

Patient Safety Tip of the Week

November 12, 2013

More on Inappropriate Meds in the Elderly

We've done many prior columns on Beers' List and medications which may be inappropriate in the elderly. In our December 2011 What's New in the Patient Safety World column "[Beers' Criteria Update in the Works](#)" we noted that the original Beers' List and subsequent updates were primarily consensus-based rather than truly evidence-based. But the [new updated version](#) is much improved in that regard since there has been an extensive review of the evidence in the new work effort.

One of the quality metrics reported by CMS for its Medicare Advantage plans is the percentage of elderly patients prescribed high-risk medications. The list of those medications is taken largely from Beers' List. A recent study ([Cooper 2013](#)) compared rates reported by the health plans with rates calculated from Medicare Part D (pharmacy) claims and found significant underreporting by many Medicare Advantage plans. The accompanying editorial ([Maciejewski 2013](#)) points out that CMS regularly audits billing and payment data for such health plans but that the Cooper study highlights the need for audits on the quality metrics reported as well.

But the bigger question should be "Does focusing on PIM's (potentially inappropriate medications) using administrative databases actually lead to improved patient outcomes and safety?" A recent study suggests it may not. In our March 2011 What's New in the Patient Safety World column "[Inappropriate Medications Often Start in the ICU](#)" and our June 21, 2011 Patient Safety Tip of the Week "[STOPP Using Beers' List?](#)" we noted a study by Morandi and colleagues ([Morandi 2011](#)) that showed many of the **PIM's** (potentially inappropriate medications) and **AIM's** (actually inappropriate medications) which elderly patients were discharged on were actually initiated in the ICU. The same research group has now followed up on that study with a new one ([Morandi 2013](#)) that did clinical reviews to determine whether PIM's were actually AIM's. Their findings are very informative.

In 120 patients who survived ICU stays there were 250 PIM's prescribed at hospital discharge. When a multidisciplinary team did clinical reviews of the PIM's to determine

whether such prescriptions were actually inappropriate, only 36% were deemed inappropriate. Moreover, the percentage deemed actually inappropriate varied greatly by medication category. Low percentages of opioids, antidepressants, and drugs causing orthostasis were deemed to be inappropriate. On the other hand, high percentages of **anticholinergic drugs, atypical antipsychotics, benzodiazepines, non-benzodiazepine hypnotics, and muscle relaxants** were deemed to be **actually inappropriate**.

Moreover, risk factors for being prescribed a PIM at discharge (seen in other studies and confirmed in this study) turned out not to be predictive of an AIM. They conclude that using lists of PIM's as screening tools are likely to generate many false-positive flags or warnings and may ultimately lead to inappropriate clinical decisions or alert fatigue. They stress the **importance of clinical context** and the value of having a multidisciplinary team review the drugs for clinical appropriateness. They note that almost two-thirds of the AIM's were initially begun in the ICU (where they may have been appropriate). Thus, medication reconciliation at every transition of care is important (eg. admission, ICU discharge, and hospital discharge). And efforts should focus on those categories that are most likely to be inappropriate at discharge (anticholinergic drugs, atypical antipsychotics, benzodiazepines, non-benzodiazepine hypnotics, and muscle relaxants).

However, another word of caution is in order. Though we focus heavily on the drugs appearing on Beers' List, many of the adverse drug events (ADE's) experienced by the elderly (and the not-so-elderly) are related to commonly prescribed drugs that are not on the list. A recent study from Australia ([Miller 2013](#)) looked at occurrence of ADE's in adults aged 45 and older. They found that 11.6% of all patients experienced at least one ADE in the previous 6 months. While most ADE's were mild or moderate, 11.8% were severe and 5.4% resulted in hospitalizations. Thirteen commonly prescribed drug classes accounted for 58% of all ADE's and **the list bore little resemblance to Beers' List**. Opioids were the most frequently implicated (8.2% of all ADE's) and accounted for over 14% of the hospitalizations. ADE's from salicylates and NSAID's accounted for 12.2% of hospitalizations related to ADE's.

In our December 2011 What's New in the Patient Safety World column "[Beers' Criteria Update in the Works](#)" we also noted multiple studies which demonstrated drugs not on Beers' List are frequent causes of ADE's. In our June 21, 2011 Patient Safety Tip of the Week "[STOPP Using Beers' List?](#)", we noted that the literature has been mixed on the ability of Beers' List to predict adverse drug events (ADE's). The STOPP criteria, on the other hand, identified potentially avoidable ADE's impacting on hospitalization over twice as often as did Beers' criteria and such ADE's are extremely common ([Hamilton 2011](#)). Another study ([Budnitz 2011](#)) on emergency hospitalizations related to ADE's concluded that drugs on Beers' list account for only a small percentage of hospitalizations. In that study, 6.6% of the ADE-related hospitalizations were related to potentially inappropriate medications on Beers' list and if digoxin is excluded this is reduced to only 3.17%. On the other hand, two thirds of the hospitalizations were related to only four medications or medication categories: warfarin/anticoagulants, antiplatelet agents, insulins, and oral hypoglycemia agents.

Whether the focus should be on Beers' List drugs or other drugs, the importance of medication reconciliation at the time of discharge must be emphasized. But it is still problematic, for both patients and physicians. That is why many programs designed to prevent unnecessary rehospitalizations have focused on a phone call (or other contact) to the patient at 24-48 hours after discharge. Often that contact is made by a pharmacist since confusion about medications is very common once the patient gets home. A new study ([Harris 2013](#)) looked at medication changes that occurred during hospitalization in 95 elderly patients and patient compliance with those changes 3 days after discharge. They found high rates of adherence to new medications prescribed at discharge. However, the story was different for medications intended to be discontinued after discharge. Of antihypertensives discontinued, 25% of patients started them up again on return home. For analgesics, 88% of those discontinued were restarted by patients on return home. They also noted that 5% of medications which had been taken at home prior to admission were never included on the admission and subsequent hospital medication reconciliation lists. The study really highlights the value of the post-discharge phone call being done by a clinical pharmacist or a physician or nurse who can focus on clarifying the medications the patient should be taking.

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

Patient Safety Tips of the Week:

- January 15, 2008 "[Managing Dangerous Medications in the Elderly](#)"
- October 19, 2010 "[Optimizing Medications in the Elderly](#)"
- September 22, 2009 "[Psychotropic Drugs and Falls in the SNF](#)"
- June 21, 2011 "[STOPP Using Beers' List?](#)"

What's New in the Patient Safety World columns:

- June 2008 "[Potentially Inappropriate Medication Use in Elderly Hospitalized Patients](#)"
- September 2010 "[Beers List and CPOE](#)"
- December 2011 "[Beers' Criteria Update in the Works](#)"

References:

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