

Reducing anticholinergic burden (ACB) within the healthcare for older people's (HCOP) wards in QEHB

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Introduction

Polypharmacy is on the rise, especially in the older population¹.

Medications with anticholinergic properties can have significant adverse effects, particularly in older adults. The cumulative effect of one or more of these medications is called the **Anticholinergic Burden**¹.

An Anticholinergic Burden (ACB) score of ≥ 3 is associated with increased risks of falls, cognitive impairment, and mortality. Additionally, side effects such as urinary retention, visual disturbances, and constipation are frequent contributors to delirium.

Aims

To assess whether raising awareness of ACB through a teaching session or poster within the Healthcare of Older People (HCOP) department can lead to a reduction in ACB scores.

Poster

LET'S REDUCE ANTICHOLINERGIC BURDEN!

WHAT IS ANTICHOLINERGIC BURDEN?

IT IS THE CUMULATIVE EFFECT ON AN INDIVIDUAL OF TAKING MULTIPLE MEDICATIONS WITH ANTICHOLINERGIC ACTIVITY

MEDICATIONS WITH ANTICHOLINERGIC ACTIVITY INCLUDE OPIOIDS, ANTI-HISTAMINES, ANTI-EMETICS, PROTON PUMP INHIBITORS

WHEN USED IN COMBINATION AN INDIVIDUAL'S ANTICHOLINERGIC BURDEN MAY INCREASE AND THE SIDE EFFECTS MAY ACCUMULATE

WHY IS THIS IMPORTANT? IN OLDER PEOPLE, HIGH ACB SCORES OF 3 OR MORE ARE ASSOCIATED WITH INCREASED RISK OF COGNITIVE IMPAIRMENT, FALLS AND DEMENTIA

CALCULATING ANTICHOLINERGIC BURDEN WWW.ACBCALC.COM

ANTICHOLINERGIC BURDEN SCORE			
	1	2	3
Depression	Mirtazapine, Sertraline, Venlafaxine		Amiripityline, Paroxetine, Imipramine
Urinary incontinence			Oxybutynin, Solifenacin, Tolterodine
Nausea and vomiting	Domperidone, metoclopramide		Levomopromazine
Hayfever and urticaria	Cetirizine, Fexofenadine, Loratadine		Chlorphenamine
Reflux	Lansoprazole	Cimetidine, Ranitidine	
Pain relief	Codeine, Fentanyl, Morphine, Oxycodone	Tramadol	
Neuropathic pain			Amiripityline, Gabapentin, Pregabalin

