

# Highlighting the Need for Emergency Department Resuscitation Pharmacists

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## Background

The environment of the Emergency Department (ED) especially the resuscitation area, contributes to many factors that exacerbate medication error rate and severity.<sup>1-4</sup>

The resuscitation room (known as resus) is where critically ill patients are taken on admission. It is a high-risk environment where many of the factors listed above can be observed. Moreover, due to the time sensitive nature of clinical decisions being made in resus the potential for medication errors is increased. However, even with the increased risk of medication errors, the resuscitation room does not traditionally have a dedicated pharmacist.

A group from the PAH ED recently published a retrospective descriptive study using quantitative data of all medication errors reported through the hospital's electronic incident management system between 1 January 2010–31 December 2015. A total of 497 medication errors were reported between 2010–2015.<sup>17</sup> High-alert medications were involved in 235 errors: narcotics and sedatives, antibiotics, anticoagulants, insulin, potassium and other electrolytes, infusion pumps and immunosuppressants. 10.6% of these errors occurred in the resuscitation rooms. Eighty-six errors (21%) caused patient harm. The harms reported were agitation, drowsiness, sedation, dystonia, pain, Red Man's Syndrome, hypotension, hypertension, bradycardia, bradypnoea, hypoglycaemia, hyperglycaemia, extravasation, nausea, diarrhoea and oliguria.<sup>17</sup>

Pharmacists can improve medication safety in ED by reducing errors, reducing time to administration of critical medicines and improving appropriate antibiotic dosing rates.<sup>5,7</sup> All of the literature documenting the role of ED pharmacists on the care of trauma, resuscitation or critical care patients is in the US setting.<sup>5-16</sup> They found that pharmacists improve care for these critically ill patients. This study will measure the impact of an ED pharmacist's presence on medication errors, time to administration of critical medications and appropriate use of medication in the resuscitation area of an Australian ED.

The PAH was the first hospital in Queensland to implement a hospital-wide electronic prescribing system in March 2017 – the Medications Management, Anaesthetics and Research Support (MARS) system. This audit was conducted due to reported and anecdotal problems relating to medication documentation on the MARS system.

## Aims

To identify discrepancies between verbal orders and retrospectively charted medications during resuscitation events in the emergency department since the implementation of the Integrated Electronic Medical Record (ieMR) and highlight the importance of a pharmacist in the emergency resuscitation team.

## Methods

A sample of 62 resuscitation unit patients were randomly selected from a report of all patients admitted directly from ED to an inpatient ward between June to August and October to December 2017. Information was gathered retrospectively from the ieMR. Data was collected on the verbal orders and compared with retrospectively charted medications as reflected in the MAR records.

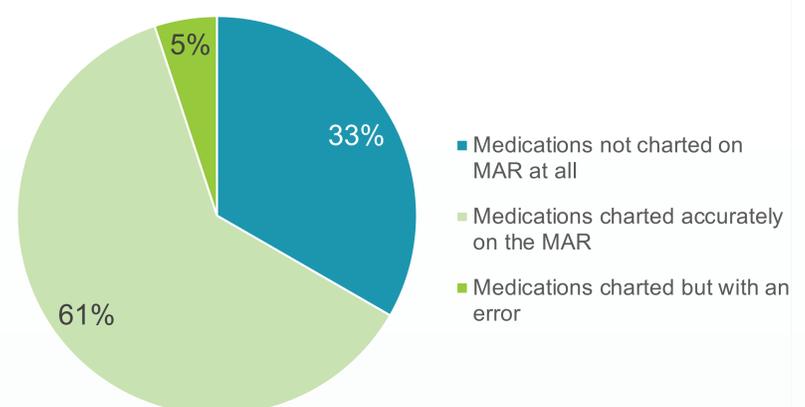
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## Results

A total of 54 medications were administered to the sample of 62 patients. It was found that 18/54 (33%) medications documented as administered in the electronic progress notes during the resuscitation event were not charted retrospectively into the electronic medication administration record. The most common medicine not charted was fentanyl (6/18). Examples of other drugs not charted were ketamine (3/18), propofol (1/18), prothrombinex, and midazolam (1/18). 6% (3/54) of medications administered were charted incorrectly on the MAR when compared with the verbal orders recorded on the progress notes at the time of resus.

### Accuracy of Medication Charting in Resus



### Medication Administration and Charting in ED resus

Medication documented in notes, not charted accurately on the MAR		Medication documented in notes and charted accurately on the MAR	
Medications not charted on MAR at all	18	Medications charted accurately on the MAR	33
Fentanyl	6	Fentanyl	7
Propofol	1	Propofol	1
Ketamine	4	Ketamine	3
Midazolam	1	Midazolam	0
Morphine	1	Morphine	3
Others	5	Others	19
Medications charted but with an error	3		
		<b>Total number of medications given in resus</b>	<b>54</b>

## Conclusion

A pharmacist within the resuscitation team in the emergency department would reduce medication errors by prospectively charting medications directly into the ieMR system and increase the accuracy of retrospectively charted verbal orders. Pharmacists would be an asset within the team and could be involved in intravenous medication preparation, drug calculations and drug information.