Patient Safety Tip of the Week

April 4, 2017 Deprescribing in Long-Term Care

AHRQ has just added to their collection of patient safety primers a new one on patient safety in long-term care (AHRQ 2017). It separates long-term care into long-term acute care hospitals, inpatient rehabilitation hospitals, and skilled nursing facilities (SNF's). Almost 40% of Medicare patients are discharged to some form of long-term care facility following hospital discharge. The term "post-acute care" generally refers to care in a setting where care following an acute hospital discharge is rendered. Such patients represent an increasing proportion of the overall SNF population. One study found that 22% of Medicare SNF patients had an adverse event, about half of which were preventable. A similar study (Levinson 2016) found that 29% of Medicare patients admitted to a post-acute rehabilitation facility (rehab units in acute care hospitals were excluded) experienced either an adverse event or temporary harm event (see our September 2016 What's New in the Patient Safety World column "Adverse Events in Rehab Facilities"). Almost half (46%) of these were deemed to be likely preventable. These event rates are really quite similar to rates the OIG has found for Medicare patients in acute hospitals (27%) and simply demonstrate that all the factors which contribute to adverse events in hospitals are not unique to acute care hospitals but also occur in almost all healthcare settings.

The new AHRQ primer points out that common hazards in older patients in these settings include medication errors, healthcare-associated infections, delirium, falls, and pressure ulcers. Timely in this regard are some new studies on medication issues in long-term care settings.

A recent systematic review of medication errors found that medication errors occurred in 16-27% of SNF residents in studies looking at all types of medication errors (Ferrah 2017). And 13-31% of SNF residents had medication errors in those studies looking at transfer-related medication errors. And 75% of SNF residents received at least one potentially inappropriate medication (PIM). However, the authors also found that serious outcomes were relatively infrequent and death related to medication errors was rare in this setting, though they speculated that serious outcomes might be underreported.

It should not be surprising that medication errors and adverse drug events (ADE's) are near the top of the list of adverse events in long-term care. The AHRQ primer notes that many of the safety tools we use in acute hospitals (eg. barcoding, CPOE) are not as widely implemented in long-term care. In addition, patients in long-term care often have multiple comorbidities and are on numerous medications. So two interventions in long-term care are critical in reducing ADE's: medication reconciliation and deprescribing. We've done numerous columns on deprescribing (see the list at the end of today's

column). Liu and Campbell recently offered some tips on deprescribing in long-term care (Liu 2016).

The Liu article includes an excellent tip sheet for deprescribing in the nursing home. It builds upon the excellent 5-step protocol to aid the deprescribing process described by Scott and colleagues (Scott 2015) that we discussed in our July 2015 What's New in the Patient Safety World column "Tools for Deprescribing". But it adds a few considerations that focus on patients in long-term care. The Liu tip sheet emphasizes that deprescribing should be considered any time the patient's medication list is reviewed, which should include any time there is a change in a patient's condition or a new symptom, before prescribing any new medication, and at every visit. It then recommends the following steps before discontinuation or tapering of any medication:

- Review all medications (for indication, dose, continued need, possible drug interactions, possible side effects, and risk:benefit ratio)
- Identify potential medication to discontinue
  -Look for "prescribing cascades"
  -Always consider that any new symptom might be a side effect or adverse effect of an existing medication
  -Use Beers List and the STOPP Tool to identify potentially inappropriate medications (see list of our prior columns below regarding these)
  -Review the American Geriatrics Society list of things to avoid in the Choosing Wisely® Campaign
- Determine the goals of care, life expectancy, disease trajectory, and length of time to benefit of preventive medications
- Choose one medication at a time
- Consider consulting with a specialist
- Discuss with the patient, family, responsible party, facility staff

Once you've identified a medication to discontinue, begin taper process and monitor and reassess:

- Write the order for initial dose reduction or discontinuation
- Educate nursing home staff for what to monitor
- Identify specific targets for monitoring (eg. blood pressure, weight, etc.)
- Communicate with patient or family and request they call if they identify any potential adverse effects

And then they add another important point that we have harped upon in many columns (most recently in our March 2017 What's New in the Patient Safety World column "Yes! Another Voice for Medication e-Discontinuation!"): **document all about discontinuation of the medication!** That includes documenting the **reason** for discontinuation, the plan for monitoring and follow-up, the patient/family communication, other communications, and outcomes).

A couple points deserve special comment. Particularly important is consideration on how the intended benefit of any medication relates to the overall goals of care, life expectancy, and disease trajectory (and length of time to benefit of preventive medications). The

article also has tables with symptoms that are common side effects of various medications and common examples of the **prescribing cascade**. For example, a patient might develop urinary retention while taking amitriptyline. But if it is not recognized as a side effect of the amitriptyline the patient may be started on tamulosin. The article also has a nice list of medications that are commonly associated with **discontinuation syndromes**. The article also has a nice discussion about some of the barriers to deprescribing that may come from patients, families, collaborative partners, and nursing staff.

