## Drug Management

### Medication Alternatives for the Elderly

The following table details the drugs to avoid and the recommended agents to be considered as alternatives:

<table>
<thead>
<tr>
<th>Drug Class</th>
<th>Drugs to Avoid</th>
<th>Concerns</th>
<th>Safer Alternatives</th>
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</table>
| **Alpha-blockers, central**    | - methylidopa (Aldomet®)  
- reserpine *average daily dose greater than 0.1mg  
- guanfacine (Guanabenz®) | High risk of adverse CNS effects; bradycardia, orthostatic hypotension; avoid use as routine treatment of hypertension. | - HCTZ  
- ACE inhibitors  
- ARBs |
| **Analgesic Non-narcotic NSAIDs** | - indomethacin (Indocin®)  
- ketorolac (Toradol®) | Long-term use of full dose has the potential of producing GI bleeding, renal failure, high blood pressure, and heart failure. | - Short acting NSAIDs (e.g., ibuprofen)  
- COX-II for short-term use (Celecoxib), acetylsalicylic acid  
- Consider using with gastroprotective agent (proton pump inhibitor or misoprostol)  
For gout (chronic) consider alternative agents such as  
- allopurinol (Zyloprim®)  
- febuxostat (Uloric®) |
| **Antianxiety**                | - meprobamate (Miltown®, Tancot®)                                           | High rate of physical dependence; very sedating.                      | - buspirone (Buspar®) |
| **Antiemetic**                 | - metoclopramide (Reglan®, Metozolv®) *Class of drugs not included in the HRM measure per PQA specifications.* | Can cause extrapyramidal adverse effects. Low effectiveness as an antiemetic. Avoid metoclopramide unless being used for gastroparesis. | - dolasetron (Azemet®)  
- ondansetron (Zofran®)  
- granisetron (Kytril®, Sancuso™) |
| **Antihistamines**             | - brompheniramine  
- chlorpheniramine (Chlor-Phen®, Aller-Chlor®)  
- demastine (Travist Allergy®)  
- cyproheptadine (Periactin®)  
- dexampheniramine  
- diphenhydramine (Benadryl®)  
- dexchlorpheniramine (Polaramine®)  
- doxylamine (Unisom SleepTabs®)  
- hydroxyzine (Vistaril®, Atarax®)  
- promethazine (Phenergan®)  
- triprolidine (Triphost®)  
- meclizine | Potent anticholinergic properties can cause confusion, constipation, sedation, weakness, blood pressure changes, dry mouth, and urinary retention. Clearance is reduced with age, and tolerance develops when used as a hypnotic. | - fexofenadine (Allegra®)  
- levocetirizine (Xyzal®)  
- azelastine (Astelin®)  
- desloratadine (Clarinex®) |
| **Anti-infective**             | - nitrofurantoin (Macrobid®, Macroadan®, Furadantin®)  
| | Avoid long term use of >90 days due to risk of pulmonary toxicity. Lack of efficacy in patients with CrCl <60 ml/min due to inadequate drug concentration in the urine. | Alternative antibiotic is dependent on infection. |
| **Anti-Parkinson Agents**      | - benztropine (Cogentin®)  
- trihexyphenidyl (Atrane®) | More effective agents are available. | - carbidopa/levodopa (Sinemet, Atamet®)  
- rasagiline (Azilect®)  
- ropinirole (Requip®) |
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<tr>
<td>Antipsychotics, first (conventional) and second (atypical) generation</td>
<td>First-Generation • chlorpromazine • fluphenazine • haloperidol (Haldol(^)) • loxapine (Loxitane(^)) • molindone (Maban(^)) • perphenazine • pimozide (Drap(^)) • promazine • thiathiixene (Nevane(^)) • trifluoperazine • triflupromazine Second-Generation • aripiprazole (Abilify(^)) • asenapine (Saphris(^)) • clozapine (Clozaril(^)) • iloperidone (Fanapt(^)) • lurasidone (Latuda(^)) • olanzapine (Zyprexa(^)) • paliperidone (Invega(^)) • quetiapine (Seroquel(^)) • risperidone (Risperdal(^)) • ziprasidone (Geodon(^))</td>
<td>Increased risk of cerebrovascular accident and mortality in persons with dementia.</td>
<td>Avoid use for behavioral problems of dementia unless nonpharmacological options have failed and patient is threat to self or others.</td>
</tr>
<tr>
<td>Antispasmodics</td>
<td>• Atropine (excludes ophthalmic) • Dicyclomine • Scopolamine • Belladonna alkaloids • Hyoscymine • Clidinium-chlordiazepoxide • Propantheline</td>
<td>highly anticholinergic, effectiveness of therapy not known</td>
<td></td>
</tr>
<tr>
<td>Antithrombotics</td>
<td>• Ticlopidine • Dipyridamole, oral (dose not apply to the extended-release combination with aspirin)</td>
<td>Safer effective alternatives available May cause orthostatic hypotension, more effective options available</td>
<td>Clopidogrel (Plavix)</td>
</tr>
<tr>
<td>Barbiturates</td>
<td>• amobarbital • butabarbital • butalbital (Phrenilin(^), Esgic(^), Fioricet(^), Orbivan(^), Fiorinal(^)) • mephobarbital • secobarbital • pentobarbital • phenobarbital</td>
<td>Dependence; tolerance to sleep benefits; higher risk of adverse events (falls, fractures, confusion, and cognitive impairment) than other hypnotics; risk of overdose at low dosages.</td>
<td>No preferred agents exist within the drug class. Perform risk-benefit determination before use.</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>*Drugs not included in the HRM measure per PQA specifications. • chlordiazepoxide (Librium(^)) • chlordiazepoxide/amitriptyline (Limbitrol(^)) • clonazepam (Klonopin(^)) • clorazepate (Tranxene(^)) • diazepam (Valium(^)) • flurazepam (Dalmane(^))</td>
<td>Long half-life in elderly patients, producing prolonged sedation and confusion and increasing the risk of falls, and fractures. May be appropriate for seizure disorders, rapid eye movement sleep disorders, benzodiazepine withdrawal, ethanol withdrawal, severe generalized anxiety disorder, periprocedural anesthesia, and end-of-life care.</td>
<td>Short and intermediate-acting (e.g. alprazolam, lorazepam, oxazepam) are preferred if therapy is required. Avoid benzodiazepines for treatment of insomnia, agitation, or delirium.</td>
</tr>
<tr>
<td>Cardiovascular (other)</td>
<td>• dronedarone (Multaq(^)) *Drugs not included in the HRM measure per PQA specifications but best practice to avoid in the elderly. • digoxin (Lanoxin(^)) &gt;0.125mg/day • nifedipine (Adalat(^), Procardia(^)) - immediate release only</td>
<td>Worse outcomes are associated with use of dronedarone in patients who have permanent atrial fibrillation or heart failure. Digoxin &gt;0.125 mg has no additional benefit and may increase risk of toxicity. Nifedipine (immediate release) has a potential to cause hypotension.</td>
<td>Varies depending on indication Varies depending on indication Varies depending on indication nifedipine-long-acting (Adalat CC(^), Afeditab CR(^), Procardia XL(^)) or other calcium channel blocker</td>
</tr>
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</table>
### Endocrine
- desiccated thyroid

