

# Antipsychotic Prescribing in Older Adults after In-Hospital Initiation

Jillian Madey, Samantha Tri, Aleina Haines, Stephanie Zimmer, Katelyn Halpape, and Zack Dumont

**To cite:** Madey J, Tri S, Haines A, Zimmer S, Halpape K, Dumont Z. Antipsychotic prescribing in older adults after in-hospital initiation. *Can J Hosp Pharm.* 77(2):e3543. doi: 10.4212/cjhp.3543

## ABSTRACT

**Background:** In older adults, the use of antipsychotics to treat delirium or the behavioural and psychological symptoms of dementia is potentially inappropriate and may be associated with adverse effects. Antipsychotics newly initiated in hospital may be inadvertently continued after discharge. In the Saskatchewan Health Authority (SHA) – Regina area, the frequency and duration of antipsychotic continuation for older adults after initiation during a hospital stay is unknown.

**Objectives:** To describe potentially inappropriate antipsychotic use in older adults after discharge from hospital, specifically rates of postdischarge antipsychotic therapy after initiation in hospital and continuation up to 180 days after discharge; prescribing regimens used; risk factors associated with continuation; pharmacist involvement; and plans for antipsychotic discontinuation, tapering, and/or follow-up.

**Methods:** This retrospective chart review included inpatients 65 years of age or older who were discharged from medicine units at SHA – Regina area hospitals between September 30, 2021, and June 28, 2022. Outpatient dispensing histories were also gathered.

**Results:** Of the 189 patients included in the analysis, 60 (31.7%) had continuation of antipsychotic therapy at discharge. Of these, 48 (80.0%), 33 (55.0%), and 24 (40.0%) had continuation of antipsychotic therapy at 30, 90, and 180 days after discharge, respectively. Of the patients with continuing antipsychotic therapy, 53 (88.3%) were 75 years of age or older, and 9 (15.0%) had documentation of an outpatient antipsychotic follow-up plan.

**Conclusions:** Postdischarge continuation of antipsychotics was similar to that reported in the literature. Patients continued on antipsychotics after discharge were at a greater than 50% risk of continuation at 90 days and were unlikely to have a follow-up plan. Future quality improvement efforts should include standardized prioritization of medication reviews, documentation of indications, and regular reassessment of therapy.

**Keywords:** antipsychotics, older adults, delirium, dementia, behavioural and psychological symptoms of dementia, prescribing

## RÉSUMÉ

**Contexte :** Chez les personnes âgées, l'utilisation d'antipsychotiques pour traiter le délire ou les symptômes comportementaux et psychologiques de la démence est potentiellement inappropriée et associée à des effets indésirables. Le traitement antipsychotique initié à l'hôpital pourrait se poursuivre par inadvertance après le congé. Dans la région de Regina de la Saskatchewan Health Authority (SHA), la fréquence et la durée du maintien d'antipsychotiques chez les personnes âgées après l'initiation au cours d'un séjour à l'hôpital sont inconnues.

**Objectifs :** Décrire l'utilisation potentiellement inappropriée d'antipsychotiques chez les personnes âgées après le congé de l'hôpital, en particulier les taux de traitement antipsychotique initié à l'hôpital qui continue après le congé et son maintien jusqu'à 180 jours après le congé; les schémas de prescription utilisés; les facteurs de risque associés au maintien; l'implication du pharmacien; et les plans visant à arrêter, réduire progressivement et/ou à faire le suivi de la prise d'antipsychotiques.

**Méthodologie :** Cet examen rétrospectif des dossiers comprenait des patients hospitalisés âgés d'au moins 65 ans qui étaient sortis des unités de médecine d'hôpitaux de la région de Regina de la SHA entre le 30 septembre 2021 et le 28 juin 2022. Les historiques de délivrance en ambulatoire ont également été recueillis.

**Résultats :** Sur les 189 patients inclus dans l'analyse, 60 (31,7 %) ont continué leur traitement antipsychotique au moment du congé. Parmi eux, 48 (80,0 %), 33 (55,0 %) et 24 (40,0 %) continuaient leur traitement antipsychotique à 30, 90 et 180 jours après leur congé, respectivement. Parmi les patients recevant un traitement antipsychotique continu, 53 (88,3 %) étaient âgés d'au moins 75 ans et 9 (15,0 %) avaient un plan de suivi antipsychotique ambulatoire.

**Conclusions :** Le maintien des antipsychotiques après le congé était similaire à celui rapporté dans la littérature. Les patients qui continuaient à prendre des antipsychotiques après leur congé couraient un risque supérieur à 50 % de continuer à 90 jours et étaient peu susceptibles de disposer d'un plan de suivi. Les futurs efforts d'amélioration de la qualité devraient comprendre une priorisation standardisée des examens des médicaments, la documentation des indications et une réévaluation régulière du traitement.