We think you'll use this tip sheet often if you care for patients in long-term care. Quite frankly, all the recommendations apply equally well to elderly patients in almost any setting.

And, of course, one of the items on the American Geriatrics Society list of things to avoid in the Choosing Wisely® Campaign is "**Don't use antipsychotics as the first choice to treat behavioral and psychological symptoms of dementia**." Antipsychotics have often been used in long-term care not just in patients with delirium but also in patients with dementia and agitation or aggressive behavioral issues. We've often discussed the efforts to reduce use of antipsychotics in long-term care patients (see our February 3, 2015 Patient Safety Tip of the Week "CMS Hopes to Reduce Antipsychotics in Dementia").

Use of antipsychotics in patients with dementia has long under fire because of limited efficacy and occurrence of serious adverse effects, such as an increase in stroke and mortality (Corbett 2014). They may also cause sedation, extrapyramidal signs, and some may produce orthostatic hypotension. The latter may all contribute to falls and fractures, as reported recently in patients 65 years and older who were started on an atypical antipsychotic medication as an outpatient (Fraser 2015). That study found that antipsychotic use increased the risk of serious falls by 52% and the risk or nonvertebral osteoporotic fracture by 50% compared to a matched control group, regardless of the specific agent used.

Despite guidelines and warnings against their use, antipsychotics continue to be used often in nursing homes and long-term care settings. In 2012 CMS challenged LTC and SNF facilities to reduce use of antipsychotics by 15% and between the end of 2011 and the end of 2013, the national prevalence of antipsychotic use in long-stay nursing home residents was reduced by 15.1 percent. CMS developed its National Partnership to Improve Dementia Care in Nursing Homes, a public-private coalition of CMS and several other partners, with a national goal of reducing the use of antipsychotic medications in long-stay nursing home residents by a further 25 percent by the end of 2015, and 30 percent by the end of 2016 (CMS 2014). In a commentary on those goals Leonard Gellman, MD pointed out that most antipsychotic medications are not actually prescribed by the nursing homes (Frieden 2014). Rather they are often started when the patient is in a hospital and continued upon discharge or they may have been started by the patient's primary care physician. Once they have been started, facilities and patients' families are reluctant to discontinue or reduce them. Since the start of the CMS National Partnership, there has been a decrease of 27 percent in the prevalence of antipsychotic

medication use in long-stay nursing home residents, to a national prevalence of 17.4 percent in Fiscal Year (FY) 2015 Quarter 3 (CMS 2016a).

Our February 3, 2015 Patient Safety Tip of the Week "CMS Hopes to Reduce Antipsychotics in Dementia" further described several interventions and programs that had successfully reduced the use of antipsychotic drugs in long-term care settings. The updated CMS web page for the National Partnership also provides access to numerous resources (CMS 2016b).

One underappreciated consideration regarding medications in the long-term care population is the association between **frailty and impaired renal function**. The percentage of patients with frailty in this population is very high and, because of sarcopenia in the frail, measuring renal function with creatinine and eGFR is problematic. Therefore, Ballew and colleagues (Ballew 2017) looked at cystatin C in addition to creatinine and urine albumin in community-dwelling men and women 66 years or older. Of almost 5000 subjects, 7% were determined to be frail. Among frail subjects, prevalence of eGFR < 60 calculated using creatinine and cystatin C were 45% and 77%, respectively. After adjustment, frailty showed a moderate association with eGFRcr but a strong association with eGFRcys and albumin-creatinine ratio. Moreover, hyperpolypharmacy (defined as taking ≥10 classes of medications) was more common in frail individuals (54% vs 38% of nonfrail), including classes requiring kidney clearance (eg, digoxin) and associated with falls and subsequent complications (eg, hypnotic/sedatives and anticoagulants). While this was not a long-term care population, we don't doubt that the same findings would apply to the long-term care population since the prevalence of frailty there is so high. These results suggest we need to be assessing renal function in this population using cystatin C to make more rational judgments about usage and dosing of certain drugs in this population.

Transitions from acute care to long-term care or other post-acute care setting are particularly vulnerable to error. Medication reconciliation at the time of hospital discharge provides a good opportunity to identify medications that might be appropriate for discontinuation or dose reduction (see our May 2015 What's New in the Patient Safety World column "Hospitalization: Missed Opportunity to Deprescribe"). One group of clinicians implemented a brown bag medication reconciliation process in the hospital setting to decrease medication discrepancies by encouraging evaluation of medication adherence, side effects, and monitoring at posthospitalization follow-up (Becker 2015). After implementation, a 7% decrease in reportable errors was noted.