Cardiac adverse events.
- Conjugated estrogen, esterified estrogen, estradiol, estropipate (oral and transdermal)

No cardio protective effect. Significant risk of carcinogenic effects (breast and endometrial cancer).
- Premarin vaginal

Acceptable to use low-dose intravaginal estrogen for management of dyspareunia, lower urinary tract infections and other vaginal symptoms.
- megestrol (Megace ES®)

Minimal effect on weight gain; increases risk of thrombotic events and possibly death in older individuals.

### Narcotics
- meperidine (Demerol®)
- pentazocine

Not effective at commonly used oral doses; confusion, falls, dependency, withdrawal.
- hydrocodone
- oxycodone (Oxycontin®, Oxceta®)
- oxymorphone (Opana®)
- fentanyl transdermal patch (Duragesic®)

### Drug Class

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| Nonbenzodiazepine hypnotics | - eszopiclone (Lunesta®)  
- zaleplon (Sonata®)  
- zolpidem (Ambien®) | Minimal improvement in sleep latency and duration with similar adverse events to benzodiazepines. Avoid chronic use (> 90 days). | Chronic use (>90 days) is not recommended. |
| Skeletal Muscle Relaxants | - carisoprodol (Soma®)  
- chlorzoxazone (Parafon®, Remular-S®)  
- cyclobenzaprine (Flexeril®)  
- metaxalone (Skelaxin®)  
- methocarbamol (Robaxin®)  
- orphenadrine (Norflex®, Orfro®) | Most muscle relaxants are poorly tolerated by elderly patients by causing anticholinergic adverse effects, sedation, and risk of fracture. Effectiveness at dosages tolerated by older adults is questionable. | baclofen (Lioresal®, Gablofen®)  
- tizanidine (Zanaflex®) |
| Sulfonylurea, long-duration | - chlorpropamide (Diabinese®)  
- glyburide (DiaBeta®, Glynase® Prestabs®, Micronase®); includes combination products: glyburide/metformin (Glucovance®) | Has a prolonged half-life in elderly patients and could cause prolonged hypoglycemia. Chlorpropamide is the only oral hypoglycemic that can cause syndrome of inappropriate anti-diuretic hormone section. | glipizide (Glucotrol®)  
- glimepiride (Amaryl®) |
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<th>Disease or Condition</th>
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<td>Falls</td>
<td>Benzodiazepines, sedative hypnotics, tricyclic antidepressants, and antipsychotics</td>
<td>Adverse events such as cognitive impairment, sedation and confusion, increases risk of falls.</td>
<td>Reassess need for medication and eliminate or reduce dose. Selective serotonin reuptake inhibitors for depression.</td>
</tr>
<tr>
<td>Cognitive Impairment</td>
<td>Benzodiazepines, tricyclic antidepressants, antipsychotics (chronic and PRN use), sedating antihistamines, antimuscarinics, antispasmodics, antivertigo/antiemetic, skeletal muscle relaxants, and select antiparkinson agents</td>
<td>Anticholinergic medications are strongly associated with causing drug-induced delirium. Elderly adults with dementia are more likely to develop drug-induced cognitive impairment than healthy adults.</td>
<td>Depending on condition treated alternatives include: non-sedating antihistamines ([lexomenadine (Allegra®), azelastine(Astelin®)], selective serotonin reuptake inhibitors, dopamine agonists, or mirtazapine (Remeron®)</td>
</tr>
<tr>
<td>Chronic Renal Failure</td>
<td>NSAIDS and COX-II inhibitors</td>
<td>The inhibition of renal prostaglandin production could lead to acute and chronic nephrotoxic effects.</td>
<td>acetaminophen, saldate, lidocaine, low dose corticosteroids (inflammatory conditions) hydrocodone, morphine (Roxanol®, MS Contin®), oxycodone (Oxy IR®, Oxycontin®), fentanyl/transdermal (Duragesic®)</td>
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The medications listed may not apply to all patients or all clinical situations. Medications have different effects on different people. The information presented is not intended to override clinicians’ judgment. Highmark Inc. shall not be liable for any adverse effects or consequences resulting from the use or misuse of any medication listed in the Guide.

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2. HEDIS® 2013.

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