

Medication-related adverse events from the Emergency Medicine Events Register (EMER)

Learning from medication related incidents to improve Emergency Department care

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Background

Emergency Medicine Events Register (EMER) is an anonymous, protected website, available at www.emer.org.au, for Emergency Department (ED) clinicians and patients to report adverse events. It is likely that EMER is underused and its promotion, particularly to pharmacists, is likely to increase the number of medication-related event reports and provide further learning opportunities. Further details of EMER are at: <https://vimeo.com/116729616>

Objectives

To understand the medication-related incidents in the EMER database and the reporting patterns of ED clinicians.

Methods

Retrospective audit of medication-related incidents reported between December 2012 and June 2017

Results

- 61 cases with medication-related events were extracted from the register (see Table 1 for further details)
- 23 (37.7%) cases involved a high risk medication¹

¹As defined by the APINCHS acronym: Anti-infectives, Potassium, Insulin, Narcotics, Chemotherapy, Heparin and anti-coagulants, Systems

Example Incidents

Regular medications not charted

- Patient admitted to Short Stay Unit with no medication chart
- Became unresponsive and hypotensive
- Hydrocortisone and fludrocortisone had not been given -> Addisonian crisis.



Procedural sedation-analgesia procedures

- Verbal order to give midazolam
- Dose given as IV push in unmonitored area
- Patient found unresponsive.

Prescribed using brand name

- Tazocin[®] administered without nurse or doctor acknowledging that piperacillin was a penicillin type antibiotic
- Patient with known penicillin allergy developed anaphylaxis.



Non-standard concentration used

- Non-standard ketamine concentration prescribed
- Double dose was administered.

Table 1: Details of medication-related incidents

Parameter	Number (%)
Medication group (n=62)²	
Procedural sedation-analgesia	11 (17.7)
Endocrine	8 (12.9)
Anti-infectives	7 (11.3)
Haematological	6 (9.7)
Adrenaline	5 (8.1)
Cardiovascular	5 (8.1)
Analgesia	4 (6.5)
Intravenous fluids	3 (4.8)
Miscellaneous	13 (21.0)
Stage of medication use cycle (n=61)	
Prescribing	38 (62.3)
Preparation of dose	3 (4.9)
Administration	16 (26.2)
Monitoring	4 (6.6)

²In one case the event related to IV fluids and a cardiovascular medication

Key recommendations

- Follow best practice routine checking procedures
- Avoid errors as patients transition between settings of care
- Follow best practice procedural sedation-analgesia procedures
- Use guidelines for uncommon and complex medications
- Use standardized infusion concentrations
- Avoid verbal orders

Conclusions

- A retrospective audit of incidents recorded in the EMER database revealed 61 cases with medication-related events
- Incidents were classified by medication group and stage of error in medication use cycle and some themes were identified leading to key recommendations
- It is likely that with further promotion and utilisation of EMER further incidents will be reported and may contribute further learning opportunities