IMPROVING PATIENT SAFETY BY REDUCING THE INCIDENCE OF MISSED MEDICATIONS IN ELECTIVE SURGICAL PATIENTS

A QUALITY IMPROVEMENT PROJECT

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1 INTRODUCTION

Following a number of patient safety incidents within elective surgical admissions we sought to improve prescribing practices in elective admissions and take steps to improve similar errors recurring in the future. Whilst on shift, junior doctors are regularly contacted by nursing staff to prescribe regular medications that have been missed from their chart. We found these errors particularly affected frail patients with multiple medications or those on medications that need to be given in a timely manner; for example Parkinson's medications, that if missed could have negative outcomes for the patient.

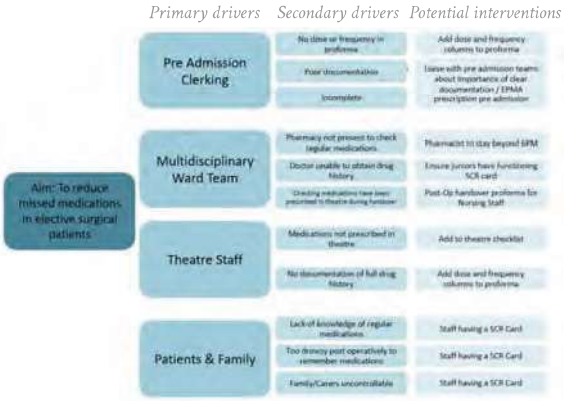


Image 1. Driver diagram

By scrutinizing patient pathways, we identified both primary and secondary drivers behind the problem (Image 1) and from this, identified several potential interventions. Of these, following discussion with the pre-admission team, ward staff and theatre staff, we identified four that would be reasonable and achievable interventions to make:

1. Add dose and frequency columns to surgical pre-admission proforma.
2. Pre-admission team to set up electronic prescription prior to admission.
3. Ensure all junior doctors have a functioning summary care record (SCR) card.
4. Prompting junior staff to ensure the correct medications are prescribed via induction, teaching and visual reminders.

2 METHOD

To investigate whether an elective general surgical patient had missed a dose of their regular medication we looked at their electronic prescribing record to determine what medications had been prescribed and what date and time this had occurred. We then cross referenced this with the medicines reconciliation completed by the pharmacist for that admission. We had a cut-off time of 22:00 on the day of admission as a missed dose time, as the majority of regular medications are usually given by this time. We collected this data for 4 weeks before cycle 1, and after every cycle from there on. Changes were then made using iterative PDSA cycles.

The first cycle was to change the medication table in the pre-admission booklet to include columns for both dose and frequency (Image 2). This was to ensure that this information was not omitted during the pre-admission clerking.

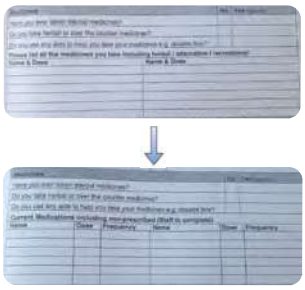
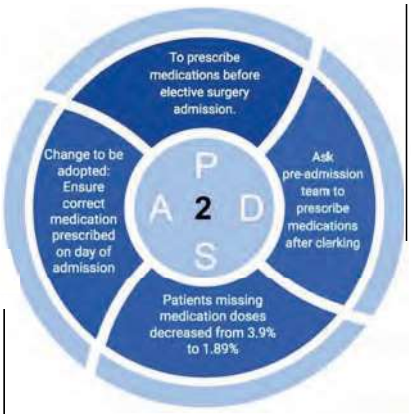


Image 2. This illustrates the changes made to the proforma, with frequency and dose columns added

The second cycle was to work with the pre-admission team to prescribe the patient's medications before they were admitted for their elective operation.

Finally, cycle 3 consisted of appropriate training during induction for foundation year doctors, ensuring they have a SCR card, as well as visual prompts i.e. reminder poster in the surgical office (Image 3).

Image 3. The poster reminding junior doctors to ensure patients have their medications prescribed



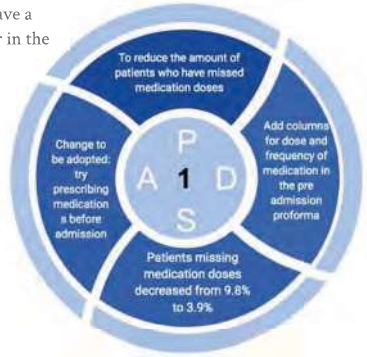


Image 4

Plan, Do, Study Act diagrams depicting each cycle undertaken. First (top right), second (left) and third (bottom right)

3 RESULTS

Prior to any intervention, we checked 153 patients' charts and of those, **9.8%** missed a dose of medication.

After changes to the proforma (Cycle 1) the percentage of missed medication doses fell to **3.9%** in the 128 patients in that month; an improvement of 60%.

By prescribing medications pre-admission (Cycle 2), results showed two patients missed doses of medication of the 106 elective patients, just 1.89% of the cohort.

Results after Cycle 3 showed that of the 137 patients admitted, 0% missed a medication dose.

Overall we have seen a significant reduction from 15 patients a month missing a dose to none.

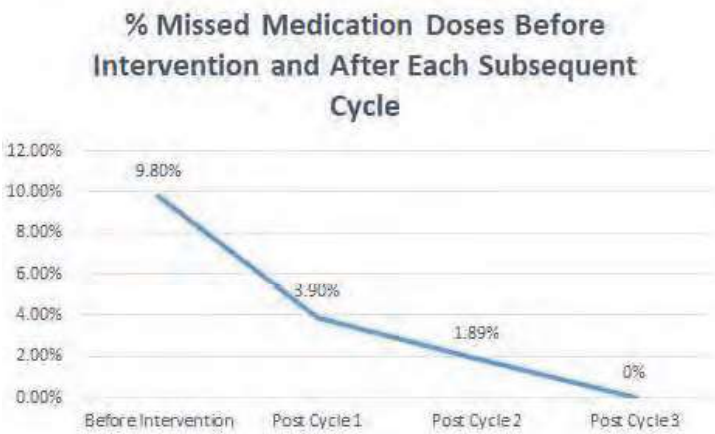


Image 4. A line graph showing the % of missed medication doses over a one month period, before any interventions, and then after each subsequent intervention.

4 GOING FORWARD

Decreasing the number of delayed prescriptions to 0% after the three completed cycles was a more significant improvement than expected. Of these, cycles 1 and 2 have been deemed to be sustainable as these are implementations that can easily remain in place.

This last cycle however, has been deemed to be unsustainable. Every four months, there is a new rotation of junior doctors and this change would require regular teaching at every four monthly induction. The authors cannot guarantee availability and therefore cannot guarantee each cohort will receive the same training. To alter this, the authors propose longstanding changes such as including this information in a junior doctor induction booklet.

We aim to show that our interventions are sustainable and show lasting improvement by repeating one further data collection in 6 months time when all interventions have been in place for a significant amount of time.