**Mots-clés :** antipsychotiques, personnes âgées, délire, démence, symptômes comportementaux et psychologiques de la démence, prescription

## INTRODUCTION

Acute delirium may occur in older adults, whether or not they have dementia. Delirium is defined as a disturbance representing a change from baseline attention and awareness that develops over a period of hours to a few days and may fluctuate in severity.<sup>1</sup> The prevalence of acute delirium is estimated at between 18% and 50% for hospitalized patients and is highest among older adults (at least 65 years of age).<sup>2,3</sup> Patients experiencing delirium have higher rates of mortality, institutionalization, and complications, and their hospital stay may be prolonged.<sup>3</sup> Delirium can result in emotional distress; may pose a risk of harm to the patient, family, and caregivers; can increase nursing time per patient; and may elevate costs to the health care system.<sup>4,5</sup>

As distinct from those with delirium, individuals living with dementia—a condition that is not acute in nature—may experience disturbances in behaviour that are referred to as the behavioural and psychological symptoms of dementia (BPSD).<sup>4</sup> These symptoms refer to noncognitive aspects of dementia, such as disturbances in perception, thoughts, mood, or behaviour, and they may include acute delirium.<sup>3,6</sup>

Understanding the etiology of acute delirium or BPSD is an important step in management, given that the symptoms may be due to various reasons (e.g., underlying infection, drug toxicity, environmental stressor). Initial treatment strategies include recognizing and mitigating risk factors or underlying causes and applying nonpharmacologic approaches. Pharmacologic therapy should be trialled only when nonpharmacologic measures have been unsuccessful or the patient's behaviour or condition poses a safety risk.<sup>7</sup> Pharmacologic therapy for acute delirium is generally limited to antipsychotics, for which the evidence of benefit is uncertain and the use is off-label.<sup>7,8</sup> Similarly, antipsychotic agents are the main pharmacologic therapy for BPSD; however, risperidone is the only antipsychotic approved by Health Canada for short-term use in patients with BPSD.<sup>9,10</sup> Although warnings exist about long-term use of antipsychotics in older adults, there has been little effect on initiation of these medications, and in fact, they are increasingly prescribed.<sup>11</sup> For patients living with dementia, the rate of initiation of antipsychotics increases with hospitalization; for example, in a study published in 2016, antipsychotics were prescribed in hospital for 24.2% of patients with a diagnosis of dementia.<sup>12</sup>

Use of antipsychotics beyond resolution of symptoms places the patient at risk of antipsychotic-associated harms,<sup>13</sup> including orthostatic hypotension, extrapyramidal symptoms, metabolic complications, and increased risk of death in older adults.<sup>14</sup> Additionally, the risk of cerebrovascular adverse events increases among older adults who are receiving antipsychotics and remains elevated for approximately 20 months after initiation of the medication.<sup>15,16</sup>

The American Geriatric Society's Beers criteria recognize medications that are potentially inappropriate for older adults either because they are ineffective or because there is an unnecessary risk of harm relative to safer alternatives; according to these criteria, all antipsychotics are potentially inappropriate.<sup>17</sup> Antipsychotics initiated to manage delirium should be reassessed daily while the patient is in hospital, with a plan for discontinuation before transfer to another unit or before discharge.<sup>3,18</sup>

Despite evidence of harm when antipsychotics are used for both acute delirium and BPSD, antipsychotics are often continued as patients transition through the health care system. A retrospective study found that 43% of patients 65 years of age or older were continued on an antipsychotic after hospital discharge; the documented reasons for initiation included delirium (40%) and agitation (23%).<sup>19</sup> Within the Saskatchewan Health Authority (SHA) – Regina area, the duration of antipsychotic use among older adults with initiation of antipsychotic therapy in hospital is currently unknown.

The purpose of this study was to describe potentially inappropriate antipsychotic use for older adults in the SHA – Regina area who transitioned from hospital to an outpatient setting. The primary objectives were to summarize the percentage of antipsychotic-naïve older adults initiated on potentially inappropriate antipsychotics in hospital for whom antipsychotic therapy was continued at discharge and to determine the proportions with antipsychotic continuation at 30, 90, and 180 days after hospital discharge. The secondary objectives were to describe the antipsychotic agents, regimens, and routes of administration used during the hospital stay and at discharge; to determine the proportion of older adults who had, at the time of discharge, a documented discontinuation and/or taper plan and/or outpatient follow-up plan; to describe the risk factors for continuation of antipsychotics at discharge; and to determine the proportion of older adults with evidence of pharmacist involvement in antipsychotic treatment while in hospital.

## METHODS

A retrospective chart review was completed for inpatients discharged from adult medicine units at SHA – Regina area hospitals, using inpatient records and prescription dispensing data from outpatient community pharmacies for the 180 days following hospital discharge, to assess the duration of therapy.

Patients eligible for inclusion were Saskatchewan residents 65 years of age or older at the time of the index hospitalization who had been admitted from home or a long-term care facility, who were discharged from an inpatient adult general medicine unit under the care of an internist or hospitalist, and for whom an antipsychotic was initiated during the hospital stay. Patients were excluded if they had been discharged or transferred to a location where it was not possible to gather outpatient dispensing history,

were receiving a long-acting injectable antipsychotic, had a documented history of psychiatric illness for which antipsychotic use would be appropriate, did not have a best possible medication history form completed on admission, were receiving palliative care, or were undergoing IV chemotherapy for cancer; patients who died before discharge from hospital were also excluded.

