Evaluating Interruptions to Medication Administration in Paediatric Critical Care: An observational study

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“I don’t know why I made an error, I know that it was the wrong dose, I must have been distracted”
| Adrenaline 1:10,000 | 0.1 ml/kg (10 micrograms/kg). Maximum 1 mg (10 ml). | 100 micrograms | 1 ml | Maximum 10 ml dose | IV / IO |
Aim

To explore and discuss the impact that interruptions have during the medication administration process on PCC.
### Interruptions

- **Intrusions (Extrinsic stimuli)**: e.g., questions from family or health care professional
- **Distraction (Extrinsic stimuli)**: e.g., alarms, overheard conversation
- **Discrepancy (Intrinsic stimuli)**: e.g., lack of knowledge
- **Break (Intrinsic stimuli)**: e.g., self-imposed break to collect equipment

### Interruption Handling Strategy

- **Goal Activation**: The achievement of a goal will activate several steps e.g., procedural steps will automatically lead on to next step
- **Prospective Memory**: The ability to remember the task in the future
- **Multiple Resource**: Tasking performing two tasks concurrently
- **Engaging primary task**: Interruption by a high priority secondary task
- **Mediation**: The secondary task is delegated
- **Blocking**: The primary task is high priority and the secondary task is blocked

### Cumulative effect on Patient Safety

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Study design

• Non-participant observation
• University ethical approval
• Approvals from Trust R&I department
• Single PCCU
• All nursing staff invited to participate
• Thematic analysis
Results

- 57% of staff consented (n=40)
- 18 hrs 10mins observations July-August 2014

- 28 episodes (302 minutes) of medication administration
- 25/28 episodes encountered interruptions
- 81 interruptions observed

Once every 3.7 minutes an interruption occurs during medication administration
Types of interruptions

Nurses involved in process (n=25)

Nurses not involved in process (n=16)

Parents (n=6)

Prescription check (n=6)

Other patient condition (n=6)
Interruptions that result in positive patient outcomes are essential.
Timing of Interruptions

Prescription check and calculation (n=8)

Preparation of the medication (n=48)

Administration to the patient (n=15)
Limitations of study

- Small single centre study
- Observations only
- Researcher bias
- Potential Hawthorne effect
- Data saturation not achieved
Conclusion

• Interruptions occur in 89% of medication administration episodes
• 68% of interruptions were not essential to patient safety
• Further education and research needed
Impact on practice

• Rolling education programme for all staff

• Risk assessment

• Improving access to drug keys

• Baseline for future projects
References

• Bennett, J., Dawoud, D. and Maben, J. (2010) Effects of interruptions to nurses during medication administration Nursing Management 16(9)22-3
Thank you

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