

Scaling up a Digital Intervention for Buprenorphine Safety; from Local to State-wide

Authors: Liane Ward-Panckhurst¹, Charisse Yap², Rebecca Schull³

1. Pharmacist, Medication Safety Officer, Sunshine Coast University Hospital
 2. Clinical Nurse Consultant, Safety Improvement Support Officer
 3. Pharmacist, Clinical Informatics Subject Matter Expert
- All correspondence to liane.ward-panckhurst@health.qld.gov.au



Background

The Sunshine Coast Hospital and Health Service (SCHHS) is the major provider of public health services, health education and research in the Sunshine Coast, Gympie and Noosa local government areas of Queensland. It provides services through the Sunshine Coast University Hospital, Nambour General Hospital, Caloundra Health Service, Gympie Hospital and Maleny Soldiers Memorial Hospital with a clinical workforce of approximately 7000 staff.

Two hospitals have transitioned to an electronic medication management system (eMM) and work has commenced to rollout the eMM across all sites.

An increase in locally reported medication errors relating to buprenorphine prescribing in the eMM system was identified. It related to prescriptions for analgesia at the opioid withdrawal dose (2mg), ten times higher than the analgesic dose (0.2mg).

Buprenorphine medication errors and near misses may not be well recognised and reported in eMM sites across the state.

Objective

To decrease medication errors associated with eMM buprenorphine prescribing to reduce the risk of patient harm.

Actions

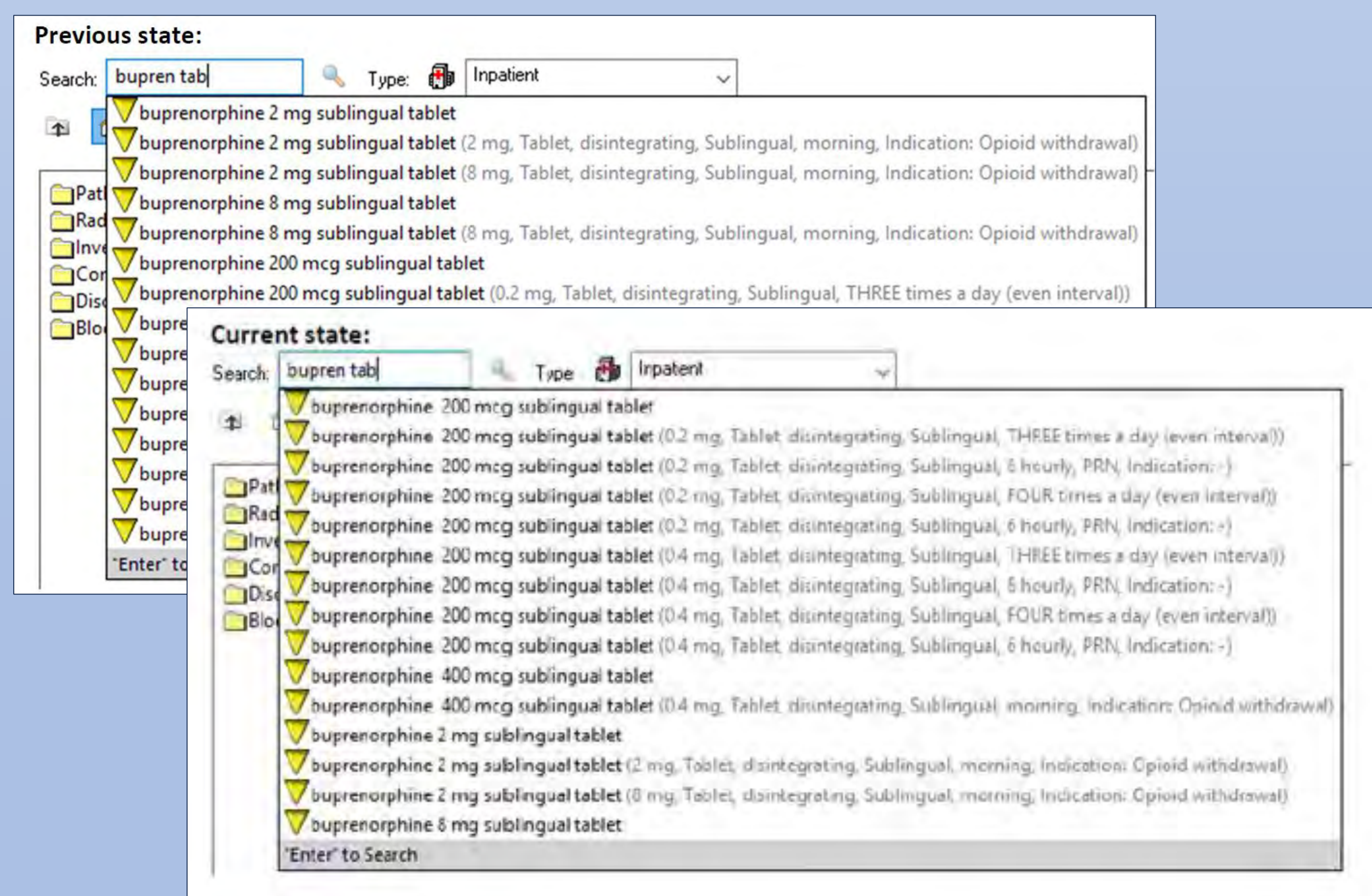
A multidisciplinary team conducted a rapid review of each near miss error and a comprehensive review of 2 serious errors. This included a simple cognitive walkthrough to analyse task factors involved and analysis of eMM real-time recordings to observe and understand prescriber workflow and selection processes.