The hospital's electronic health records were used to screen patients for inclusion. More specifically, an electronic report was generated from the hospital's pharmacy software system (BDM Pharmacy, version 10; BDM Healthcare Inc), listing all patients who had been discharged from an adult medicine unit before July 1, 2022, with at least 1 order for an antipsychotic. Patient screening was conducted in reverse chronological order until a convenience sample of 200 patients was obtained, to align with the research team's capacity and local restrictions.

A new antipsychotic prescription was defined as a prescription initiated in the hospital for patients who had no dispensing of an antipsychotic from a Saskatchewan outpatient pharmacy in the 4 months before admission.

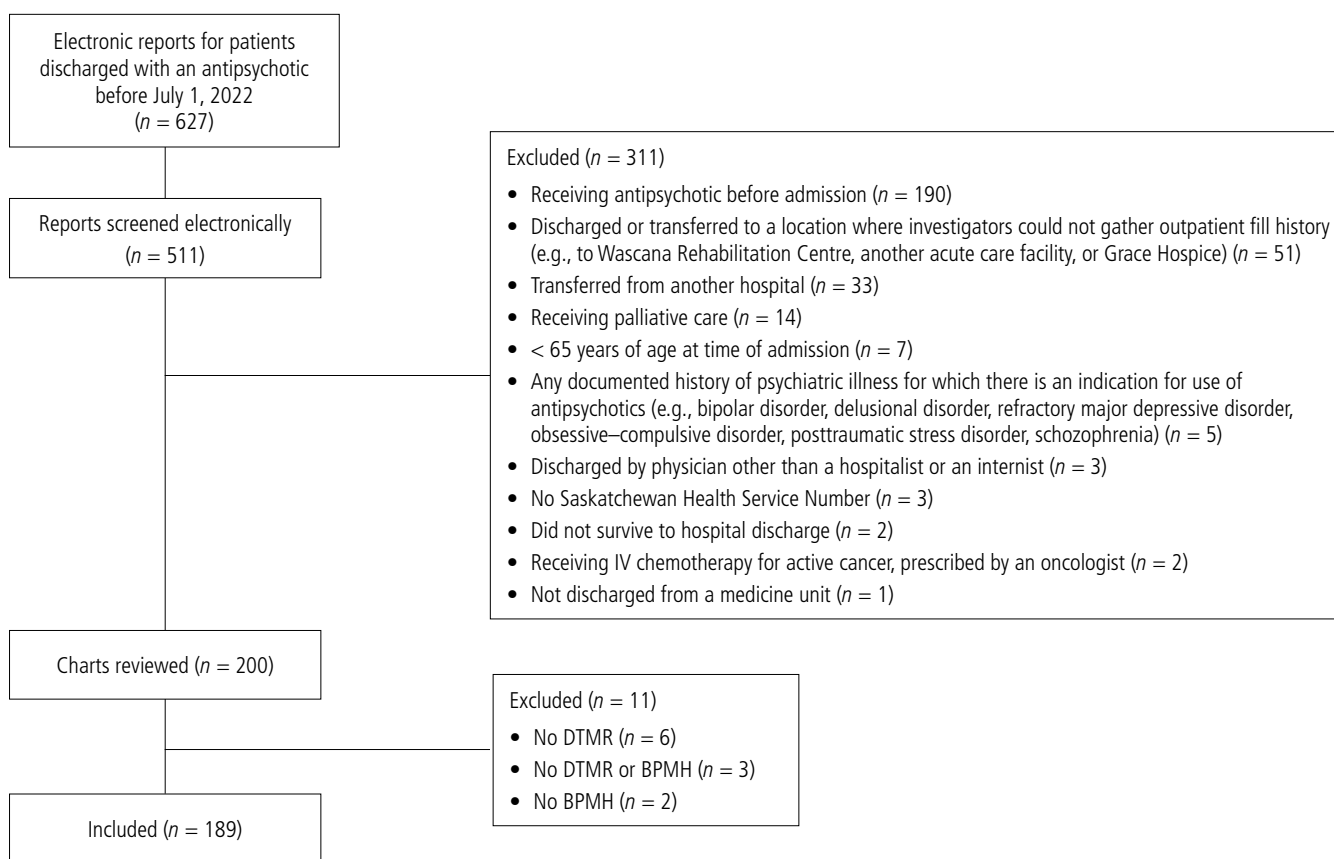
Antipsychotic prescriptions in the outpatient setting were assessed at 30, 90, and 180 days using each patient's claim history with community pharmacies. The 90-day timeframe corresponded with the expected benefit period of 12 weeks

for BPSD, and the other timeframes correlated with periods associated with risk of harm, monthly dispensing practices in Saskatchewan outpatient pharmacies, and long-term therapy. Any antipsychotic dispensed in this timeframe was included in the analysis, to account for patients with switching to an alternative antipsychotic after discharge. Study data were collected and managed using REDCap (Research Electronic Data Capture) tools hosted at SHA – Regina area.<sup>20,21</sup> REDCap is a secure web-based software platform designed to support data capture for research studies. This project was approved by the SHA Research Ethics Board (REB-22-67).

