The Impact of Academic Detailing to Support Deprescribing in the Nursing Home

Jennifer Pruskowski, PharmD, BCPS, BCGP, CPE

Assistant Professor, Division of Geriatric Medicine

Assistant Professor, Department of Pharmacy and Therapeutics

University of Pittsburgh | Pittsburgh, PA

jpruskow@pitt.edu

University of Pittsburgh

Disclosure Statement

- No relationships to disclose
- No conflicts of interest to declare

Acknowledgements

- Working Group:

Steven Handler, MD, PhD, CMD

Sandra Kane-Gill, PharmD, MS

Robert Arnold, MD, FAAHPM

Brian Wilson, MD

Dio Kavalieratos, PhD

- Partners:

Supported by the 2019-2020 Frontline Innovations Grant

University of Pittsburgh

Background

Background

- We currently live in the age of medication overload
- Studies show that as many as 97% of NH residents experience some harm from PIUM use
  - Includes adverse drug reactions, functional decline, cognitive impairment, falls, urinary incontinence, hospitalizations, and increased risk of death
- Deprescribing – the process of identifying and discontinuing PIUMs – is the solution, but hard to implement into practice

NH: nursing home; PIUM: potentially inappropriate or unnecessary medication

J Am Med Dir Assoc. 2016 Sep 1;17(9):862.e1-9.
JAMA Intern Med. 2015 May;175(5):827-34.

POP QUIZ

- What percentage of patients are willing to deprescribe at least 1 medication if their doctors says it is possible?:
  - A. 12%
  - B. 52%
  - C. 82%
  - D. 92%

JAMA Intern Med. 2018 Dec 1;178(12):1673-1680.

Barriers to Deprescribing Implementation

Awareness	Inertia	Self Efficacy
- Poor insight - Discrepant belief and attitudes	- Beliefs and attitudes - Behaviors	- Skills and knowledge - Information and influencers

University of Pittsburgh

BMJ Open. 2014; 4(12): e006544.

Project Overview

- **Goal:** To develop, implement, and evaluate a deprescribing focused academic detailing program within the nursing home setting.
- **Aims:**
  - Aim 1: Develop a deprescribing focused academic detailing program
  - Aim 2: Investigate the feasibility and acceptability of a deprescribing focused academic detailing program
  - Aim 3: Evaluate the impact of an academic detailing intervention to support pharmacist-led deprescribing

Methods

Proposed Methods

- Interprofessional working group
- Development of academic detailing program:
  - Formalized and approved QAPI project
  - Three nursing homes targeted | Proton pump inhibitors targeted
  - Sessions driven by consultant pharmacists and championed by nurse practitioners
  - BONUS: chart review of residents with associated recommendations
- Development of measurement tools:
  - Pre- and post-intervention survey

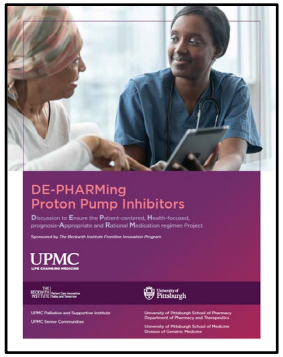
POP QUIZ

- According to current literature (EMPOWER study), how many older adults receiving BZDs need to receive direct education (about BZDs) in order for 1 patient to discontinue BZD therapy within 6 months?
  - A. 1
  - B. 4
  - C. 10
  - D. 12

BZD: benzodiazepine, EMPOWER: Eliminating Medications Through Patient Ownership of End Results

JAMA Intern Med. 2014 Jun;174(6):890-8.

Academic Detailing Material



Proton Pump Inhibitors (PPIs) in the Nursing Home (NH)

PPI Use is Often Inappropriate in the NH

- Up to 80% of NH residents are prescribed PPIs and almost half of this use is inappropriate.[1-4]
- According to recent reports:
  - > In _____ Place, _____ % of residents are prescribed PPIs.
  - > _____ % of your residents are prescribed a PPI.

