Critical Care Transfers: An Opportunity to Reduce Medication Errors

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Nearly half of all patients discharged from critical care (CC) to a ward experience a medication error[1]

The most common errors being:

- **Unintentional discontinuation of medicines for chronic conditions**
- **Inappropriate continuation of CC specific medicines[2,3]**

These medication errors can be life threatening if not rectified. Priority medicine reconciliations completed by pharmacists for these transferred patients should eliminate these errors yet they still occur[4,5]. This quality improvement project aimed to determine why these errors happen and implement measures to prevent their occurrence.

A distributed questionnaire found **56%** of respondents felt inadequate training was provided regarding the review of CC transferred patients, and these patients were difficult to differentiate from other patients, leading to their lack of prioritisation.

Implementing a solution

Analysis of the responses led to the development of a critical care transfer 'checklist' *(figure 1)* to aid the review of step down patients. Teaching was devised for and 6 pharmacists to highlight an effective way to review CC transfer patients using the created checklist.

All attendees reported the teaching improved their knowledge and confidence to review these patients. They felt the developed checklist was a useful resource to refer to and made the review process clearer. The checklist now been approved for wider distribution across the hospital trust. Modifications are going to be made to the electronic handover platform currently used by the trust to make it easier to differentiate new patients from CC transfer patients.

Outcomes

The main factors identified which precipitate medication errors in CC transfer patients was ultimately the lack of training and the lack of clarity surrounding who was a critical care transfer. The measures implemented target both of these factors and it is hoped that upon future analysis the long-term effect of these measures is the overall reduction medication errors among these patients.

REVIEWING CRITCAL CARE STEP DOWN PATIENTS

Review pre – admission medications
If these have been stopped, was this intentional? Are there plans to restart them?
e.g. blood pressure medication stopped whilst on blood pressure support, nephrotoxic medications

Review newly started medication from critical care
What were the indications for these, are they still indicated? Can they now be stopped?
Have infusions from critical care been stopped appropriately on eMeds?
Is monitoring in place which is required?
Are all the PRNs appropriate for ward use?

Medications commonly initiated on critical care

Medication	Critical care use	Considerations when stopping
Gastric acid suppressants e.g. PPIs, H2 receptor antagonists	Stress ulcer prophylaxis	Confirm indication i.e. not taking pre – admission or started for GI bleed If taking for gastro-protection have steroids/aspirin etc been stopped? Can be stopped if patient is on full feed/ eating and drinking
Antipsychotics e.g. Haloperidol, olanzapine	Treatment of delirium	Confirm whether still required, consider if started by psychiatry Confirm weaning plan/stop, if unsure contact critical care team
Benzodiazepines e.g. Midazolam, lorazepam	Used for agitation or to enable weaning from continuous sedation	Confirm whether still required, consider if started by psychiatry Confirm weaning plan/stop, if unsure contact critical care team
Clonidine	Used for agitation or to enable weaning down of continuous sedation	Wean down and stop over 48 hours
Diuretics e.g. Furosemide	Used to adjust fluid balance, pulmonary oedema	Review ongoing need and stop if no longer required
Opioids e.g. Oxycodone, morphine	Used for pain and breathlessness	Review patient pain scores and PRN usage, consider tapering down
Hypnotics e.g. Zopiclone, zolpidem	Used for insomnia	Confirm weaning plan/stop, if unsure contact critical care team

Figure 1: *Critical care transfer checklist*

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