Statistical analysis, using descriptive and inferential statistics, was completed with Microsoft Excel 2016 software. A logistic regression analysis, to identify the predictors of antipsychotic continuation, was performed using SPSS version 28.0.1 software (IBM).

## RESULTS

A total of 511 records were screened electronically, until 200 unique records for patients meeting the inclusion criteria were identified. Of these, 189 patients discharged between September 30, 2021, and June 28, 2022, were included in the final analysis. Figure 1 outlines the rationale for exclusion at each stage of screening.



**FIGURE 1.** Flow diagram of screening and exclusion processes. Available reports were screened (in reverse chronological order) until 200 patients meeting inclusion criteria were identified. BPMH = best possible medication history, DTMR = discharge transfer medication reconciliation.

The baseline characteristics of the study population are presented in Table 1. Mean age was 85 (range 76–93) years, and more than half were women (107/189, 56.6%). The most common admission diagnoses were falls (40/189, 21.2%), urinary tract infections (19/189, 10.1%), and COVID-19 (18/189, 9.5%). At discharge, 58.7% (111/189) of the patients went to a long-term care or assisted living facility.

Of the 189 included patients, 69 (36.5%) had multiple antipsychotics prescribed throughout the hospital

stay, with an average of 2.2 (range 1–4) antipsychotics per patient. The most commonly prescribed antipsychotic was quetiapine (120/273 orders, 44.0%), followed by haloperidol (117/273 orders, 42.9%) (Table 2). Of the quetiapine orders, 46.7% (56/120) were prescribed on both a scheduled and as-needed (PRN) basis. The majority of haloperidol orders (83/117 orders, 70.9%) were for PRN administration, and for the majority of patients receiving haloperidol, both oral and parenteral agents were prescribed (80/117 orders, 68.4%). In

**TABLE 1. Baseline Characteristics**

Characteristic	Group; No. (%) of Patients <sup>a</sup>		
	All (n = 189)	Antipsychotic Not Continued at Discharge (n = 129)	Antipsychotic Continued at Discharge (n = 60)
Age group (years)			
65–74	25 (13.2)	18 (14.0)	7 (11.7)
75–84	61 (32.3)	38 (29.5)	23 (38.3)
85–94	87 (46.0)	61 (47.3)	26 (43.3)
≥ 95	16 (8.5)	12 (9.3)	4 (6.7)
Average age (range)	85 (76–93)	85 (76–93)	84 (76–92)
Sex, female	107 (56.6)	72 (55.8)	35 (58.3)
Admission diagnosis			
Infection	64 (33.9)	42 (32.6)	22 (36.7)
Neurological <sup>b</sup>	64 (33.9)	40 (31.0)	24 (40.0)
Musculoskeletal <sup>c</sup>	31 (16.4)	23 (17.8)	8 (13.3)
Respiratory	8 (4.2)	8 (6.2)	0 (0.0)
Gastrointestinal	8 (4.2)	7 (5.4)	1 (1.7)
Cardiovascular	7 (3.7)	4 (3.1)	3 (5.0)
Renal	7 (3.7)	5 (3.9)	2 (3.3)
Length of stay (days) (median and IQR)	13 (IQR = 14)	13 (IQR = 13)	16.5 (IQR = 17)
Admitting service: critical care/surgery/step down unit	16 (8.5)	9 (7.0)	7 (11.7)
Discharge location			
Home	78 (41.3)	57 (44.2)	21 (35.0)
Long-term care or assisted living facility	111 (58.7)	72 (55.8)	39 (65.0)
Comorbid conditions <sup>d</sup>			
Dementia	100 (52.9)	64 (49.6)	36 (60.0)
Chronic kidney disease	46 (24.3)	31 (24.0)	15 (25.0)
Liver disease	4 (2.1)	4 (3.1)	0 (0.0)
Diabetes mellitus	59 (31.2)	40 (31.0)	19 (31.7)
Congestive heart failure	38 (20.1)	28 (21.7)	10 (16.7)
History of CVA	33 (17.5)	20 (15.5)	13 (21.7)
Cancer <sup>e</sup>	30 (15.9)	22 (17.1)	8 (13.3)
Alcohol use disorder	16 (8.5)	10 (7.8)	6 (10.0)
Parkinson disease	15 (7.9)	9 (7.0)	6 (10.0)
COPD	35 (18.5)	23 (17.8)	12 (20.0)
None documented	10 (5.3)	8 (6.2)	2 (3.3)

COPD = chronic obstructive pulmonary disease, CVA = cerebrovascular accident.

<sup>a</sup>Except where indicated otherwise.

<sup>b</sup>Neurological diagnosis on admission includes falls, confusion, and delirium.

<sup>c</sup>Musculoskeletal diagnosis on admission includes weakness and pain.

<sup>d</sup>Comorbid conditions were selected on the basis of commonly occurring conditions in the literature concerning in-hospital prescribing of antipsychotics.

<sup>e</sup>Not actively receiving intravenous chemotherapy.