Concerns Regarding Prolonged PPIs Use Have Been Growing:

- The 2019 Beers Criteria recommends avoiding scheduled use of PPIs for >8 weeks in older adults.[5]
- The START/STOPP criteria recommends discontinuing or dose reducing PPI therapy in older adults who have been on therapy for >8 weeks for uncomplicated peptic ulcer disease or erosive peptic esophagitis.[6]
- In 2011 the FDA issued communications regarding the risk of hip, wrist, and spine fractures with prolonged PPI therapy.[7]
- **Experts suggest an attempt to stop/reduce PPI therapy should occur in NH residents at the time of significant transitions of care (e.g. goals, prognosis, hospital admission), and at least once a year in NH residents receiving for GI symptoms.**

The Consequences of Prolonged PPI Therapy in NHs

NH residents are particularly at risk of:

- Bone Fractures and Falls:
  - > PPIs increase the risk of a hip fracture by up to 67%; this increases with higher doses and longer durations.[8]
- Infections including *Clostridium difficile* and pneumonia:
  - > PPIs have been associated with up to a 70% increased risk of infections, even in the absence of antimicrobial use.[9,10]
- Kidney Injury and Disease:
  - > PPIs have been associated with a 45% increased risk of PPIs have been associated with a 45% increased risk of AIN and CKD.[11]

Current Approaches are Ineffective

Often the indication(s) for PPI therapy is mislabeled within the NH setting. GERD is often utilized as a blanket diagnosis and there is no follow up or symptomatic evidence documented of active GERD.[2]

Deprescribing PPIs in the NH[12]

Step 1: Clarify Indication

PPIs are deprescribing-eligible if being used for the following:

- Mild to moderate esophagitis
- GERD (treatment >8 weeks)
- PUD (treatment > 12 weeks)
- ICU stress ulcer prophylaxis (continued from hospitalization)

Step 2: Deprescribe

PPIs should first be reduced to the lowest daily dose possible for one week and then dosed every other day for one week, before discontinuation.

Practical PPI Tapering Strategies:

- Omeprazole 20mg/day → reduce to omeprazole 10mg/day for one week → reduce to omeprazole 10mg every other day for one week → discontinue PPI
- Pantoprazole 40mg/day → reduce to pantoprazole 20mg/day for one week → reduce to pantoprazole 20mg every other day for one week → discontinue PPI

Step 3: Monitor at 4 and 12 Weeks

Literature suggests only 1 in every 10 of patients will have a relapse of symptoms.

Monitoring Considerations:

- If Verbal: Heartburn, regurgitation, dyspepsia, epigastric pain, use of PRN antacid agents
- If Non-Verbal: Loss of appetite, significant weight loss, agitation

If symptoms relapse or persist for 3-7 days, interfering with normal activity consider:

- Testing for and treating *Helicobacter pylori*
- Returning to previous dose

Key Messages

1. Overuse of PPIs is increasing, putting NH residents at risk for bone fractures and falls, infections, and kidney injury.
2. Experts suggest an attempt to stop/reduce PPI therapy should occur in NH residents at the time of significant transitions of care (e.g. goals, prognosis, hospital admission), and at least once a year in NH residents receiving for GI symptoms.
3. PPIs should first be reduced to the lowest daily dose possible for one week and then dosed every other day for one week, before discontinuation.

An evidence-based clinical practice guideline and algorithm published by Farrell, et al (2017) is available at: https://deprescribing.org/wp-content/uploads/2018/08/ppi-deprescribing-algorithm_2018_En.pdf

University of Pittsburgh

Example Recommendation Document

Prescriber: Dr. Hassan

DE-PHARMing Proton Pump Inhibitors

(Discussion to Ensure the Patient-centered, Health-focused, prognosis-Appropriate, and
Sponsored by The Beckwith Institute Frontline Innovation Program

UPMC

Patient Information: XXX in Canterbury Place Room XXX

Recommendation: Deprescribe PPI

- Reduce pantoprazole to 20mg once daily for 1 week, then reduc
  week, then discontinue
- Monitor for rebound heartburn, regurgitation, dyspepsia, and e

Situation: Deprescribing-eligible PPI due to indication and duration of th
review through the UPMC QAPI board approved project. Inclusion criter

- Deprescribing-eligible PPI indications include: mild to moderate eso
  (treatment > 12 weeks), and stress related mucosal disease prophyl
- PPIs will not be considered deprescribing-eligible in residents with: h
  or severe esophagitis, and/or anticoagulant, antiplatelet, NSAID or s

Background: Ms. XXX was admitted to UPMC Canterbury Place on 6/24/
She has been living in Canterbury Place since 2008. PMH includes: obesi
stage II sacral ulcer, questionable HF.