And several times we have mentioned a specific type of error that may occur in patients discharged back to an SNF. The classic example is **methotrexate**. Methotrexate for most non-oncologic indications is dosed on a weekly basis. But sometimes patients returning from a hospital or ER or specialty clinic erroneously get started on daily methotrexate at the SNF, often with dire consequences. In our July 2011 What's New in the Patient Safety World column "More Problems With Methotrexate" we noted that the **patient in a long-term care facility may be especially vulnerable**. In such cases, the original order for methotrexate is usually written by a specialist. The patient is then followed in the LTC

facility typically by a primary care physician who may be less knowledgeable about the particular use of methotrexate for that condition. Also, the LTC patient may not be seen by a physician for periods as long as a month. And many LTC patients have cognitive impairments that might prevent them from understanding issues about their medications. So if a medication reconciliation error has occurred and a patient intended for once weekly dosing is now on daily dosing, the opportunity for toxicity is greatly increased. So LTC facilities should take steps to ensure that any of their residents taking methotrexate get the same level of supervision and protections that non-LTC patients would get. Those SNF's with CPOE should always use weekly dosing as the default and require hard stop overrides for any attempt to order daily methotrexate.

And, of course, the classic example of medications that are no longer needed are **proton pump inhibitors** that were begun during an ICU admission but never discontinued. If the patient gets sent back to the long-term care facility on PPI's they are likely to be continued indefinitely, even though they are no longer necessary, unless someone does a careful review of the medication list with deprescribing in mind.

Lastly, one anecdote we love to tell. The fall rate at one SNF fell dramatically one month. So we asked "how did you do it?". It turned out that there had been a disruption in the relationship the SNF had with a consulting psychiatrist. As a result, multiple patients did not have renewals of their orders for a variety of antidepressants and antipsychotic agents. That inadvertent cessation of these medications had led to a striking reduction in falls!

Some of our past columns on deprescribing:

- March 4, 2014 "Evidence-Based Prescribing and Deprescribing in the Elderly"
- September 30, 2014 "More on Deprescribing"
- May 2015 "Hospitalization: Missed Opportunity to Deprescribe"
- July 2015 "Tools for Deprescribing"

Some of our past columns on patient safety issues in long-term care settings:

- July 21, 2009 "Medication Errors in Long-Term Care"
- January 18, 2011 "More on Medication Errors in Long-Term Care"
- July 2011 "More Problems with Methotrexate"
- March 20, 2012 "Adverse Events Related to Psychotropic Medications"
- May 2012 "Safety of Hypnotic Drugs"
- August 2012 "New Joint Commission Tools for Improving Handoffs"
- February 3, 2015 "CMS Hopes to Reduce Antipsychotics in Dementia"
- July 28, 2015 "Not All Falls Are the Same"
- February 2016 "Avoiding Methotrexate Errors"
- February 16, 2016 "Fall Prevention Failing"
- September 2016 "Adverse Events in Rehab Facilities"

Some of our past columns on Beers' List and Inappropriate Prescribing in the Elderly:

- January 15, 2008 "Managing Dangerous Medications in the Elderly
- June 2008 "Potentially Inappropriate Medication Use in Elderly Hospitalized Patients"
- October 19, 2010 "Optimizing Medications in the Elderly"
- September 22, 2009 "Psychotropic Drugs and Falls in the SNF"
- September 2010 "Beers List and CPOE"
- June 21, 2011 "STOPP Using Beers' List?"
- December 2011 "Beers' Criteria Update in the Works"
- May 7, 2013 "Drug Errors in the Home"
- November 12, 2013 "More on Inappropriate Meds in the Elderly"
- January 28, 2014 "Is Polypharmacy Always Bad?"
- March 4, 2014 "Evidence-Based Prescribing and Deprescribing in the Elderly"
- September 30, 2014 "More on Deprescribing"
- February 10, 2015 "The Anticholinergic Burden and Dementia"
- May 2015 "Hospitalization: Missed Opportunity to Deprescribe"
- July 2015 "Tools for Deprescribing"
- November 2015 "Medications Most Likely to Harm the Elderly Are…"
- August 2, 2016 "Drugs in the Elderly: The Goldilocks Story"

Our prior columns related to methotrexate issues:

- July 2010 "Methotrexate Overdose Due to Prescribing Error"
- July 2011 "More Problems With Methotrexate"
- February 2016 "Avoiding Methotrexate Errors"
- June 21, 2016 "Methotrexate Errors in Australia"

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