**TABLE 2. Description of Antipsychotic Regimens**

Antipsychotic	Type of Order Initiated in Hospital				No. (%) of Orders Continued at Discharge <sup>b</sup> (n = 62)
	Total (n = 273)	Oral Only	Parenteral Only	Oral + Parenteral <sup>a</sup>	
Haloperidol	117 (42.9%)				8 (12.9%)
PRN only	83	7	15	61	5
Scheduled only	10	6	3	1	3
Both PRN and scheduled	24	5	1	18	0
Methotrimeprazine	2 (0.7%)				0 (0%)
PRN only	1	0	0	1	0
Scheduled only	0	0	0	0	0
Both PRN and scheduled	1	1	0	0	0
Olanzapine	13 (4.8%)				3 (4.8%)
PRN only	4	2	0	2	0
Scheduled only	2	2	0	0	3
Both PRN and scheduled	7	4	0	3	0
Quetiapine	120 (44.0%)				43 (69.4%)
PRN only	50	50	0	0	8
Scheduled only	14	14	0	0	33
Both PRN and scheduled	56	56	0	0	2
Risperidone	21 (7.7%)				8 (12.9%)
PRN only	6	6	0	0	4
Scheduled only	8	8	0	0	3
Both PRN and scheduled	7	7	0	0	1

PRN = as-needed.

<sup>a</sup>Parenteral = intramuscular, intravenous, subcutaneous.

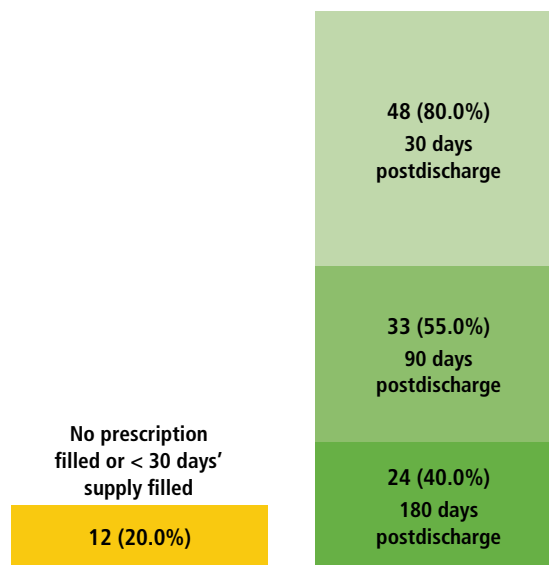
<sup>b</sup>All continued antipsychotics were for oral administration.

comparison, risperidone accounted for 7.7% (21/273) of the orders, and a larger proportion of the risperidone orders (8/21, 38.1%) were prescribed on a scheduled basis.

For 60 patients (60/189, 31.7%), a potentially inappropriate antipsychotic was continued at discharge; for these 60 patients, a total of 62 antipsychotics were prescribed (with 2 patients having 2 antipsychotics each on their discharge prescriptions). Among the antipsychotics continued at discharge, quetiapine was the most common (43/62, 69.4%), followed by haloperidol (8/62, 12.9%), risperidone (8/62, 12.9%), and olanzapine (3/62, 4.8%). All of the agents continued at discharge were for oral administration, and most were regularly scheduled (42/62, 67.7%). Scheduled administration was more common for olanzapine (3/3 orders, 100%) and quetiapine (33/43 orders, 76.7%). In contrast, PRN administration was more common among patients receiving haloperidol (5/8 orders, 62%). Risperidone prescriptions specified PRN administration (4/8, 50%), scheduled administration (3/8, 38%), or a combination of PRN and scheduled (1/8, 12%). The postdischarge antipsychotic regimens are described in Table 2.

Of the 60 patients for whom an antipsychotic prescription was continued at discharge, 2 (3.3%) did not fill the prescription, 10 (16.7%) had an antipsychotic prescription

for less than 30 days, and 48 (80.0%) had an antipsychotic prescription that continued at 30 days after discharge. Ultimately, 40.0% (24/60 patients) were still receiving antipsychotics 180 days after discharge (Figure 2).



**FIGURE 2.** Antipsychotics continued at discharge and at 30, 90, and 180 days after discharge (n = 60).



Among those with a prescription for antipsychotic agents on discharge, a discontinuation and/or taper plan was documented for 5.0% (3/60), and an outpatient follow-up plan was present for 15.0% (9/60). Among the latter 9 patients, the outpatient follow-up plan consisted of referral to the family physician to reassess antipsychotic usage (5/9, 56%) or an outpatient psychiatric consultation (4/9, 44%). Among patients whose antipsychotic was discontinued before discharge, 11.6% (15/129) had a pre-discharge discontinuation and/or taper plan, and 7.8% (10/129) had a follow-up plan.

Patients included in this study were assessed for known risk factors for antipsychotic continuation at discharge.<sup>22-24</sup> A total of 88.3% (53/60) of the patients who had antipsychotics continued at discharge were at least 75 years old, 60.0% (36/60) had an existing diagnosis of dementia, and 60.0% (36/60) had a catheter placed during the admission. Other risk factors for continuation included concurrent use of benzodiazepines (14/60, 23.3%) and/or opioid medications (34/60, 56.7%). In terms of the statistical analysis, none of the identified risk factors was statistically significant for continuation of antipsychotics, and some could not be analyzed because of low numbers. The study was not sufficiently powered to allow conclusions to be drawn regarding this subgroup analysis.

