HUMAN FACTOR'S ROLE IN MEDICATION ERRORS:
DILUTING INTRAVENOUS MEDICATIONS AT HOSPITAL WARDS - A STUDY BASED ON INCIDENT REPORTS

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Background and importance
• Humans make mistakes, inadvertently when making poor decisions, being distracted or when not perceiving risk whilst managing medications.
• A human factors approach can be applied to address the causation of medication errors from a process point of view while addressing our error-prone human nature.
• Intravenous medications are complex to prepare and administer, and thus are at a higher risk of medication errors.

Results
• 14 incidents met the inclusion criteria and involved the dilution of morphine, oxycodone, adrenalin, and noradrenalin.
• Human factors that exposed the intravenous preparation process to risks were for example performing tasks with cognitive loads.
• Some dilution errors were caused by not knowing the exact concentration after dilution, which resulted in one infant receiving 7 mg of morphine instead of 0.7 mg.
• Most dilution errors led to overdosages and resulted in patient harm.

Conclusion and relevance
• Addressing human factors that contributed to medication errors should involve systemic measures which take in account how humans think and process information to avoid patient harm from dilution errors.

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