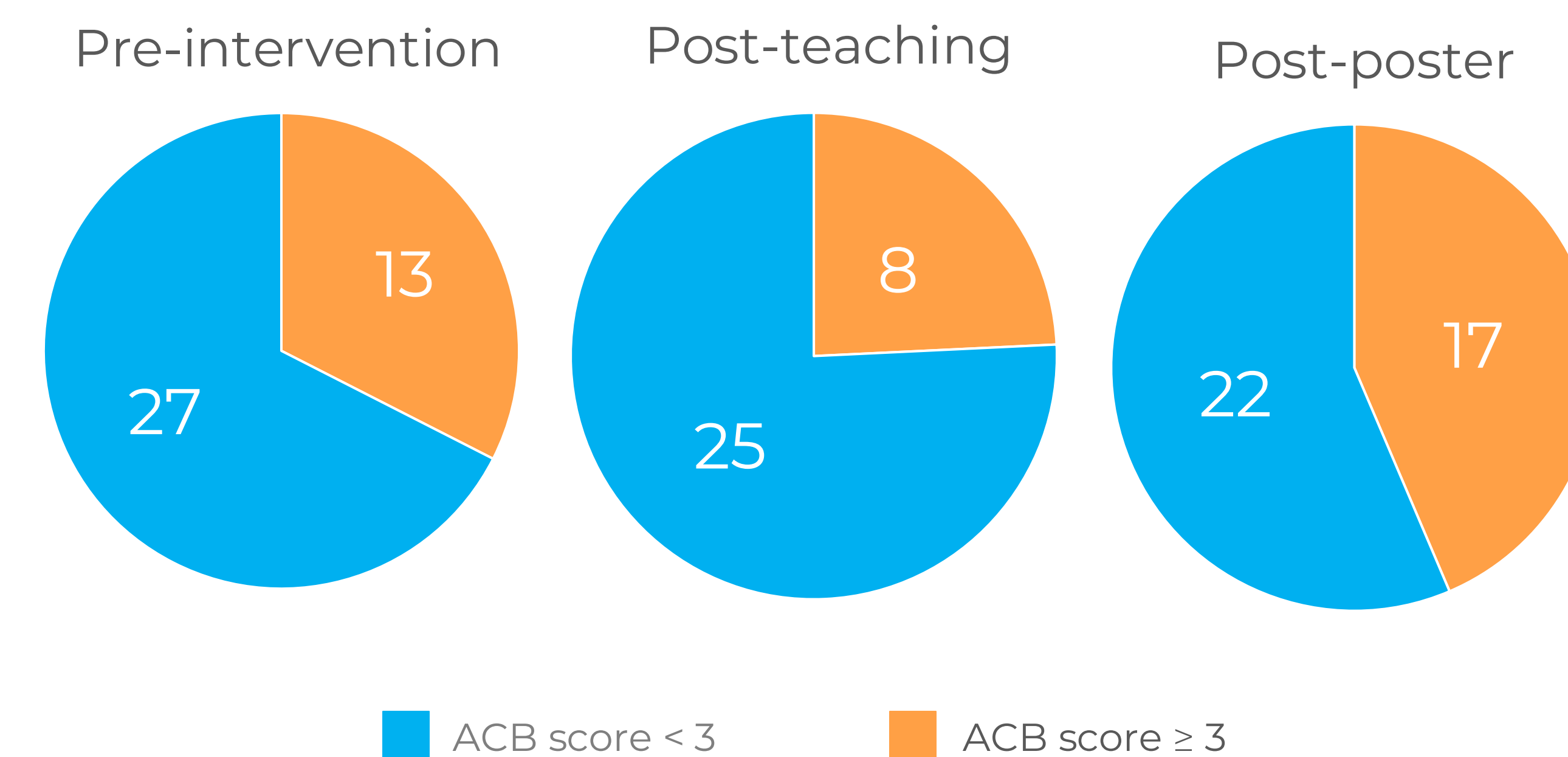
Method

Over four months, a teaching session and a poster was disseminated on ACB. Retrospective data were collected from three separate weeks, one before any intervention, one after the teaching session and one after the poster for patients discharged from the HCOP department. Admission and discharge ACB scores were calculated using the ACB Calculator (www.acbcalc.com). Patients on end-of-life medications were excluded.



