Paediatrics in the prehospital environment: A quality improvement project to improve the use of paediatric equipment by ambulance clinicians in a UK Ambulance Service.

Orla Morrow, FdSc, BSc (Hons), MCPara

Abstract

Statement of the Problem: Prehospital responses to paediatric patients are significantly lower than those of the adult population and often incur a stressful experience (Alharthy et al, 2021). Ambulance clinicians are highly trained professionals who are often the first point where initial interventions can improve patient outcomes (Sanders et al, 2014). Paramedics often struggled to locate essential paediatric equipment, a modifiable barrier to the provision of high-quality person-centred care (Lammers et al, 2012; Butler and Adefuye, 2019; King et al, 2020; Owusu-Ansah et al,2020). The Northern Ireland Ambulance Service (NIAS) currently employs vehicle based paediatric response bags (PRBs) which are often poorly maintained due to a lack of predetermined minimum equipment guidelines. Instead, paramedics have chosen to use an individual response bag which they are responsible for maintaining regularly. However, the introduction of vehicle-based adult-only response bags is imminent. The purpose of this project was to explore barriers associated with paediatric patients and equipment in the prehospital environment and increase the usage of vehicle based PRBs within two ambulance stations.

Methodology & Theoretical Orientation: A quality improvement study using Plan; Do; Study; Act (PDSA) cycles was utilised to test and implement change ideas with repeated questionnaires as a feedback tool for approximately thirty ambulance clinicians.

Findings: Qualitatively, the need for further and continual training in relation to paediatric patients and barriers when using the existing equipment were identified.

Quantitatively, usage of the current PRB within the previous three months increased from 2% to 37% while self-rated confidence levels when using the current PRB increased from 14% to 73% due to implementation of change ideas.

Conclusion & Significance: The change interventions developed could standardise the structure of PRB and as a result increase staff confidence. Areas for further development include ongoing education for ambulance clinicians surrounding paediatric patients and associated equipment.

Image

Figure 1: Current Paediatric Response Bag Versus Redesigned Bespoke Prototype Paediatric Response Bag.



Recent Publications

1. Alharthy, N., Alfraih, E., Alenazi, A., Alaiban, R., Alanazi, R., Alsuwais, S. and Almutairi, M. (2021) 'A Comparison Survey of Paramedic Level of Confidence in Handling Paediatric Versus Adult Patients-Riyadh City.' *Research Square*. [Accessed on 8th November 2022] DOI number: https://doi.org/10.21203/rs.3.rs-1075845/v1.
2. Butler, M.W. and Adefuye, A.O. (2019) 'Assessing the knowledge of emergency medical care personnel in the Free State, South Africa, on aspects of paediatric pre-hospital emergency care.' *Pan African Medical Journal*, *32*(1), pp. 2-13.
3. King, L.L., Cheema, B., and Van Hoving, D.J. (2020) 'A cross sectional study of the availability of paediatric emergency equipment in South African emergency units.' *African Journal of Emergency Medicine*, *10*(4), pp.197-202.
4. Lammers, R., Byrwa, M. and Fales, W. (2012) 'Root causes of errors in a simulated prehospital pediatric emergency.' *Academic Emergency Medicine*, *19*(1), pp.37-47.
5. Owusu-Ansah, S., Moore, B., Shah, M.I., Gross, T., Brown, K., Gausche-Hill, M., Remick, K., Adelgais, K., et al. (2020) 'Pediatric readiness in emergency medical services systems.' *Pediatrics*, *145*(1).
6. Sanders, M. J., McKenna, K.D., Lewis, LM., and Quick, G. (2014) *Mosby's paramedic textbook*. 4th Ed., England: Jones & Bartlett Publishers

Photograph



Biography

Orla is a Paramedic who has a passion for improving patient care, clinical standards, staff confidence and satisfaction within the prehospital environment. This project was the basis of the final module of a MSc Emergency Medicine which she is currently completing. Orla has had years of experience within the prehospital environment to include non-emergency and emergency patient care services and has recently taken up the role of Clinical Practice Lead within NIAS. Within this role, the learning which has taken place through the completion of this project will be applied to further areas of clinical practice to improve standards and governance with the aim of maximising safe, effective, efficient high-quality person-centered care.

Email: orla.morrow@nias.hscni.net

Notes/Comments: