I DROP IT

Impact of Deprescribing Rounds on Outpatient Prescriptions: an Interventional Trial

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Deprescribing:
A holistic and encompassing process that involves obtaining a patient’s medication list, identifying potentially inappropriate medications, and deciding if said medication should have a trial of discontinuation

• It is a process that is required for the safe and effective cessation of a chronic home medication¹
Background & Rationale

Upon a patient’s admission to the hospital, clinicians are primarily concerned about the medications related to admission

– Non-contributory medications are often left for the patient’s family physician to manage upon discharge

Non-implicated home medications are left in a purgatorial existence thereby perpetuating polypharmacy
Polypharmacy leads to ↑ pill burden, ↓ adherence, ↑ fall risk, and ↑ adverse drug reactions (ADRs)²

Pharmacist review is associated with ↓ medication costs, ↓ length of stay, ↓ of medication errors, ↓ ADRs, and ↓ mortality³

Medication cessation = most common recommendation
BUT least likely to be enacted¹

The hospital may be an optimal setting for deprescribing
# Study Objectives

<table>
<thead>
<tr>
<th>Primary</th>
<th>Secondary</th>
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| To compare the number of medications deprescribed in patients upon discharge from hospital between groups | To determine:  
• thirty day hospital readmission rate  
• thirty day rate of emergency department visit/s  
• how many medications remain deprescribed 30 days after hospital discharge  
• patient opinion of medications deprescribed  
• the retail cost savings to the patient as a result of medication deprescribing  
• how many home medications had a dose reduction at discharge  
• attending physicians’ and medical residents/students’ opinion of the utility of dedicated deprescribing rounds* |

*Outcome not yet assessed*
Study Design

- Prospective, non-randomized, controlled trial
- Single center-Royal Jubilee Hospital (RJH) Clinical Teaching Unit (CTU)

<table>
<thead>
<tr>
<th>Intervention Group: CTU Blue Team</th>
<th>Control Group: CTU Red Team</th>
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<tbody>
<tr>
<td>Usual Care</td>
<td>Usual care</td>
</tr>
<tr>
<td>Dedicated, pharmacist-led, deprescribing rounds</td>
<td></td>
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<tr>
<td>- Deprescribing “cheat sheet”</td>
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<tr>
<td>Team member deprescribing satisfaction survey</td>
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30 day verbal follow-up of patients with deprescribed medications
## Study Population

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
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<tbody>
<tr>
<td>• Patients admitted to the RJH CTU</td>
<td>• Patients with foreign language barriers</td>
</tr>
<tr>
<td>• Attending physicians and medical residents/students assigned to CTU Blue</td>
<td>• Patients who are not discharged from RJH CTU during the study period</td>
</tr>
<tr>
<td></td>
<td>• Patients who present with inappropriate cases as per RJH CTU consult guidelines</td>
</tr>
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<td></td>
<td>• Patients with no medications prior to admission</td>
</tr>
<tr>
<td></td>
<td>• Patients &lt; 19 y/o</td>
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Procedures
1. Review medical history and home medications by way of electronic records.

2. Match each home medication to an indication found within the patient’s medical history.

3. Confirm home medications directly with patient and/or patient’s caregiver.

4. Ask specific medication questions to assess true indication, actual use, and patient’s medication beliefs.

5. Discuss, with the patient and/or caregiver, the potential around stopping or changing medications while outlining benefits and risks of continued therapy → Patient to give consent for making proposed home medication changes.
6. Intervention pharmacist to proceed and discuss proposed medication changes with the intervention team during deprescribing rounds
   – Daily during patient care rounds

7. Team consensus ➔ medication changes to be implemented, as appropriate, with a monitoring plan outlining parameters to restarting deprescribed home medications.

8. Changes to home medications to be communicated to both the patient and outpatient healthcare providers
   – CTU discharge documents
1. Are you taking [insert deprescribed drug name]?
   – If **YES** → why?
     a) I was not aware I was supposed to stop
     b) My doctor told me to restart
     c) I have leftover medication at home
     d) I chose not to discontinue the medication
   – If **NO** → continue with next questions

2. Do you feel **better** or **worse** or **no different** having stopped above drug?

3. As a result of stopping this medications I (pick most applicable answer)...
   a) Take fewer tablets per day, which is nice
   b) Spend less of my own money on medications, which is good
   c) Have more trouble with symptoms
   d) Have fewer side effects
   e) All of the above
   f) None of the above (no difference)
   g) Other
1. Did you find deprescribing rounds beneficial?

2. Did the deprescribing rounds result in more deprescribed medications than you thought?

3. Are the deprescribing rounds something that you think should be continued when this study is finished?

4. Do you think it is important to have a pharmacist involved with deprescribing?

5. Did you learn enough about deprescribing to implement it into your daily practice?
Results
Recruitment & Demographics

**Figure 1: Recruitment flow chart**

- **N=186**, Patients meeting study criteria
  - **N=89**, CTU BLUE team INTERVENTION
  - **N=97**, CTU RED team CONTROL
  - At discharge
  - **N=52**, Patients with Deprescribed Medications
    - **N=23**, Consented to 30 day follow-up call
    - 30 days post discharge
    - **N=14**, Patients who received follow-up
  - **N=32**, Patients with Deprescribed Medications
    - **N=9**, Consented to 30 day follow-up call
    - **N=7**, Patients who received follow-up

**Table 1: Baseline demographics**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>CTU BLUE</th>
<th>CTU RED</th>
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<tbody>
<tr>
<td>Avg. Age (years)</td>
<td>69.0</td>
<td>66.3</td>
</tr>
<tr>
<td>Male (%)</td>
<td>56%</td>
<td>54%</td>
</tr>
<tr>
<td>Avg. Number Home Medications</td>
<td>7.81</td>
<td>7.44</td>
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<table>
<thead>
<tr>
<th>Comorbidities</th>
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<tbody>
<tr>
<td>Cardiovascular</td>
<td>73%</td>
<td>79%</td>
</tr>
<tr>
<td>Endocrine</td>
<td>46%</td>
<td>43%</td>
</tr>
<tr>
<td>Gastrointestinal</td>
<td>36%</td>
<td>40%</td>
</tr>
<tr>
<td>Hematologic</td>
<td>18%</td>
<td>19%</td>
</tr>
<tr>
<td>Infectious Disease</td>
<td>11%</td>
<td>10%</td>
</tr>
<tr>
<td>Malignancy</td>
<td>9%</td>
<td>16%</td>
</tr>
<tr>
<td>Musculoskeletal &amp; Skin</td>
<td>17%</td>
<td>27%</td>
</tr>
<tr>
<td>Neurologic</td>
<td>18%</td>
<td>14%</td>
</tr>
<tr>
<td>Psychiatric</td>
<td>44%</td>
<td>38%</td>
</tr>
<tr>
<td>Renal</td>
<td>22%</td>
<td>27%</td>
</tr>
<tr>
<td>Respiratory</td>
<td>35%</td>
<td>27%</td>
</tr>
<tr>
<td>Rheumatology</td>
<td>18%</td>
<td>13%</td>
</tr>
<tr>
<td>Urology</td>
<td>10%</td>
<td>7%</td>
</tr>
</tbody>
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1º Outcome: Deprescribed Medications

Primary outcome was STATISTICALLY SIGNIFICANT

p value: 0.001
95% CI -1.046, -0.258

Figure 2: CTU Blue team patients with deprescribed medications
114 medications total deprescribed

Figure 3: CTU Red team patients with deprescribed medications
61 medications total deprescribed

3 meds tapered total (Blue team)
2\textsuperscript{o} Outcome Deprescribed Medications at 30 Days

CTU Blue Team
81\% of medications remained deprescribed at 30 days
(32\rightarrow26)

CTU Red Team
64\% of medications remained deprescribed at 30 days
(14\rightarrow9)

Figure 4: Comparison of medications deprescribed between CTU Blue and Red teams
(95\% confidence interval)
Fun FYI: Identity of Deprescribed Medications

Figure 7: Deprescribed medications by agent*

ASA = acetylsalicylic acid
Flutic/Salmet = Fluticasone/Salmeterol

*Agents deprescribed more than twice during study

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2º Outcome: Clinical Implications

Not statistically different

Figure 5: Comparison of 30 day clinical outcomes between CTU Blue and Red Teams

(95% confidence interval)
2º Outcome: Yearly Cost Savings to Patient

Extrapolation:
~$225,000 yearly cost savings for RJH patients alone
2º Outcome: Patient Follow Up at 30 days cont...

Blue Team - How do you feel since discontinuing [insert drug name]?

- No difference
- Worse
- Better

Red Team - How do you feel since discontinuing [insert drug name]?

- No difference
- Worse
- Better

n=33

n=9
2º Outcome: Patient Follow Up at 30 days cont...

Blue Team - As a result of having stopped the medication I...
- take fewer tabs per day, which is nice
- spend less money on medications, which is good
- have trouble with more symptoms
- have fewer side effects
- all the above
- none of the above

Red Team - As a result of having stopped the medication I...
- take fewer tabs per day, which is nice
- spend less money on medications, which is good
- have trouble with more symptoms
- have fewer side effects
- all the above
- none of the above
Limitations

- Single centre
- Performance bias
- Unblinded
- Small sample size for follow-up data
- Unable to adequately power secondary outcomes
- Long-term (>30 day) outcomes of deprescribed medications not assessed
Preliminary Conclusions

• Dedicated time for pharmacist-led deprescribing rounds resulted in more patients with and higher rates of medication deprescribing.

• Unclear if intervention resulted in more medications deprescribed at 30 days.
  – Trend thus far suggests so.

• No statistical differences in 30 day hospital readmission rates or emergency department visits.
Thank you!
Questions?