

# A Retrospective Observational Cohort Study of Prescribing & Administration of Psychotropic Medications in Elderly Patients with Delirium

W. Livitsanos<sup>1</sup> M. Campbell<sup>1</sup> A. Livori<sup>1</sup> R. Dimond<sup>1</sup>

<sup>1</sup>. Pharmacy Department, Ballarat Health Services

## Background

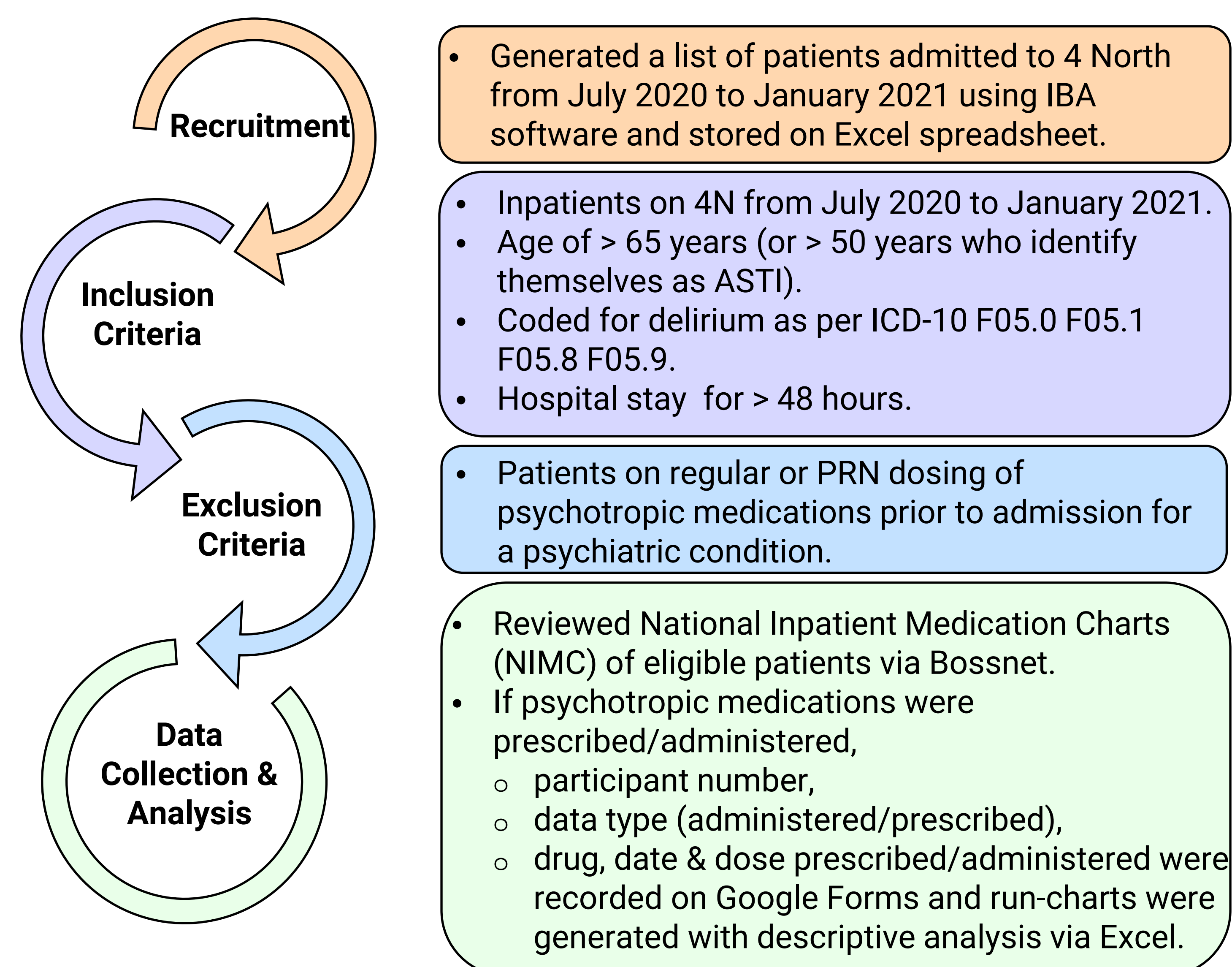
Approximately 10 to 18% of Australians aged 65 years or older have delirium when admitted to hospital and a further 2 to 8% develop delirium during hospital stay.<sup>1</sup> The cause of delirium is unclear, however, it can be triggered by certain medications, acute illnesses, surgery, or drug withdrawal.<sup>2</sup> Although non-pharmacological management is the first and foremost choice for delirium, psychotropic medications are widely used as first-line intervention in clinical practice.<sup>3</sup> Meta-analyses conducted by Neufeld et al demonstrated that antipsychotics are not associated with reduced duration of delirium, length of hospital stay or mortality.<sup>4</sup> A systemic review conducted by Li et al indicated that benzodiazepines are associated with increased sedation and confusion.<sup>3</sup> Understanding the trends of prescribing and administration of psychotropic medications in patients with delirium is imperative in order to inform guideline development and assess quality of prescribing and administration of psychotropic medications.