Local findings were escalated to the state-wide eMM team requesting optimisation of buprenorphine 'Smart Search' functionality via naming convention to reduce prescriber selection error

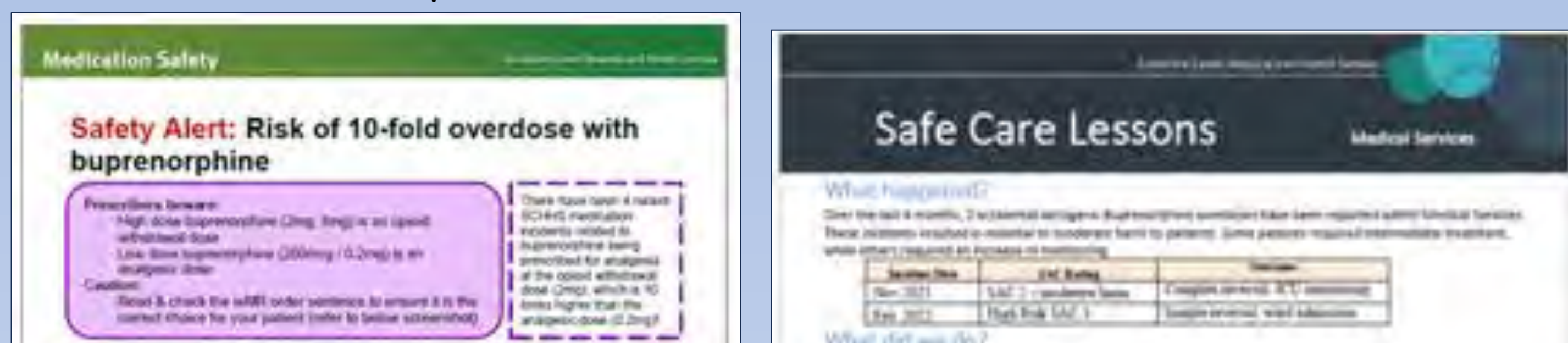
Additional local actions included a Medication Safety flyer; electronic S8 safe 'alert'; rationalisation of stock availability; incorporating learnings into eMM prescriber refresher sessions and clinical workforce education and awareness

A state-wide eMM change was progressed to add a space to the buprenorphine 0.2mg order sentences so the order for analgesia would appear above those for opioid dependence

EMM screenshots of buprenorphine order sentences pre and post system change



Examples of additional local actions to decrease buprenorphine prescribing errors and reduce the risk of patient harm