In total, pharmacists were involved in 66 documented interventions related to antipsychotics. Documented intervention with a progress note occurred 4 times (4/66, 6.1%). Starting or restarting an antipsychotic was the most common intervention (20/66, 30.3%), followed by discontinuing one route of administration when multiple routes appeared on the patient's profile (14/66, 21.2%), changing the dose (13/66, 19.7%), and discontinuing the antipsychotic (12/66, 18.2%).

## DISCUSSION

The rate of antipsychotic continuation in this study was comparable to rates in previous studies with a similar patient population (i.e., patients not receiving antipsychotics at the time of admission); together, these data suggest that the rate of antipsychotic continuation at discharge is between 30.2% and 43.0%.<sup>19,25</sup> Patients included in our analysis were not assessed for death occurring within the 180 days after hospital discharge. However, given that evidence of harm with antipsychotic use in older adults beyond the 90-day mark has been established and given that almost half of the patients who were continued on an antipsychotic at discharge were still receiving the medication at 180 days after discharge, these patients would be at an increased risk of death.<sup>14</sup> In addition, older adults are at increased risk of polypharmacy because of multiple comorbidities associated with aging, and they are more vulnerable to medication-related adverse events.<sup>26</sup> The continuation of antipsychotics at discharge may represent challenges associated with managing polypharmacy, including difficulty differentiating which medications may be contributing to adverse effects

or benefits and which may be the result of a prescribing cascade. The "antidote" for polypharmacy is deprescribing, which can be difficult to facilitate because of the patient's or family's concerns about adverse outcomes related to stopping medications or barriers to understanding the clinical rationale for discontinuing a medication.<sup>27</sup>

This study revealed prescribing patterns within the SHA – Regina area, where haloperidol and quetiapine were the most commonly prescribed antipsychotics for older adult inpatients in medicine units. This finding reflects other available literature suggesting that risperidone, haloperidol, and quetiapine are the antipsychotics most commonly initiated in hospital for delirium or BPSD, with risperidone and quetiapine being more commonly continued at discharge.<sup>28,29</sup> Analyzing the rationale for use of a particular antipsychotic was outside the scope of this project, but the more frequent prescribing of haloperidol and quetiapine may reflect prescribers' preference for a drug with options for different routes of administration (i.e., haloperidol) or a drug with sedating properties (i.e., quetiapine).

Among patients with continuation of an antipsychotic at discharge, the presence of outpatient follow-up plans or discontinuation and/or tapering plans for the antipsychotic documented at discharge was limited. This finding is comparable to the results of a retrospective chart review of older adult inpatients, which found that 87.6% of patients were continued on a newly prescribed antipsychotic for delirium management at discharge without documented instructions for discontinuation or follow-up.<sup>25</sup> Given that 80% of the older adults in our study with continuation of an antipsychotic after discharge did not have documented plans for reassessment or follow-up, it is uncertain if the medications were intended to be reassessed when patients followed up with their primary care provider(s). Uncertainty related to reassessment of antipsychotic therapy emphasizes the importance of documentation. Consistent documentation would ensure that other clinicians are aware of the indication and the plan for antipsychotic reassessment.

Antipsychotics are not considered a high-alert medication<sup>30</sup> and are not listed locally as targeted drugs to be reviewed under pharmacist work standards. In our study, pharmacist interventions were primarily related to antipsychotic initiation or reinitiation, defined by the presence of a verbal order from a physician documented in the patient chart. However, not every intervention was documented, so the intent of some interventions could not be inferred. There is an opportunity to standardize and improve consistency in pharmacist documentation of interventions for older adults experiencing polypharmacy.

The most common risk factor for antipsychotic continuation at discharge was age greater than or equal to 75 years. This may be related to the increased risk of polypharmacy among older adults, which potentiates their risk of adverse drug reactions and readmission to hospital; this situation

highlights the need for medication reviews before discharge and regularly thereafter in the community.<sup>31</sup> Care teams should initiate antipsychotics only after nonpharmacologic strategies have been trialled and, if antipsychotics are prescribed, the clinician should specify the duration of therapy or establish a date for reassessment.

The strengths of this study included the methodology and accessibility of patient data, which yielded an assessment of current practice within the SHA – Regina area for adult medicine patients, with extension to outpatient utilization of antipsychotics, and highlighting areas for future research.

The limitations of this study included the small sample size and the retrospective interpretation of noncontrolled data. Utilization of claim history as a metric for antipsychotic continuation limited the accuracy of our outcomes; furthermore, because we were unable to capture data for patients who died in the 180-day period after hospital discharge, the true proportion of those with continuation of antipsychotics after discharge may be greater than what we have reported here. Additionally, claim history represents prescription fills, but not necessarily whether patients actually took the medication.

Another limitation of a retrospective chart audit like ours relates to the lack of documented indications in the inpatient charts; therefore, it was difficult to distinguish between patients with acute delirium and those with another nonpsychiatric use for antipsychotics, such as insomnia. This limitation was justified, as the use of antipsychotics as a sleep aid or for insomnia is also inappropriate.<sup>32</sup> The retrospective nature of this study also precluded knowledge of the extent to which nonpharmacologic strategies were used for initial management and prescribers' intentions for the antipsychotic therapy, as these details may not have been documented in all cases.