Assessment:

Current PPI Order:	Pantoprazole 40mg once daily		
Initiated:	Initiated prior to 11/2008 for GI prophylaxis		
Current Indication(s):	GERD	PUD: *H. pylori*	SRMD
	Barrett's esophagus	H/o GI Bleed	Esophagitis
	Other: _____		**Unknown**
Concurrent Medications:	Anticoagulant	Dual Antiplatelet	NSAID (including ASA)
	Corticosteroids	Other: _____	**None**
Other Notes:	- No documentation of GERD		

Recommendation: Deprescribe PPI

- Reduce pantoprazole to 20mg once daily for 1 week, then reduce pantoprazole to 20mg every other day for 1 week, then discontinue
- Monitor for rebound heartburn, regurgitation, dyspepsia, and epigastric pain at 4 and 12 weeks

PHYSICIAN RESPONSE: Please respond with only one of the following choices:

Agree **Disagree** **Other**

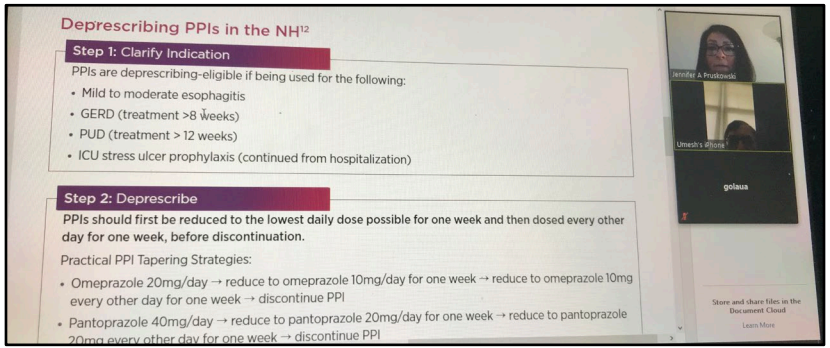
_____ _____

Signature Date

University of Pittsburgh

Finalized Methods (due to COVID-19)

- Study coordination, academic detailing sessions, and chart reviews conducted by primary investigator
  - Accepted recommendations implemented by primary investigator
- Academic detailing sessions conducted via Zoom®
- Pre- and post-intervention session distributed via Qualtrics®



University of Pittsburgh

Results

Primary Results

- Nursing home providers:
  - Eleven (11) participated in academic detailing sessions (48%)
  - Knowledge statistically improved by intervention and satisfied with project | desire future sessions focusing on many different drug classes
- Nursing home resident cohort (N=105):
  - Mean (standard deviation) age: 78 (13) years
  - Seventy percent (70%, n=73) female and 70% Caucasians (n=74)
  - Median length of stay: 544 days
  - Median number of scheduled medications: 13
  - Median omeprazole equivalent daily dose: 20mg

Table 1: Effect on Deprescribing Knowledge (N=11)

Question	Pre-Intervention Score Mean (SD)	Post-Intervention Score Mean (SD)	Change Mean (SD)	p value
Q1: Which of the following are 3 potential adverse reactions from prolonged PPI use in older adults? (3 points)	2.27 (0.45)	2.9 (0.29)	0.63 (0.48)	0.02*
Q2: How often should providers attempt to stop or reduce PPI therapy in an older adult receiving for GI symptoms? (1 point)	0.18 (0.4)	0.73 (0.45)	0.55 (0.66)	0.07
Q3: Which of the following PPI tapering approach is preferred in an older adult? (1 point)	0.82 (0.4)	1 (0)	0.18 (0.39)	0.5
Total (5 points)	3.27 (0.62)	4.64 (0.64)	1.36 (0.88)	<0.01*

Key: *statistically significant; Q: Question; SD: standard deviation

University of Pittsburgh

Table 2: Post Satisfaction Survey (N=11)

Question*	Mean (SD)
Domain: Deprescribing PPIs	
Deprescribing PPIs is relevant to my clinical practice.	4.55 (0.52)
Deprescribing PPIs is an important topic.	4.45 (0.52)
The key messages regarding deprescribing PPIs are consistent with my current practice.	4.36 (0.92)
The key messages regarding deprescribing PPIs are feasible to implement into my practice.	4.36 (0.67)
I am likely to deprescribe PPIs as a result of this visit.	4.36 (0.81)
Domain: Satisfaction with Academic Detailing Session	
The academic detailer was knowledgeable.	4.73 (0.47)
The academic detailer was an effective communicator.	4.64 (0.5)
I would be receptive to future deprescribing academic detailing visits.	4.55 (0.52)
Academic detailing is an effective way to get updated on important topics.	4.54 (0.52)
The printed materials were useful.	4.27 (0.79)

Key: *Based on 5-point Likert-type scale questions (1: strongly agree to 5: strongly disagree) SD: standard deviation

POP QUIZ

- What is the risk of rebound hypersecretion within 4 weeks of discontinuing PPIs?
  - A. 16%
  - B. 32%
  - C. 44%
  - D. 58%

Scand J Gastroenterol. 2013 May;48(5):515-22.

