

A Perspective of Patients' Pharmacological Journeys

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Aim

To minimize the morbidity associated with anti-psychotics and anti-cholinergics in Fraser Health patients with delirium by 2019

Background

- Part of the larger regional goal to improve delirium care in FHA and Aligned with the BC Ministry of Health 2019/20 – 2021/22 Service Plan
- Delirium has been shown to affect approximately 30% of acute medical inpatients, resulting in longer length of hospital stay and earlier admission to nursing homes^{1,2}
- We wanted to investigate if our larger project reduced the use of these medications

Anti-psychotics

- should only be used when non-pharmacologic treatments are exhausted
- high dose with long duration can cause unwanted harms

Anti-cholinergics

- can precipitate delirium
- commonly prescribed for other purposes
- Anti-cholinergic Cognitive Burden Score (ACB) is a standardized tool to represent the negative impact anti-cholinergics have on cognition³
- quetiapine (ACB = 3 = HIGH)

Project Design & Strategy

Drivers

Always employ non-pharmacologic treatment

Limit drug use to symptom management

Recognize delirium resolution

Change Ideas

A. Use standardized tool

A. Educate team
B. Use standardized tool
C. Measure anti-psychotics and anti-cholinergics administered

A. Discontinue anti-psychotics and anti-cholinergics

Measures:

- Pre-admission, Admission and Post-admission prescriptions
- Discharge disposition

- Every other month from Jan 2017 to May 2018, 10 charts were randomly selected from coded data at each of 4 sites (CGH, ERH, RCH, SMH)
- ACB score was adopted to individualize the potency of each anti-cholinergic on delirium patients

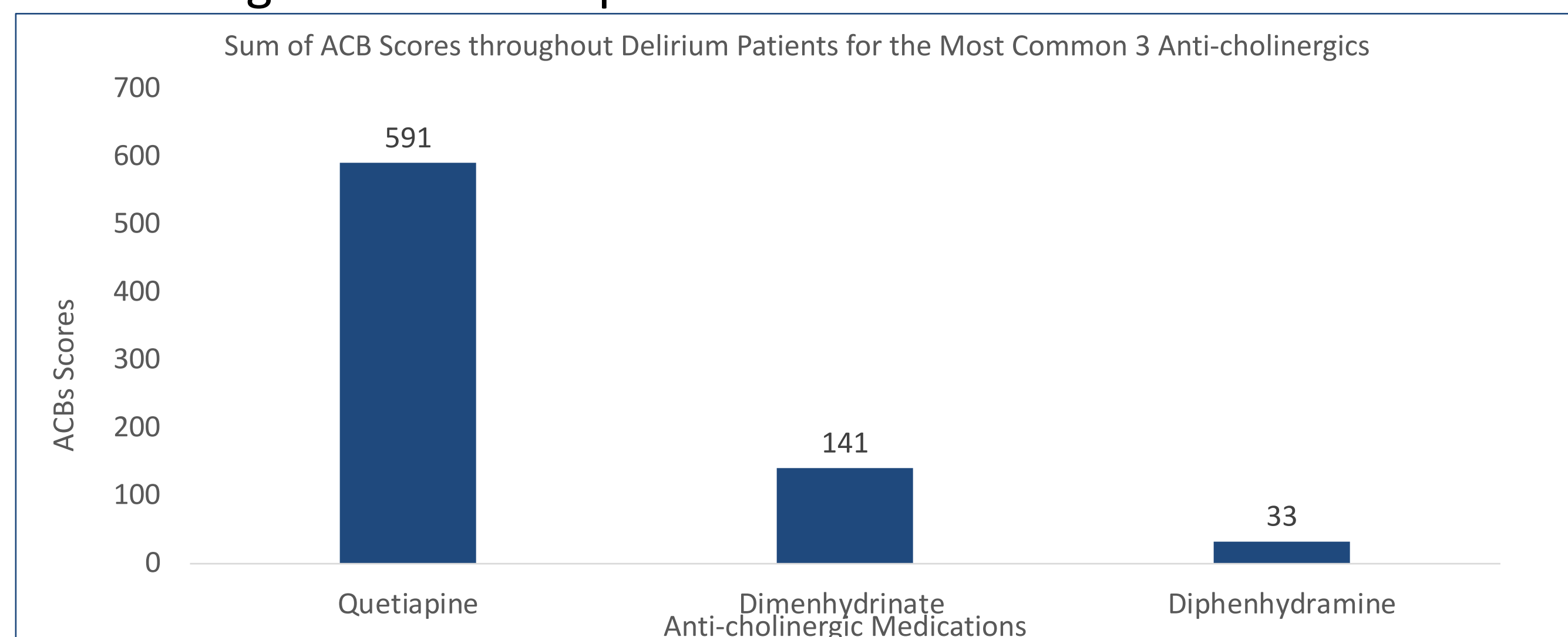


Figure 1. Sum of ACB Scores throughout Delirium Patients' Journeys for the Most Common 3 Anti-cholinergics

