked with the unit manager and neonatal educational nurse to improve our performance. Departmental teaching was organised regarding the content of the guideline and we introduced a sticker into the oxygen section of the drug charts. This was to be acknowledged and validated twice daily by the nursing staff. We also displayed the recommended oxygen saturation targets for prescription and monitoring alarm limits on the unit and in the doctors' office.

Results 4 months after making improvements, we repeated random spot checks of the unit between May and June 2020. The overall rate of accurate oxygen prescribing rose from 22.9% to 87.9% and all cases with a correct prescription were associated with a sticker. The unit remained consistent in monitoring 100% of infants receiving oxygen, however, the rate of infants below 34 weeks gestation on continuous pulse oximetry fell to 95%. The rate of correctly set saturation alarm limits rose from 81.9% to 85%. Notably, it was term infants and those on air who frequently had incorrect settings. There remained no cases in which deviation from the guidelines was justified in the notes.

Conclusions Certain improvements, particularly use of a sticker in the drug charts, increased the accuracy with which oxygen saturation target ranges were prescribed. Further improvements are required for our unit to achieve the standards set by NHS East of England, such as ensuring all infants have an oxygen prescription and correctly set saturation alarm limits. We recommend augmentation of the sticker with more information and space to document justification of any deviation from the guideline. We suggest further departmental teaching regarding this, in particular the pulse oximetry monitoring of term infants on air and those younger than 34 weeks.

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A SYSTEMATIC REVIEW OF URINE BIOMARKERS IN CHILDREN WITH IGA VASCULITIS NEPHRITIS

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Background Nephritis is a recognised complication of IgA vasculitis (IgAV, Henoch-Schoenlein purpura, HSP) and contributes to 1–2% of all chronic kidney disease (CKD). Improved detection and understanding of kidney inflammation may reduce irreversible kidney damage in IgA vasculitis nephritis (IgAV-N).

Objectives The primary aim of this study was to perform a comprehensive systematic review to evaluate the current literature to identify promising urine biomarkers that can predict and assess the severity of kidney disease in children with IgAV.

Methods A systematic literature review was performed using 4 search engines and a search term strategy with predefined inclusion and exclusion criteria. Promising biomarkers were divided in terms of clinical or pre-clinical and described using statistical significance and area under the curve (AUC) values.

Results 121 studies were identified and thirteen were eligible for inclusion. A total of 2,446 paediatric patients were included; 51% male, median age 7.9 years (range not available). This comprised of healthy controls (n=761), children with IgAV-N (n=1,236) and children with IgAV without nephritis (IgAV-noN, n=449). The clinical markers for assessing severity of nephritis, 24-hour protein quantity, urine protein:creatinine ratio were both acceptable (AUC <0.8) and urinary albumin concentration (Malb) performed well (AUC 0.81–0.98). The most promising pre-clinical urinary biomarkers were kidney injury molecule-1 (KIM-1) (AUC 0.93), monocyte chemotactic protein-1 (MCP-1) (AUC 0.83), N-acetyl-beta-glucosaminidase (NAG) (0.76–0.96), and angiotensinogen (AGT) (no AUC available).

Conclusions Further longitudinal studies are needed to assess whether these biomarkers enhance standard of care in the management of IgAV-N.

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MAKING PAEDIATRIC ECG INTERPRETATION IN THE PAEDIATRIC EMERGENCY DEPARTMENT EASIER AND SAFER BY INTRODUCTION OF AN ECG CHECKLIST

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