Standard IV infusion concentration in paediatric and neonatal units: A national survey

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Background

- Errors with IV medication common (Jung et al., 2014).
- Children are exposed to up to three times the number of potentially dangerous medication errors compared to adults (Lehmann et al., 2006; Nichter, 2008).
- The ‘rule-of-six’, a weight-based method, error-prone (Hilmas et al., 2010; Irwin et al., 2008; Lehmann et al., 2006; Mackay et al., 2009).

- Electronic prescribing
- Bar-coding
- 'Smart' pumps
- Standard concentrations
Background

• The National Patient Safety Agency in the UK has advocated the use of standard concentration infusions to improve patient safety and care.

• National standards adopted for adult critical care patients in the UK.

• This study is part of a multi-professional collaborative working towards a national consensus on SC infusions in paediatric and neonatal care.
Study aims

• To explore the practice of standardised concentration usage for continuous IV infusions in paediatric and neonatal units in the UK, specifically:
  – how many units use standardised concentration for IV infusions
  – evaluate the variation and overlap of continuous IV infusion concentrations in practice
  – assess what devices are used to administer these infusions
  – how standardised infusions are provided
Methods

• Service evaluation designed as a quantitative descriptive survey.
• Self-administered questionnaire online.
• Paediatric and neonatal intensive care units in the UK surveyed through pharmacy, nursing and medical networks.
• Data collection – 45 days.
Results

• 33.5% response rate
• Responses received from 78 hospital units (82% from England)
Results
How many hospital units use SC for continuous IV infusions?

- **23** units provided information on presentation of SC infusions.
- **46** medications had standardised concentrations.
Results

Number of different concentrations for the infusions with the highest variability
Results

Number of units that have standardised each continuous medication infusion
Results
Administration and accessibility

• **16 (52%)** units use ‘smart’ pumps for administration, where the hospital unit has established continuous SC.

• **3 (9.7%)** use other computer software, infusion rate calculation.
Conclusion

• Response rate, limitation
• A wide variation of SC
• Just over half using ‘smart’ pump technology
• Infusions most commonly prepared on wards

This data is being used as the basis to enable workup of a national consensus statement on SC infusion through, facilitating adoption across the NHS.
Thank you for your attention
References