Results of Chart Review and Recommendations

- Only 20% (n=21) of PPI orders were determined to be deprescribing-eligible
  - Residents in the PPI deprescribing-eligible group were more likely to be female, admitted to the NH for longer, not receiving a PPI for GI prophylaxis and not be co-prescribed anticoagulants and antiplatelets
    - Twenty-eight percent (28%, n=29) of residents were co-prescribed anticoagulants and 49% (n=51) of residents were co-prescribed antiplatelet agents
  - No statistical difference between nursing home residents of prescribers who participated and were not able to participate in intervention
- Six (6) deprescribing orders implemented by the primary investigator | at two months all were successfully deprescribed

Table 3: Baseline Characteristics of Nursing Home Population

Characteristic	Total Population (N=105)	PPI Deprescribing Eligible (n=21)	PPI Not Deprescribing Eligible (n=84)	p-value
Pertinent Past Medical History				
• GERD, % (n)	67 (70)	67 (14)	67 (56)	1.0
• PUD, % (n)	15 (16)	14 (3)	15 (13)	1.0
• History of H. pylori Infection, % (n)	4 (4)	5 (1)	4 (3)	1.0
• Esophagitis, % (n)	14 (15)	14 (3)	14 (12)	1.0
• Barrett Esophagus, % (n)	3 (3)	0	4 (3)	1.0
• GI Bleeding, % (n)	37 (39)	29 (6)	39 (33)	0.45
Number of Scheduled Medications, median (SD)	13 (4.4)	11 (4.1)	13 (4.5)	0.2
• H_2RAs, % (n)	6 (6)	0	6 (6)	0.6
• Anticoagulants, % (n)	29 (30)	0	29 (30)	<0.01*
• Antiplatelets, % (n)	49 (51)	0	49 (51)	<0.01*
• Systemic NSAID, % (n)	5 (5)	0	5 (5)	0.58
• Glucocorticoidsteroids, % (n)	5 (5)	0	5 (5)	0.58

Key: *statistically significant; SD: standard deviation; GERD: gastroesophageal reflux disease; GI: gastrointestinal; H_2RA: histamine receptor antagonist; NSAID: non-steroidal anti-inflammatory drug; PUD: peptic ulcer disease

Table 3 Continued

Characteristic	Total Population (N=105)	Prescriber Participated in AD Session (n=44)	Prescriber Not Able to Participate in AD Session (n=61)	p-value
Pertinent Past Medical History				
• GERD, % (n)	67 (70)	66 (29)	39 (41)	0.89
• PUD, % (n)	15 (16)	14 (6)	16 (10)	0.7
• History of H. pylori Infection, % (n)	4 (4)	2 (1)	5 (3)	0.63
• Esophagitis, % (n)	14 (15)	11 (5)	16 (10)	0.58
• Barrett Esophagus, % (n)	3 (3)	0	5 (3)	0.26
• GI Bleeding, % (n)	37 (39)	34 (15)	39 (24)	0.58
Number of Scheduled Medications, median (SD)	13 (4.4)	13 (4.9)	13 (4.1)	0.99
• H_2RAs, % (n)	6 (6)	5 (2)	7 (4)	0.66
• Anticoagulants, % (n)	29 (30)	32 (14)	26 (16)	0.53
• Antiplatelets, % (n)	49 (51)	41 (18)	54 (33)	0.18
• Systemic NSAID, % (n)	5 (5)	7 (3)	3 (2)	0.65
• Glucocorticoidsteroids, % (n)	5 (5)	9 (4)	2 (1)	0.16

Discussion

Discussion Points

- Only 20% (n=21) of proton pump inhibitor orders were considered deprescribing eligible
  - Emphasized need for multimorbidity guidelines
- Limitations:
  - QI project therefore no sample size or power calculation conducted
  - Post-survey susceptible to response and social desirability bias, no effect size for meaningful improvement determined

Lessons Learned and Steps Forward

- Determining deprescribing eligibility opportunities:
  - Working group decided to not value cost in decision. Proton pump inhibitors targeted due to prevalence and lower risk of adverse drug withdrawal events
  - Current guidelines may need to be adapted for nursing home population
- Generalizability:
  - Finalized methods (due to COVID) may not be reproducible
  - Primary investigator currently facilitating collaborative agreements with other consultant pharmacists

Conclusion

- Academic detailing is a useful technique to disseminate and implement deprescribing into the nursing home setting

Thank you! Questions?

jpruskow@pitt.edu

University of Pittsburgh