Results

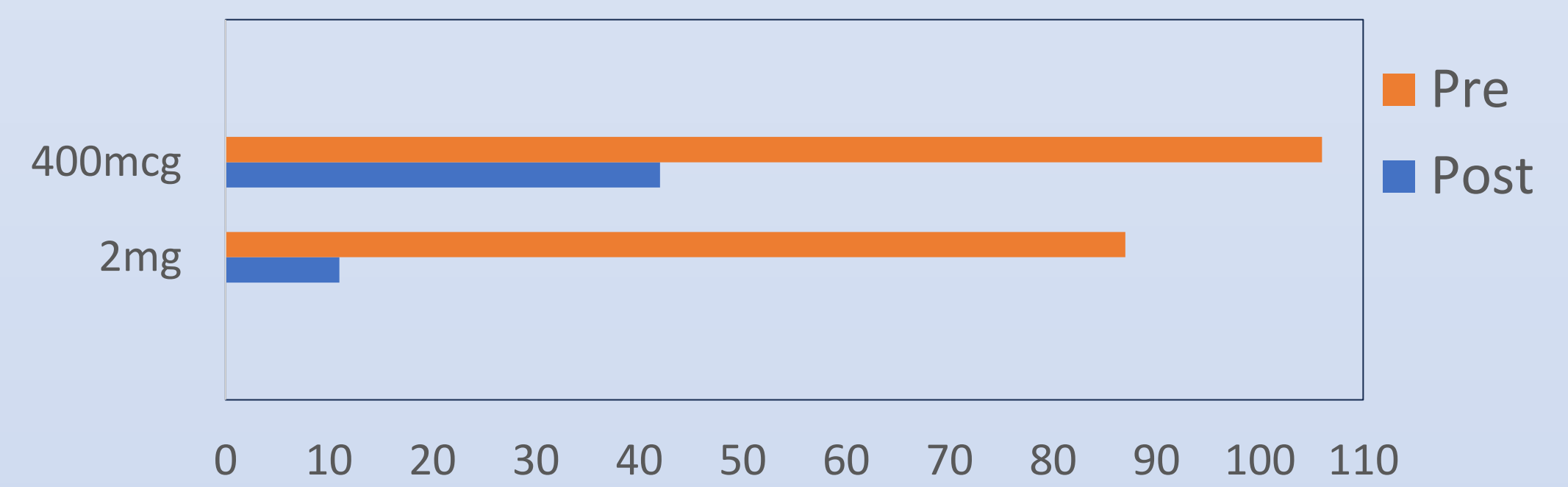
In the 3 months post implementation of the system change, state-wide eMM prescribing data showed a 57.5% reduction in inappropriate ordering of buprenorphine opioid withdrawal doses for analgesic indications.

State-wide data comparison 3 months pre and 3 months post implementation of the order sentence system change

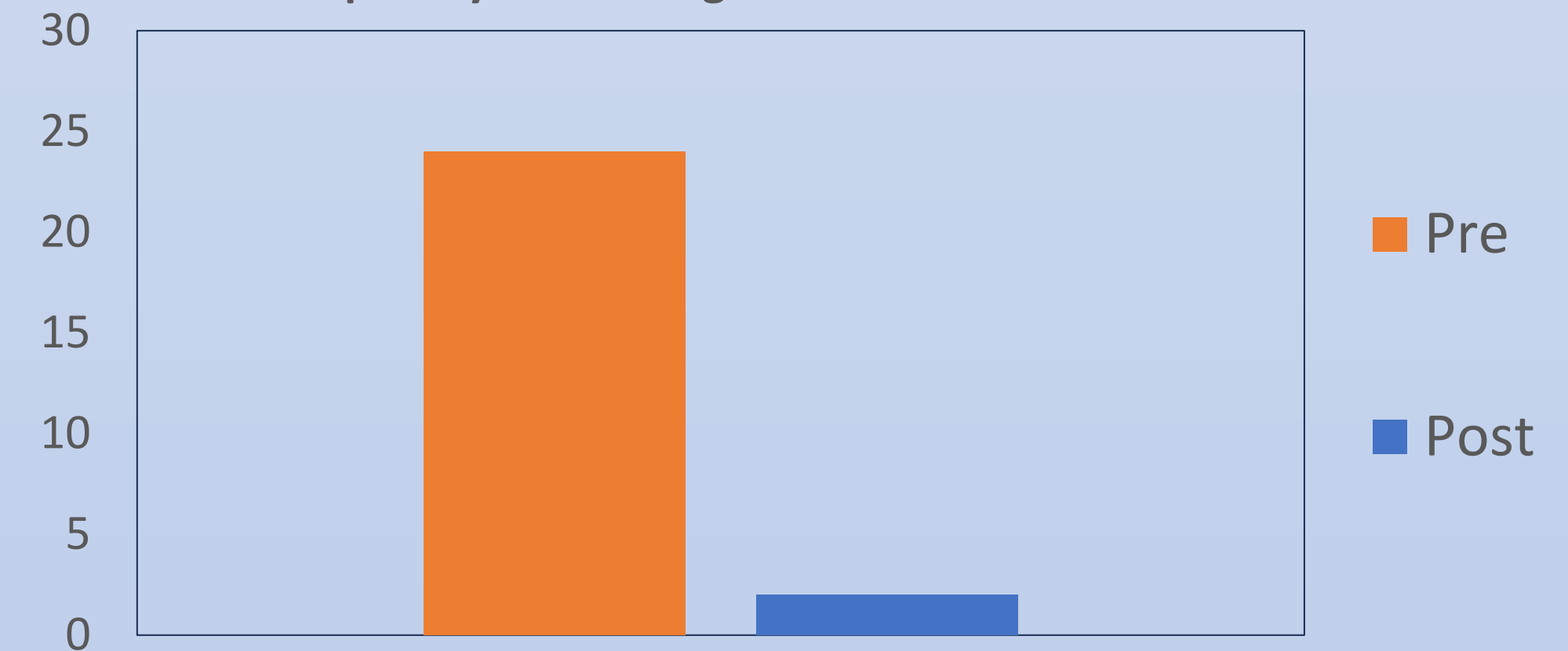
Total # of orders for higher dose buprenorphine (400mcg, 2mg, 8mg) pre and post system change – state wide data



