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2018

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ASSESSING FOR PREPARATION AND ADMINISTRATION ERRORS: A PROSPECTIVE OBSERVATION STUDY OF PAEDIATRIC RESUSCITATION SIMULATIONS

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ABSTRACT

Introduction

Very few studies have assessed drug preparation and administration errors during paediatric resuscitation. Current evidence suggests that medication errors in paediatrics is a serious problem. The aim of this study was to evaluate drug preparation and administration errors incurred during the simulated resuscitation of paediatric patients.

Methods

This was a prospective observational study performed in the emergency department of a tertiary level hospital . Teams consisting of two emergency doctors were tasked with preparing and delivering medication during simulated emergency scenarios. Preparation processes were video recorded. All vials, syringes and administered volumes were collected and analysed to determine the accuracy of drug preparation and delivery. Deviations from intended volumes were calculated.

Main Results

A total of 96 dosages were recorded from 24 participants. Most errors were identified in the withdrawal of drugs phase (prior to dilution) (13 of 95 doses had a >20% error), and the administration of medications phase (20 of 96 doses had a >20% error). Overall the median time taken to deliver each drug was 79 seconds (IQR 59, 100 seconds). The largest percentage errors were seen when a large syringe was used to withdraw or administer a small volume of medication.

Conclusion

The study clearly demonstrated that there were significant errors in the preparation and administration of medication. Training in the preparation and administration of paediatric medications should be available for all emergency nurses and doctors. Correct syringe choice may reduce these errors. Smaller syringes should be used for withdrawing or administering smaller volumes.