## Aim

To understand the trends of prescribing and administration of psychotropic medications in elderly patients with delirium from July 2020 to January 2021.

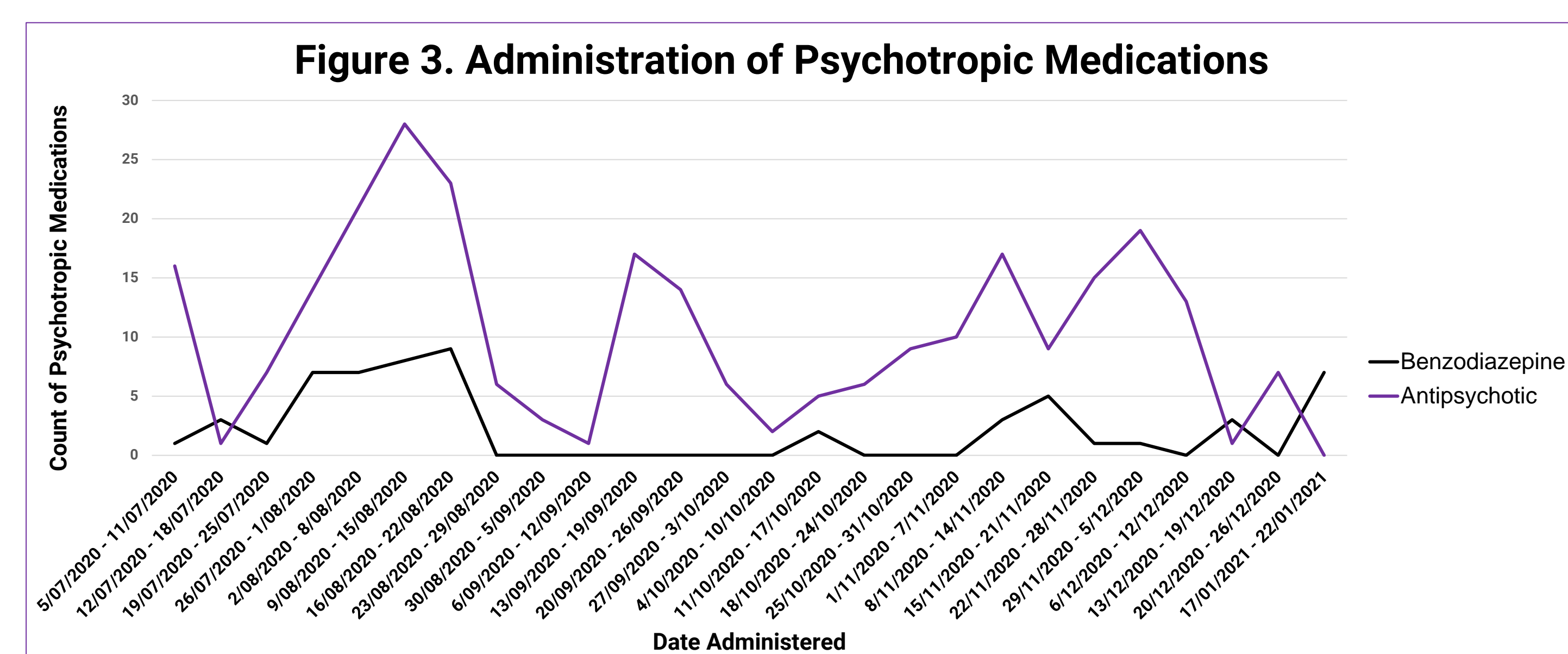