The care team should prioritize patients for review according to the presence of various factors, alone or in combination, including age greater than or equal to 65 years; multiple medications, indicating polypharmacy; use of high-risk or potentially inappropriate medications; and chronologic proximity to transitions of care, where unintentional omission of medication reconciliation may have occurred. Given that chronic disease management and long-term follow-up are typically more widespread in the community setting, strategies to improve documentation of indication and enhance communication with outpatient care teams, such as community pharmacists and primary care physicians, should be pursued.

## CONCLUSION

The rate of continuation of antipsychotics in this study was similar to that reported in previous literature. Older adults with continuation of an antipsychotic at discharge were at a greater than 50% risk of continuation at 90 days after

discharge and were unlikely to have a follow-up plan or documented indication for the antipsychotic. Future work should include knowledge translation and quality improvement efforts, such as establishing a process for prioritizing medication reviews, documentation of clinical indication, and ensuring adequate follow-up for older adults.

## References

1. *Diagnostic and statistical manual of mental disorders*. 5th ed. American Psychiatric Association; 2013.
2. Bush SH, Lawlor PG. Five things to know about: delirium. *CMAJ*. 2015;187(2):129.
3. *Delirium: introduction*. Healthcare Excellence Canada; [cited 2024 Apr 8]. Available from: <https://www.healthcareexcellence.ca/en/what-we-do/all-programs/hospital-harm-is-everyones-concern/hospital-harm-improvement-resource/delirium-introduction/>
4. Rabheru K. Practical tips for recognition and management of behavioural and psychological symptoms of dementia. *Can Geriatr Soc J Contin Med Educ*. 2011;1(1):17-22.
5. Leslie DL, Inouye SK. The importance of delirium: economic and societal costs. *J Am Geriatr Soc*. 2011;59(Suppl 2):S241-3.
6. *Best practice guideline for accommodating and managing behavioural and psychological symptoms of dementia in residential care. A person-centered interdisciplinary approach*. Province of British Columbia, Ministry of Health; 2012 Oct 25 [cited 2022 Sep 14]. Available from: <https://vicsi-ltci.ca/wp-content/uploads/2022/01/bpsd-guideline.pdf>
7. Thom RP, Mock CK, Teslyar P. Delirium in hospitalized patients: risks and benefits of antipsychotics. *Cleve Clin J Med*. 2017;84(8):616-22.
8. Nikoie R, Neufeld KJ, Oh ES, Wilson LM, Zhang A, Robinson KA, et al. Antipsychotics for treating delirium in hospitalized adults: a systematic review. *Ann Intern Med*. 2019;171(7):485-95.
9. Risperidone - restriction of the dementia indication. Government of Canada; 2015 Feb 18 [cited 2022 Dec 10]. Available from: [https://healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2015/43797a-eng.php?\\_ga=1.262734028.1767095615.1458263529](https://healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2015/43797a-eng.php?_ga=1.262734028.1767095615.1458263529)
10. Risperdal [product monograph]. Janssen Inc; 2020 Dec 17 [cited 2022 Dec 17]. Available from: [https://www.janssen.com/canada/sites/www.janssen\\_com\\_canada/files/prod\\_files/live/risperdal\\_cpm.pdf](https://www.janssen.com/canada/sites/www.janssen_com_canada/files/prod_files/live/risperdal_cpm.pdf)
11. Calsolaro V, Femminella GD, Rogani S, Esposito S, Franchi R, Okoye C, et al. Behavioral and psychological symptoms in dementia (BPSD) and the use of antipsychotics. *Pharmaceuticals (Basel)*. 2021;14(3):246.
12. Gallagher P, Curtin D, de Siún A, O'Shea E, Kennelly S, O'Neill D, et al. Antipsychotic prescription amongst hospitalized patients with dementia. *QJM*. 2016;109(9):589-93.
13. Gustafsson M, Karlsson S, Lövheim H. Inappropriate long-term use of antipsychotic drugs is common among people with dementia living in specialized care units. *BMC Pharmacol Toxicol*. 2013;14:10.
14. Gill SS, Bronskill SE, Normand SLT, Anderson GM, Sykora K, Lam K, et al. Antipsychotic drug use and mortality in older adults with dementia. *Ann Intern Med*. 2007;146(11):775-86.
15. Mittal V, Kurup L, Williamson D, Muralee S, Tampi RR. Risk of cerebrovascular adverse events and death in elderly patients with dementia when treated with antipsychotic medications: a literature review of evidence. *Am J Alzheimers Dis Other Demen*. 2011;26(1):10-28.
16. Schneider LS, Dagerman K, Insel PS. Efficacy and adverse effects of atypical antipsychotics for dementia: meta-analysis of randomized, placebo-controlled trials. *Am J Geriatr Psychiatry*. 2006;14(3):191-210.
17. 2023 American Geriatrics Society Beers Criteria® Update Expert Panel. American Geriatrics Society 2023 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults. *J Am Geriatr Soc*. 2023;71(7):2052-81.
18. American Geriatrics Society Expert Panel on Postoperative Delirium in Older Adults. American Geriatrics Society abstracted clinical practice guideline for postoperative delirium in older adults. *J Am Geriatr Soc*. 2015;63(1):142-50.

