

## **Improving medication prescribing in intensive care: the introduction of an electronic system**

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### **Background**

In close liaison with a clinical development team, a prototype of an electronic prescribing tool has been developed that is based on practices widely adopted by clinicians in the intensive care unit (ICU) which seeks to reduce prescribing errors.

### **Assessment of problem**

To form an understanding of the prescribing errors that occur in ICU an audit was carried out to identify deviations from local prescribing procedures.

Prior to introducing the system to ICU a pilot study was carried out to investigate whether the electronic system would reduce the errors identified in the audit. A patient scenario was created where participants were given ten tasks. Participants were randomly split into two groups with one group performing tasks on the electronic system followed by the paper system and vice versa for the other group.

The paper and electronic prescription charts created from the study were checked against 13 criteria derived from the local hospital policy.

### **Results of assessment**

Compared with the established criteria the electronic system had an overall compliance of 84.23% compared with the paper system which had a compliance of 63%. The electronic system demonstrated an improved level of compliance against 11 of the 13 criteria. The two criteria where there was a drop in compliance highlighted a flaw with the interface and a requirement that was not fully identified.

Feedback from participants suggested that the electronic system produced a positive user experience and was favoured by the clinicians, who considered it "very user friendly and intuitive".

### **Lessons and messages**

Applying usability techniques and engaging users throughout the design and development process has resulted in a system favoured by the users that demonstrates a reduction in prescribing errors. Adopting this iterative and responsive approach has also led to the users developing a strong sense of ownership for the system. [300 words]

Standard Required	% Charts with non compliances	
	Electronic charts	Paper charts
Discontinued medicines procedure followed	100	100
Signed by prescriber	100	95
Each entry must be dated	100	95
Dosage form documented	100	82
State route of administration correctly	100	64
Legible	100	59
No abbreviations	100	41
Time of administration indicated	95	73
Appropriate units stated	95	5
Dose stated	91	86
Generically stated where appropriate	64	18
Infusions – infusion rate and concentration should be stated	45	82
'As required' doses must have a dosing frequency, indication and maximum daily dose stated	5	19

**Figure 1 Results from pilot study**