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### EVALUATION OF ANAESTHESIA FOR PAEDIATRIC MRI IN A LARGE DISTRICT GENERAL HOSPITAL: PLANNING A SEDATION SERVICE

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#### **Background:**

Sedation is increasingly being used for paediatric patients undergoing Magnetic Resonance Imaging (MRI). Currently, Broomfield Hospital (Mid and South Essex Trust) provides a general anaesthesia (GA) service for children who are unable to tolerate MRI fully awake. However, sedation rather than GA may have multiple benefits for children including improved safety from lower requirement for airway management and less cardiorespiratory depression, reduced side effects such as emergence delirium and nausea, increased efficiency, lower resource requirement, more rapid recovery and in some instances may be carried out without the need for intravenous (IV) access. This study aims to identify the proportion of patients that would be suitable for sedation as a precursor for setting up a sedation service. Additionally, this will guide whether IV access is necessary and which sedative agents, doses and routes would be suitable for our patient population.

#### **Methods:**

Broomfield Hospital conducts a monthly MRI list for paediatric patients requiring general anaesthesia. Paediatric patients (under the age of 16 years) undergoing MRI from 01/08/2020 to 01/02/2023 were included in the study and data including patient age, weight, need for intravenous access, scan duration and indications in addition to co-morbidities was collected retrospectively using the pre-assessment documentation and MRI anaesthetic records. This data was subsequently analysed to provide an overview of the current need for a paediatric sedation service at Broomfield Hospital.

#### **Results:**

A total of 110 children, ranging in age from 6 months to 15 years old, and weighing between 6.2 and 80kg were included in the study. MRI Brain was the most common imaging requested and usually indicated to investigate seizures or developmental delay. 86% were suitable candidates for imaging under sedation as per the Great Ormond Street Hospital for Children Radiology Nurse Led Sedation Policy [1], 2% were unsuitable due to previous failed attempts of MRI under sedation and severe reflux, and 12% had insufficient information for an informed decision. Of those children suitable for sedation, only 20% had scans using intravenous contrast and thus required IV cannulation and 66% had imaging lasting for equal to or less than 45 minutes meaning they could be potential candidates for sedation techniques such as intranasal Dexmedetomidine alone.

#### **Conclusion:**

We found that the majority of children (86%) currently undergoing general anaesthesia for MRI would be potential candidates for sedation and that this could have been needle-free in 80% of

these children. Overall, this study demonstrates that there is a need for a paediatric sedation service at Broomfield Hospital for children undergoing MRI.

#### **Reference**

1. Sury M. Radiology Nurse Led Sedation Policy (MRI, CT and Nuclear Medicine). [Internet]. Available from: [https://media.gosh.nhs.uk/documents/FOIRQ5534\\_-\\_Radiology\\_sedation\\_guideline\\_June\\_2019.pdf](https://media.gosh.nhs.uk/documents/FOIRQ5534_-_Radiology_sedation_guideline_June_2019.pdf) [Accessed 06/02/23]