19. Elbeddini A, To A. Hospitalized elderly: investigating newly prescribed atypical antipsychotics during the hospital stay and their continuation on discharge. *Drugs Ther Perspect.* 2020;36(9):421-5.
20. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform.* 2009;42(2):377-81.
21. Harris PA, Taylor R, Minor BL, Elliott V, Fernandez M, O'Neal L, et al. The REDCap consortium: building an international community of software platform partners. *J Biomed Inform.* 2019;95:103208.
22. Levine AR, Lemieux SM, D'Aquino D, Tenney A, Pisani M, Ali S. Risk factors for continuation of atypical antipsychotics at hospital discharge in two intensive care unit cohorts. *Clin Med Insights Psychiatry.* 2019;10. doi: 10.1177/1179557319863813
23. Lambert J, Vermassen J, Fierens J, Peperstraete H, Petrovic M, Colpaert K. Discharge from hospital with newly administered antipsychotics after intensive care unit delirium – incidence and contributing factors. *J Crit Care.* 2021;61:162-7.
24. Dixit D, Andrews LB, Radparvar S, Adams C, Kumar ST, Cardinale M. Descriptive analysis of the unwarranted continuation of antipsychotics for the management of ICU delirium during transitions of care: a multi-center evaluation across New Jersey. *Am J Health Syst Pharm.* 2021; 78(15):1385-94.
25. Johnson KG, Fashoyin A, Madden-Fuentes R, Muzyk AJ, Gagliardi JP, Yanamadala M. Discharge plans for geriatric inpatients with delirium: a plan to stop antipsychotics? *J Am Geriatr Soc.* 2017;65(10):2278-81.
26. Mortazavi SS, Shati M, Keshtkar A, Malakouti SK, Bazargan M, Assari S. Defining polypharmacy in the elderly: a systematic review protocol. *BMJ Open.* 2016;6(3):e010989.
27. O'Donnell LK, Ibrahim K. Polypharmacy and deprescribing: challenging the old and embracing the new. *BMC Geriatr.* 2022;22:734.
28. Kalisch Ellett LM, Pratt NL, Apajee J, Roughead EE. Initiation and continuation of antipsychotic medicines in older people following non-psychiatric hospital admission. *Int J Clin Pharm.* 2019;41(5):1341-7.
29. Hatta K, Kishi Y, Wada K, Odawara T, Takeuchi T, Shiganami T, et al. Antipsychotics for delirium in the general hospital setting in consecutive 2453 inpatients: a prospective observational study. *Int J Geriatr Psychiatry.* 2014;29(3):253-62.
30. *High-alert medications in acute care settings.* Institute for Safe Medication Practices; 2024 Jan 10 [cited 2024 Apr 9]. Available from: <https://www.ismp.org/recommendations/high-alert-medications-acute-list>
31. Medication review. CGA Toolkit Plus; [cited 2023 Apr 21]. Available from: <https://www.cgakit.com/m2--meds-review>
32. Coe HV, Hong IS. Safety of low doses of quetiapine when used for insomnia. *Ann Pharmacother.* 2012;46(5):718-22.

**Jillian Madey**, PharmD, ACPR, is with Pharmacy Services, Saskatchewan Health Authority – Regina, Regina, Saskatchewan.

**Samantha Tri**, BSP, ACPR, is with Pharmacy Services, Saskatchewan Health Authority – Regina, Regina, Saskatchewan.

**Aleina Haines**, BSP, ACPR, is with Pharmacy Services, Saskatchewan Health Authority – Regina, Regina, Saskatchewan.

**Stephanie Zimmer**, BSP, ACPR, is with Pharmacy Services, Saskatchewan Health Authority – Regina, Regina, Saskatchewan.

**Katelyn Halpape**, BSP, ACPR, PharmD, BCPP, is with the College of Pharmacy and Nutrition, University of Saskatchewan, Saskatoon, Saskatchewan.

**Zack Dumont**, BSP, ACPR, MS(Pharm), is with Pharmacy Services, Saskatchewan Health Authority – Regina, Regina, Saskatchewan.

**Competing interests:** For projects unrelated to the work reported here, Katelyn Halpape has received grants from the Health Canada Substance Use and Addictions Program and from Indigenous Services Canada; she also received an honorarium from Hogrefe Publishing for serving as co-editor of a chapter in the *Clinical Handbook of Psychotropic Drugs*. Zack Dumont is a past president of the Canadian Society of Hospital Pharmacists. No other competing interests were declared.

**Address correspondence to:**

Dr Jillian Madey  
Pharmacy Services  
Saskatchewan Health Authority – Regina  
1440 14th Avenue  
Regina SK S4P 0W5

**email:** [jillian.madey@saskhealthauthority.ca](mailto:jillian.madey@saskhealthauthority.ca)

**Funding:** None received.

**Submitted:** August 31, 2023

**Accepted:** December 19, 2023

**Published:** May 8, 2024