Deprescribing in Older Adults during Inpatient Psychiatric Hospitalization: Impact of Pharmacist Intervention and Interprofessional Collaboration

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Background

• Older adults are at heightened risk of medication adverse effects due to changes in renal function, liver function, cellular metabolism, and body composition.
• Polypharmacy and inappropriate medication use is correlated with age, comorbidity, and disability and has been linked to several poor health outcomes1-3.
• While numerous studies have explored medication burden and deprescribing in the community and nursing home settings, few studies have explored these interventions in a hospital setting.
• A retrospective analysis conducted at our psychiatric institution demonstrated increased medication burden in older adults during inpatient hospitalization. The most common medication classes added during hospitalization included vitamins, antipsychotics, and laxatives.
• Pharmacists are uniquely positioned to evaluate complex medication regimens and identify opportunities to reduce medication burden.

Objectives

Characterize medication burden and design a clinical pathway for pharmacist-led collaborative intervention to reduce medication regimen complexity

Examine the impact of a pharmacist-led collaborative intervention on medication burden in older adults during inpatient psychiatric hospitalization

Methods

Study Design: Interventional study with historical controls

Study Setting: Inpatient Geriatric Psychiatry Unit

Inclusion Criteria:
• Adults ≥ 65 years old discharged from an inpatient geriatric psychiatry unit

Exclusion criteria:
• Patients emergently transferred to medical hospital during psychiatric hospitalization
• Encounters with incomplete admission medication histories

Primary outcome: Change in medication burden (as measured by number of total medications, scheduled medications, needed medications, scheduled doses per day and scheduled administration times)

Secondary outcomes: Interventions (number, target medications, acceptance), change in burden in vitamins atypical, antipsychotics, and laxatives, & change in anticholinergic burden

This study was approved by the UPMC Quality Improvement Review Committee.

Intervention

Prescriber and pharmacist education on increase in medication burden from admission to discharge during inpatient psychiatric hospitalization as identified in retrospective analysis

Pharmacist medication burden review process implemented as standard of care for all geriatric psychiatry patients

Admission review ensuring accurate medication list documented in EHR

Weekly review for deprescribing and medication optimization opportunities by two geriatric psychiatry clinical pharmacists

Discharge review for accurate medication list in discharge paperwork and transition of care support

Interprofessional collaboration on implementing medication changes as identified by pharmacists, psychiatrists, family medicine advanced practice providers and nurses

Results

Demographics

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Pre-Intervention (n=134)</th>
<th>Post-Intervention (n=122)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>Mean: 75 (Range: 65-84)</td>
<td>Mean: 74 (Range: 63-85)</td>
</tr>
<tr>
<td>Gender</td>
<td>Female: 81 (60%)</td>
<td>Female: 63 (51%)</td>
</tr>
<tr>
<td></td>
<td>Male: 53 (40%)</td>
<td>Male: 60 (49%)</td>
</tr>
<tr>
<td>Length of stay (days)</td>
<td>Mean: 22 (Range: 4-162)</td>
<td>Mean: 27 (Range: 2-176)</td>
</tr>
<tr>
<td>Any neurocognitive disorder</td>
<td>74 (55%)</td>
<td>53 (43%)</td>
</tr>
<tr>
<td>Inpatient delirium</td>
<td>13 (10%)</td>
<td>23 (19%)</td>
</tr>
<tr>
<td>Inpatient catatonia</td>
<td>10 (7%)</td>
<td>5 (4%)</td>
</tr>
<tr>
<td>Inpatient ECT</td>
<td>17 (13%)</td>
<td>10 (8%)</td>
</tr>
</tbody>
</table>

Primary discharge diagnosis

• Depression disorder
• Dementia
• Schizophrenia spectrum disorder
• Bipolar disorder
• Other disorder
• Unspecified neuropsychiatric disorder

Interventions

Total interventions within study sample: 97
• Prescriber accepted interventions: 83 (86%)
• Medications involved in interventions:
  - 72 (74%) involved non-CNS medications
  - Vitamins (22%) > Atypical antipsychotics (6%) > Cardioselective beta-blockers 5%

Results Continued

<table>
<thead>
<tr>
<th>Medication Burden</th>
<th>Pre-Intervention (n=134)</th>
<th>Post-Intervention (n=122)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of medications</td>
<td>Mean: 75</td>
<td>Mean: 74</td>
</tr>
<tr>
<td>Number of scheduled medications</td>
<td>Range: 14 to 9</td>
<td>Range: 15 to 7</td>
</tr>
<tr>
<td>Number of as needed medications</td>
<td>Range: 9 to 9</td>
<td>Range: 7 to 7</td>
</tr>
<tr>
<td>Number of doses per day</td>
<td>Mean: 0</td>
<td>Mean: 0</td>
</tr>
<tr>
<td>Number of scheduled times per day taking medications</td>
<td>Range: 8 to 4</td>
<td>Range: 6 to 2</td>
</tr>
<tr>
<td>Did total number of medications increase, decrease or not change?</td>
<td>Mean: 0</td>
<td>Mean: 0</td>
</tr>
<tr>
<td>Top 3 most common medication classes added during inpatient psychiatric hospitalization</td>
<td>1. Vitamins 2. Atypical Antipsychotics 3. Laxatives</td>
<td></td>
</tr>
</tbody>
</table>

Conclusion

• When compared to historical controls, a structured pharmacist-led, interdisciplinary intervention resulted in clinically and statistically significant decreases in 4 of 5 measures of medication burden: number of total medications, scheduled medications, doses per day, and medication administrations times.
• Targeted pharmacist interventions to reduce medication burden were primarily compromised of non-CNS medications and were widely accepted by prescribers.
• Focusing on medication burden throughout the inpatient admission and during transitions of care resulted in secondary benefits and improved quality of care.

References


Disclosure: None of the authors have any financial relationships with any commercial interests.