Acknowledgements

FHA PQI, ERH Pharmacy Department, FHA Regional Delirium Steering Committee

References

1. Marcantonio, E. (2017). Delirium in Hospitalized Older Adults. *New England Journal Of Medicine*, 377(15), 1456-1466. doi: 10.1056/nejmcp1605501
2. Young, J., & Inouye, S. K. (2007). Delirium in older people. *BMJ (Clinical research ed.)*, 334(7598), 842-6. doi:10.1136/bmi.39169.706574.AD
3. Salahudeen M, Duffull S, Nishtala P. Anticholinergic burden quantified by anticholinergic risk scales and adverse outcomes in older people: a systematic review. *BMC Geriatrics*. 2015;15(1).

Is Quetiapine Risk-free for Delirium Patients?

Results

A total of 358 charts were reviewed. Of these:

- For patients on anti-psychotics, 29 were admitted while 65 were discharged on 1 or more agent
- For patients with an ACB score > 0, 56 were admitted while 87 were discharged
- 185 patients had an ACB > 0 during admission
- In all sampled patients throughout their journeys pre-admission, during admission and post-admission, 1236 ACB scores were calculated and 591 were attributable to quetiapine (ACB = 3)

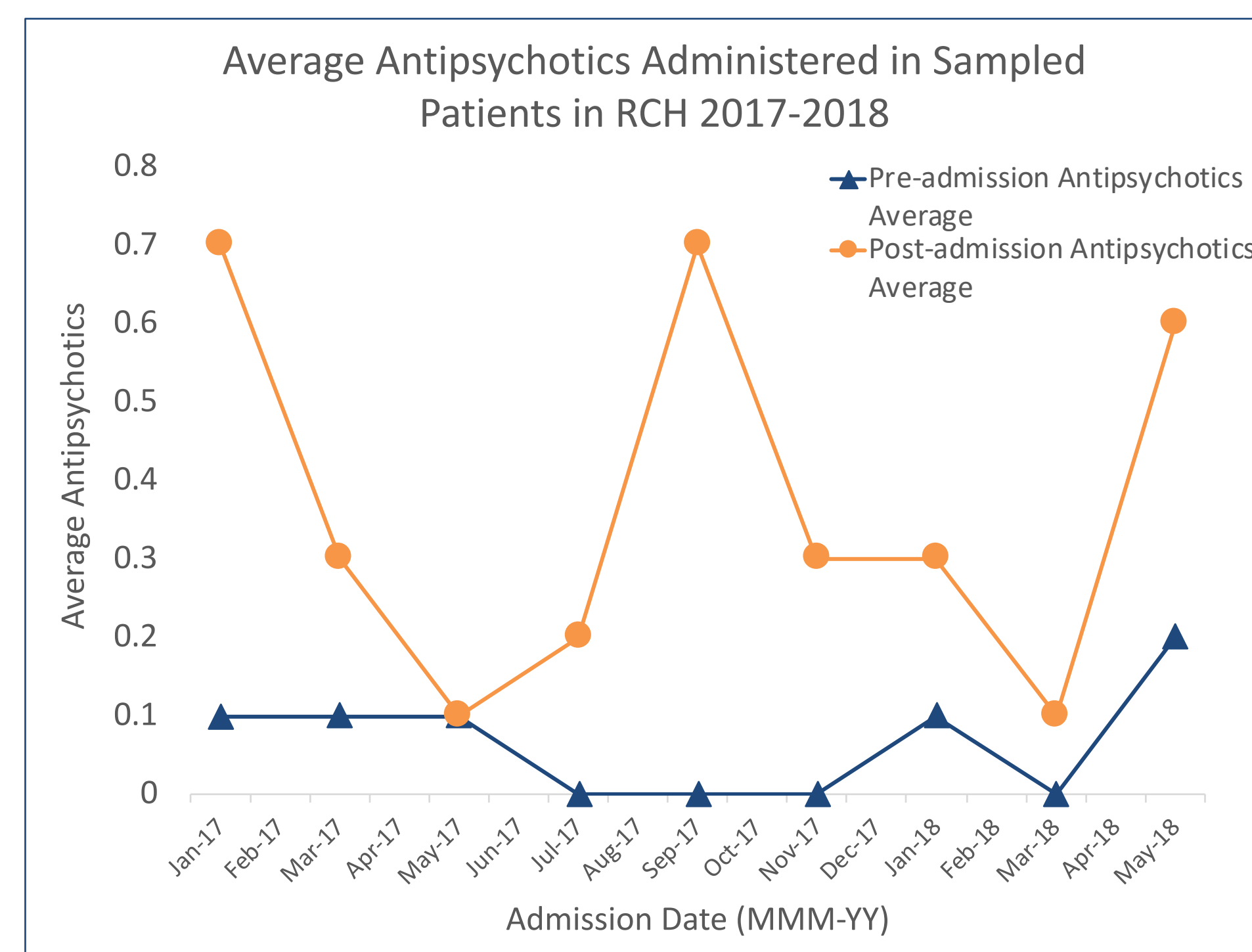


Figure 2. Outcome Measure: Average Antipsychotics Administered in Sampled RCH Patients from 2017 -2018

**Note: average calculated = total number of antipsychotics administered divided by total number of patients for the specific admission date

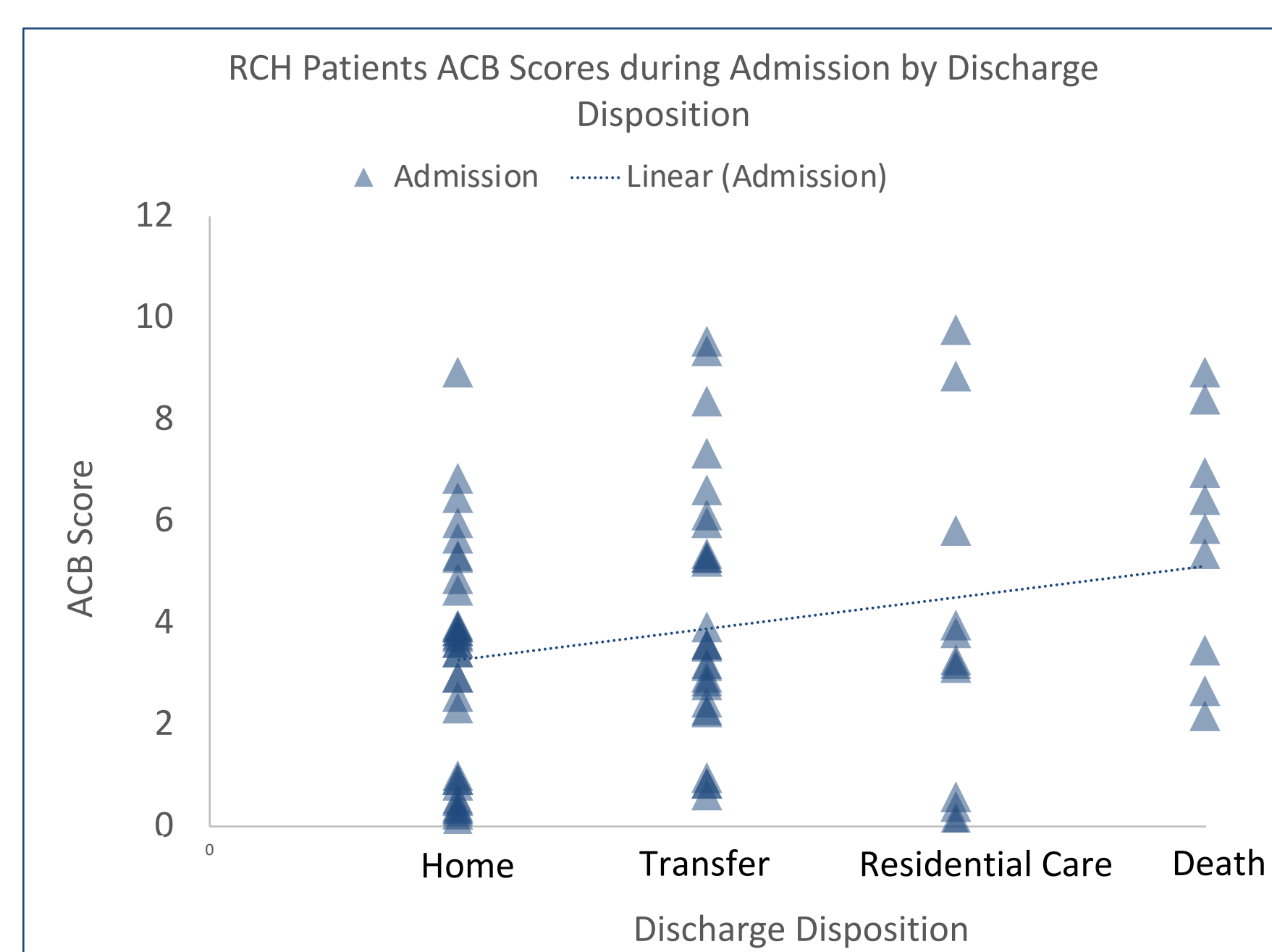


Figure 3. Outcome Measure: RCH Patients ACB Scores during Admission by Discharge Disposition