Total # of orders with 'pain' as indication that may be inappropriate pre and post system change – state wide data

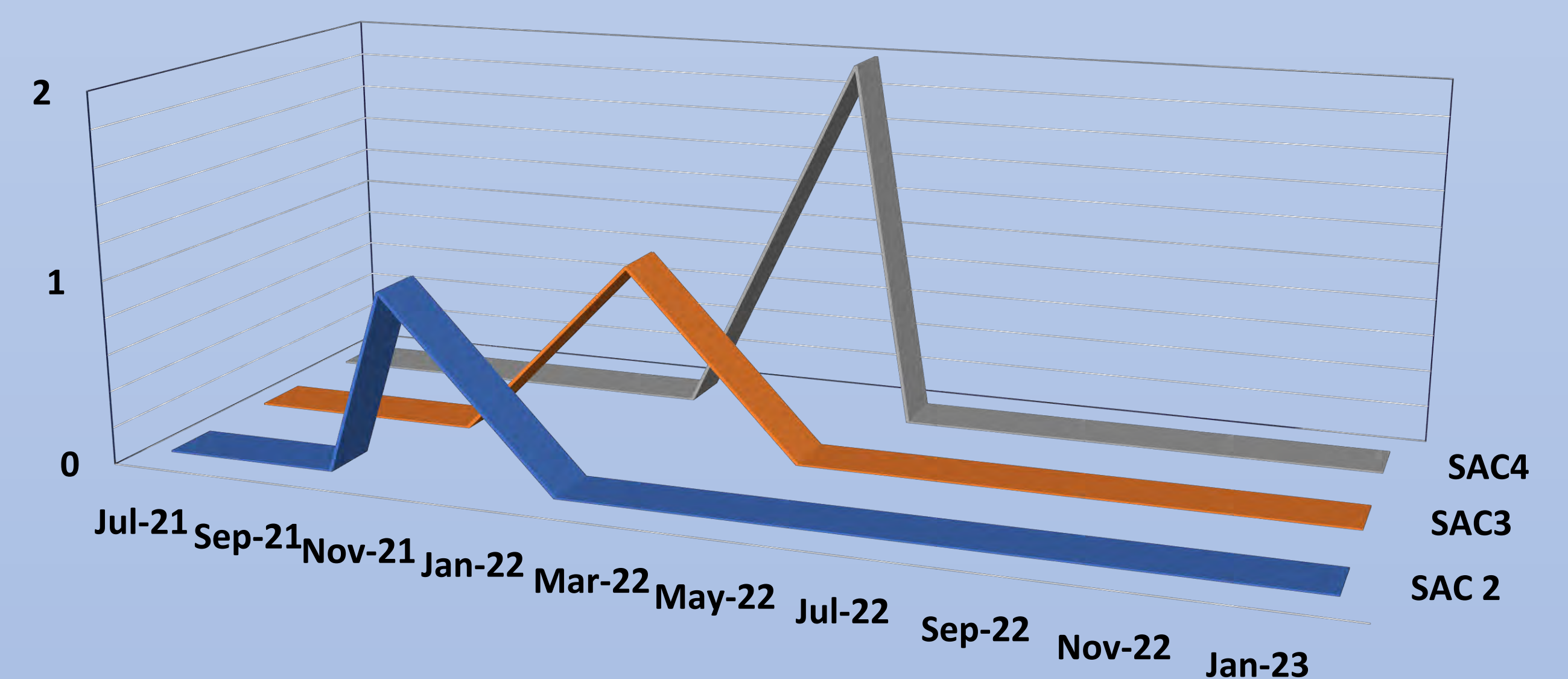


Total # of 2mg ordered with dose edited to give a lower dose OR with comment added to give a lower dose i.e. 200mcg or 0.2mg pre and post system change – state wide data



Local clinical incident data showed no additional buprenorphine errors in the 9 months post implementation of the eMM system change and additional local actions.

Number of Buprenorphine Clinical Incidents pre and post Jun 22 EMM system change and additional local actions – local data



Discussion

A dynamic and multidisciplinary approach to the review of these medication errors enabled the local team to better understand the organisational context and changes to user workflow to potential failure criteria. This resulted in medium to high leverage recommendations leading to a state-wide change and a significant number of potential errors avoided.

Conclusion

Significant potential and actual patient harm associated with buprenorphine medication errors has been avoided with the reduction of inappropriate prescriptions both locally and state-wide.