Results

ACB Score 3 or above on discharge

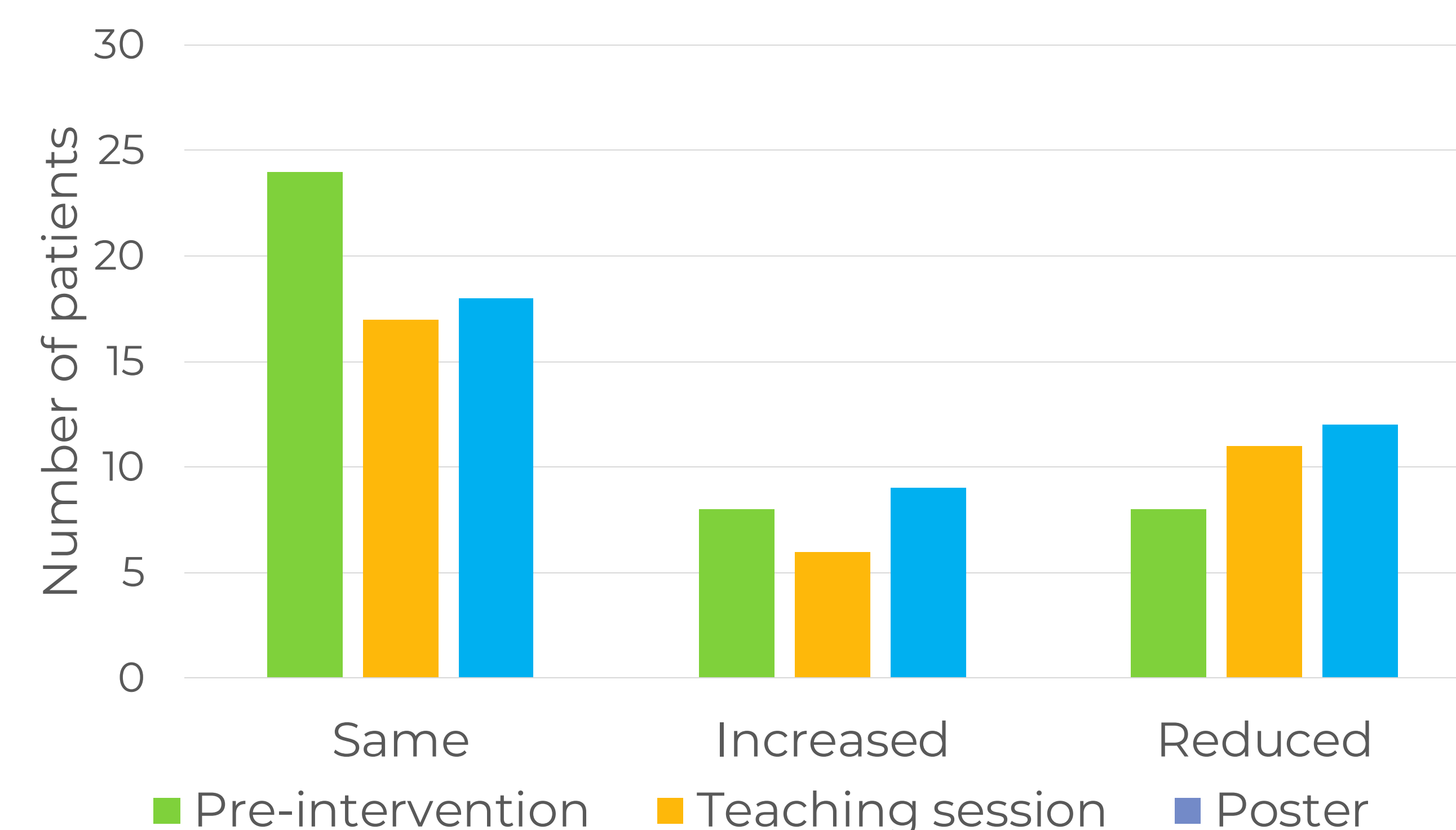


Pre-intervention: Of 40 patients, 13 had an ACB score ≥ 3 on discharge. Seven patients retained their admission ACB scores ≥ 3 at discharge, while eight patients showed a reduction.

Post-teaching: Of 33 patients, eight had an ACB score ≥ 3 on discharge, and 11 showed a reduction in scores.

Post-poster: Among 39 patients, 17 had an ACB score ≥ 3 on discharge. However, this cycle achieved the highest number of score reductions, with 12 patients showing improvement.

How the scores changed after each intervention



Spotlight Side analysis: Lansoprazole and Furosemide were the most common offending medications. A total of 37 out of 112 patients (33%) were admitted to hospital with lansoprazole. 33 out of 37 patients remained on lansoprazole at discharge.

Conclusion

The teaching session and poster did prompt a reduction in ACB scores. However, many patients remained at high risk with ACB scores of 3 and above. **This is often a result of the cumulative effect of multiple medications with low ACB scores.**

Analgesics were often prescribed such as morphine. Patients often are on these medications long-term which may be difficult to deprescribe. Side analysis showed the most common offending medications was lansoprazole, which has its own de-prescribing.org algorithm².

This project demonstrated that teaching and posters, prompts clinicians to review medications, especially anticholinergics in the older population. **Older patients may not have easy access to GP services and so whilst as an inpatient, clinicians should capitalize on the opportunity to perform comprehensive medication reviews.**

Limitations

We did not assess the indications of each medication with ACB scores. We did not establish clinician's underlying knowledge or confidence on de-prescribing.

Suggestions

- 1) Regular inpatient medication reviews is paramount within the older population as they may not have easy access to their GP.
- 2) Automated ACB scores through the trusts' online computer noting system- *2nd QIP currently ongoing*
- 3) Separate QIP looking at lansoprazole prescriptions and encouraging use of the PPI de-prescribing.org algorithm²

References

1. Grossi CM, Richardson K, Savva GM, Fox C, Arthur A, Loke YK, Steel N, Brayne C, Matthews FE, Robinson L, Myint PK, Maidment ID. Increasing prevalence of anticholinergic medication use in older people in England over 20 years: cognitive function and ageing study I and II. *BMC Geriatr.* 2020 Jul 31;20(1):267. doi: 10.1186/s12877-020-01657-x. PMID: 32736640; PMCID: PMC7393714.
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