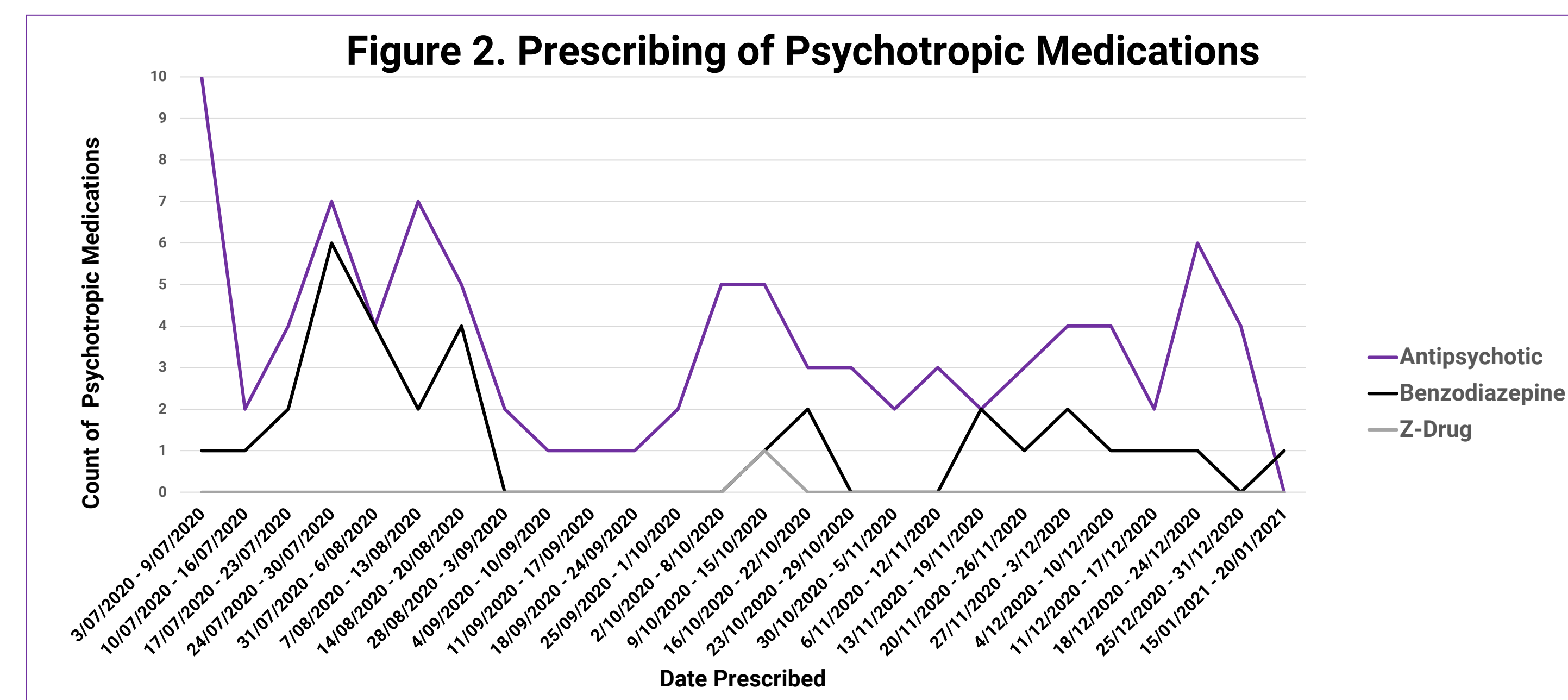
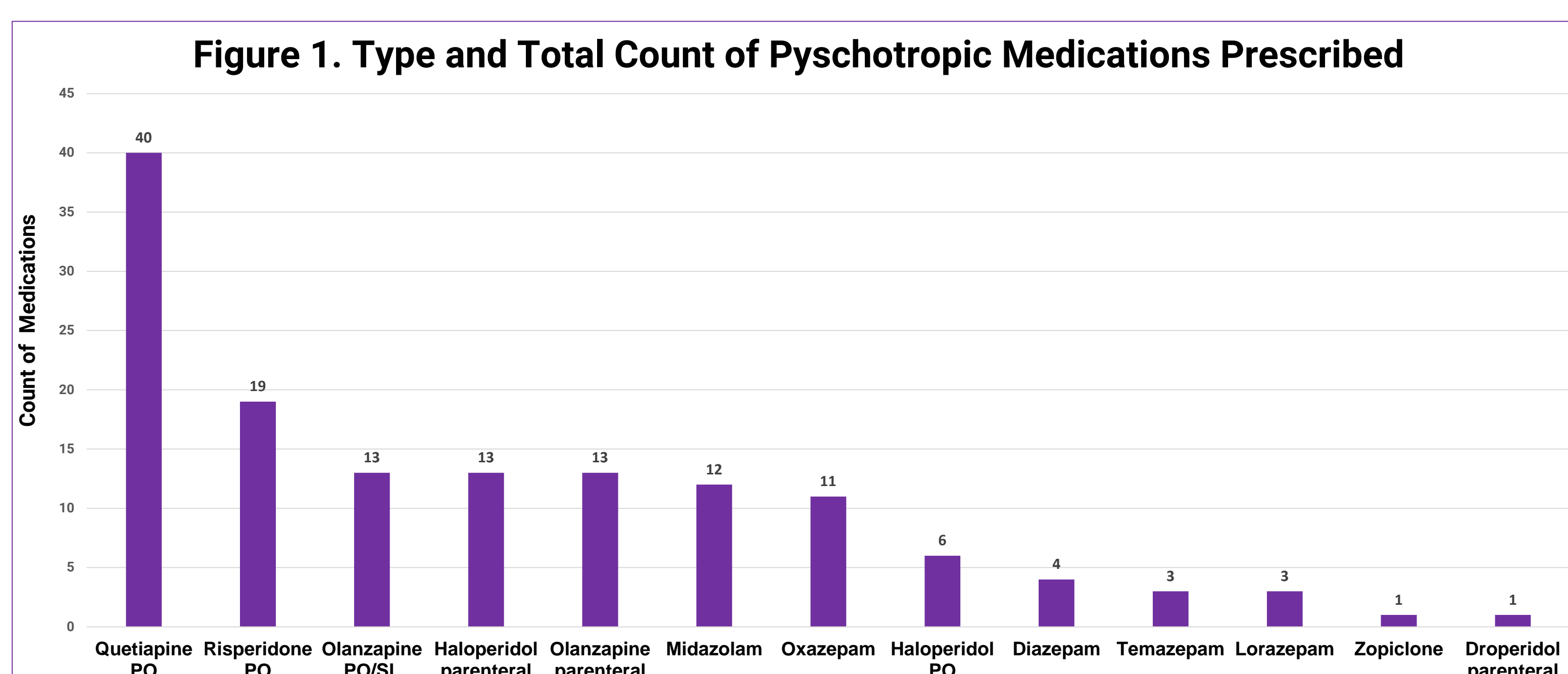
## Methods