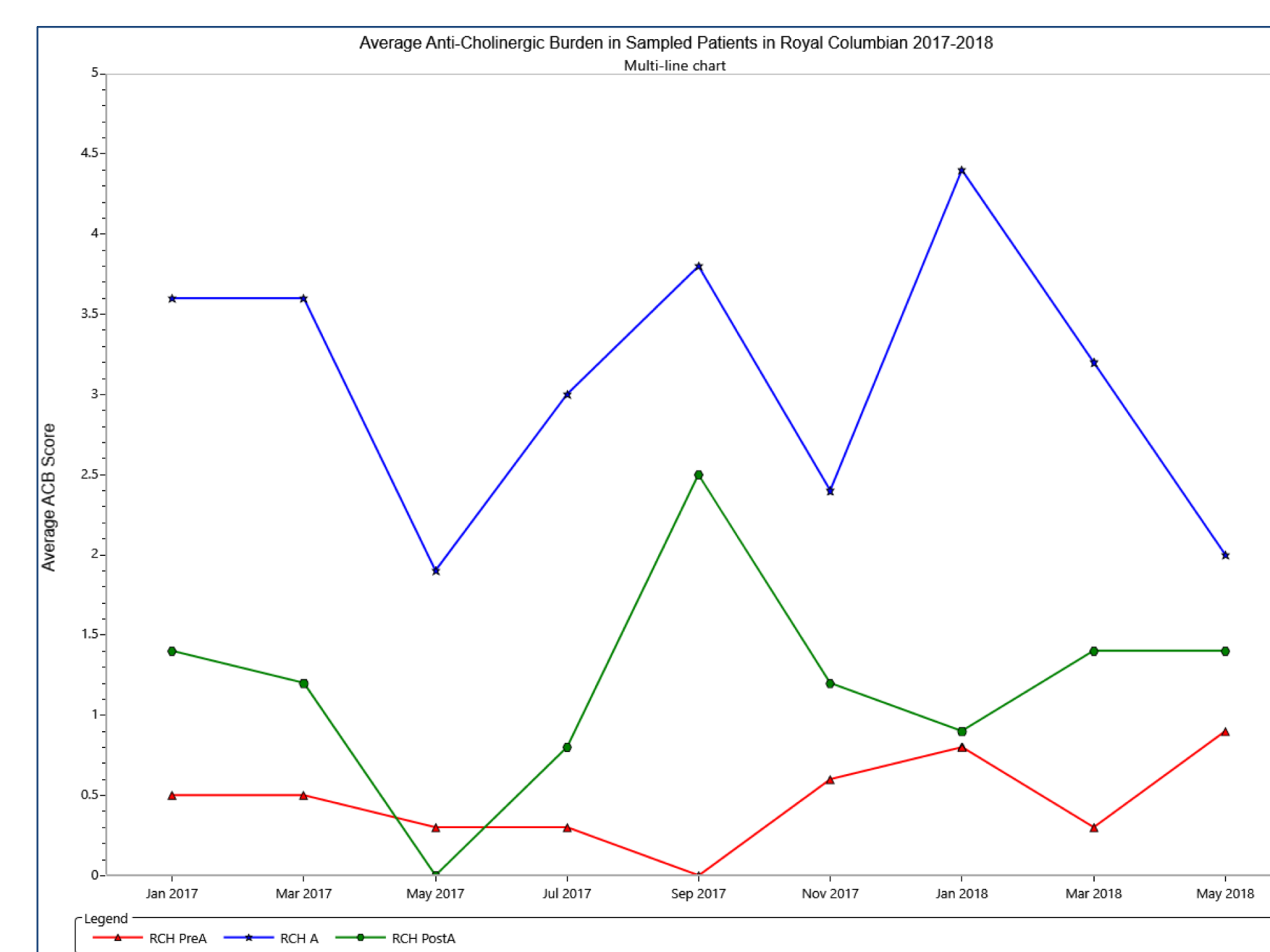


Figure 4. Outcome Measure: Average ACB Scores in Sampled RCH Patients Before, During, and After Admission

Lessons Learned

- Patients were still discharged with more anti-psychotic and anti-cholinergic medications compared to prior to admission
- Higher ACB scores during admission were associated with less independence on discharge (i.e. transfer, residential care, or death)
- For future focus, we found the most common anti-cholinergics administered were quetiapine, dimenhydrinate, and diphenhydramine
- **High ACB = Less independence = Much attributable to Quetiapine**

Next Steps

- Promote education around the anticholinergic properties of anti-psychotics and over-the-counter medications
- Consider updating the current delirium PPO around anti-cholinergic medications