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Guideline on the use of intravenous ketamine for procedural sedation in the children's emergency department: A quality improvement project

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In paediatric emergency medicine, sedation is crucial for performing some therapeutic procedures in children. Ketamine is still not widely used, despite being the preferred agent due to its effectiveness and safety profile. Implementing a guideline for intravenous ketamine in emergencies requiring procedural sedation in children, as well as training and evaluating staff competencies in performing this procedure are the aims of this study. Senior and mid-level physicians, including paediatric nurses working in the children's emergency department (ED), have easy access to this concise repository for carrying out this procedure safely and effectively.

The main objective was to implement a policy (guideline) for sedation in the children's ED. The secondary objectives were to determine whether the introduction of this policy increased the overall satisfaction rating of procedural sedation as a service offered in the Trust to close skill gaps among staff through targeted training, and to assess the degree of recommendation for this ongoing standard of practice, in line with the current best evidence.

Methodology: A retrospective review of paediatric sedation cases with fractures in the children's ED of Buckinghamshire Healthcare National Health Service (NHS) Trust was conducted between June 2022 and August 2023. Surveys were sent out to assess attitudes, sedation skills, and compliance with the Royal College of Emergency Medicine (RCEM) guidelines. A policy for paediatric sedation with intravenous ketamine was later created and put into effect. Pre- and post-intervention data were compared to assess changes in sedation competency, compliance, and confidence.

Results: Out of the 103 paediatric fracture cases reviewed, 16 were identified as needing reduction upon the initial evaluation, based on the child's condition at presentation. However, only one (6%) was treated with ketamine sedation in the children's ED, whereas nine cases (56%) were reduced under general anaesthesia. The remainder was treated with varying use of nitrous oxide gas (Entonox) and diamorphine. Significant progress had been made after a clinical guideline for intravenous ketamine-assisted sedation in children was put into practice. Physicians reported improved knowledge of sedation techniques, knowledge of airway control, and safety in administering ketamine sedation. The percentage of respondents supporting the guidelines increased from 61% before the intervention (nValue=11) to 94% after (nValue=17), using various metrics.

Conclusion: These results demonstrated how well evidence-based policies and training can improve performance, competence, and safety. The use of procedural sedation in the children's ED increased and the need for general anaesthesia was significantly reduced after a uniform paediatric ketamine sedation policy was implemented. Targeted training to address skill gaps increased employee confidence and adherence to best practices.

Biography

Dr Samuel Ime Udo is an emergency medicine Registrar in Buckinghamshire Healthcare NHS Trust. He earned his MRCEM Diploma from the Royal College of Emergency Medicine and is presently enrolled in the University of Port Harcourt's Master of Health Systems Management programme. In emergency medicine, he actively participates in quality improvement initiatives that emphasize patient safety. His current research explores optimising procedural sedation protocols to improve patient safety and outcomes in children. Dr Udo has presented at several national and international conferences and is passionate about integrating evidence-based practices into acute care.