A retrospective observational cohort study was conducted in a regional public hospital in the Grampians region of Victoria, Australia. In the study, psychotropic medications are defined as antipsychotics (chlorpromazine, droperidol, haloperidol, olanzapine, quetiapine, and risperidone), benzodiazepines and z-drugs (zopiclone, zolpidem).



## Results

The sample size resulted in 64 admissions with 139 prescriptions and 362 administrations of psychotropic medications from July 2020 to January 2021.



## Discussion

According to Figure 1, Figure 2 and Figure 3, antipsychotics were prescribed and administered in preference to benzodiazepines and Z-drugs in the management of delirium. Of the antipsychotics prescribed, Figure 1 demonstrates that the most prescribed treatment was quetiapine followed by olanzapine, risperidone, then haloperidol. However, BHS delirium guideline recommends avoiding the use of olanzapine due to its strong anticholinergic effect and its high risk of triggering delirium.

Despite antipsychotics being prescribed in preference to benzodiazepines, Figure 2 demonstrates a positive and negative 'trend' that is parallel between the two groups.<sup>5</sup> One possible explanation is that benzodiazepines were prescribed early, without the regimen being further escalated to include additional antipsychotics, as per the BHS delirium guideline.

There are two-time frames when a greater number of benzodiazepines were administered compared to antipsychotics, although larger number of antipsychotics were prescribed. In normal circumstances, administration of PRN medications are nurse initiated. Therefore, potential reasoning behind the two incidences may be that nursing staff were more familiar with or favour benzodiazepine use in practice. However, further investigation is required as practice habits and/or changes of nursing staff was not assessed in the study.

One of the limitations of the study is that the population sampling of the project utilised patients admitted to one ward in one hospital. Therefore, this data may not be generalisable to other forms of acute wards or health services. Additionally, it is possible that psychotropic medications may have been prescribed and/or administered for other conditions other than delirium despite patients having delirium. The most likely example of this being the use of diazepam in alcohol withdrawal protocols and midazolam in end-of-life care protocols; both of which may have led to misclassification bias.<sup>6</sup>

## Conclusion

The study produced data on psychotropic medication use in patients with delirium and demonstrated potential breach of the hospital's internal guidelines of delirium. Data of the study will inform further practice change implementation and use as a comparator set following implementation of a delirium risk prevention program.

## References

1. Australian Commission on Safety and Quality in Health Care. Delirium Clinical Care Standard [Internet]. ACSQHC 2021 [cited 2022 May 18]. Available from: <https://www.safetyandquality.gov.au/our-work/clinical-care-standards/delirium-clinical-care-standard#:~:text=About%2010%E2%80%9316%25%20of%20Australians,during%20their%20hospital%20stay.>
2. Therapeutic Guidelines. Delirium [Internet]. Therapeutic Guidelines Ltd; 2021 Mar [cited 2022 Mar 31]. Available from: [https://tgldcdp.tg.org.au/acs.hcn.com.au/view/Topic?topicfile=delirium&guidelineName=Psychotropic&topicNavigation=navigateTopic%20c\\_d1e117](https://tgldcdp.tg.org.au/acs.hcn.com.au/view/Topic?topicfile=delirium&guidelineName=Psychotropic&topicNavigation=navigateTopic%20c_d1e117)
3. Li Y, Ma J, Jin Y, Zheng R, Mu W, Wang J, Si J, Chen J, Shang H. Benzodiazepines for treatment of patients with delirium excluding those who are cared for in an intensive care unit. *Cochrane Database Syst Rev* [Internet]. 2020 [cited 2022 Aug 27]. (2). Available from: <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD012670.pub2/full> doi: 10.1002/14651858.CD012670.pub2
4. Neufeld KJ, Yue J, Robinson TN, Inouye SK, Needham DM. Antipsychotics for Prevention and Treatment of Delirium in Hospitalized Adults: A Systemic Review and Meta-analysis. *J Am Geriatr Soc* [Internet]. 2016 [cited 2022 May 17]; 64(4): 705–714. Available from: <https://doi.org/10.1111/jgs.14076>
5. Provost LP, Murray S. *The Health Care Data Guide: Learning from Data for Improvement*. John Wiley & Sons, Incorporated [Internet]. 2011 [Cited 2022 Aug 27]. 307–368.
6. Catalogue of Bias. Misclassification bias. Centre of Evidence-Based Medicine; 2022 [cited 2022 Aug 27]. Available from: <https://catalogofbias.org/biases/misclassification-bias/>