MASSACHUSETTS

Reference Guide

SELECTED HIGH-RISK MEDICATIONS TO AVOID IN PATIENTS 65 YEARS AND OLDER

MASSACHUSETTS

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The medications considered high risk included in the chart below should be avoided or used with caution in the senior population.

Use of high-risk medications can increase morbidity and mortality, decrease quality of life, and increase falls and fractures that are further associated with physical, functional, and social decline in the elderly.

According to the Centers for Medicare & Medicaid Services (CMS), the American Geriatrics Society, and the National Committee for Quality Assurance (NCQA), some of these drugs simply aren't effective enough to be routinely used or are no longer recommended because newer, safer alternatives are now available.

THERAPEUTIC CLASS AND HIGH-RISK MEDICATION(S)	DRUG(S) TO AVOID	REASON(S) FOR CONCERN	SELECTED FORMULARY ALTERNATIVES TO CONSIDER (will vary by indication and is not meant to replace your clinical judgment)
First Generation Antihistamines (as a single agent or as part of a combination product)	brompheniramine[1], carbinoxamine, chlorpheniramine[1], clemastine[1], cyproheptadine, dexchlorpheniramine, diphenhydramine[1], doxylamine[1], hydroxyzine[4], promethazine[4], triprolidine[1]	Potential anticholinergic properties; may cause sedation, constipation, and dry mouth and impair cognitive performance; reduced renal clearance in advanced age.	**For allergies:** cetirizine[1], fexofenadine[1], loratadine[1], steroidal nasal sprays[1] **For nausea/vomiting:** ondansetron[4] **For anxiety:** buspirone, Selective Serotonin Reuptake Inhibitors (SSRI), venlafaxine
Antiparkinson Agents, Anticholinergics	benztropine, trihexyphenidyl	Highly anticholinergic. Not recommended for prevention of Extrapyramidal Symptoms (EPS) with antipsychotics.	Apokyn[3], amantadine, bromocriptine, carbidopa, carbidopa/levodopa, entacapone, rasagiline, tolcapone, Zelapar
Antithrombotic	ticlopidine, dipyridamole (short-acting only)	**Ticlopidine:** Neutropenia/ thrombocytopenia, aplastic anemia, leukemia, agranulocytosis, eosinophilia, pancytopenia, bone marrow depression **Dipyridamole:** Orthostatic hypotension	Aspirin-dipyridamole, cilostazol, clopidogrel, Eliquis
Anti-infective	nitrofurantoin (when cumulative supply is greater than 90 days)	Potential for pulmonary toxicity; lack of efficacy in patients with CrCl <60mL/min due to inadequate drug concentration in the urine.	**For treatment:** ciprofloxacin, levofloxacin, moxifloxacin, ofloxacin, sulfamethoxazole/trimethoprim DS **For prophylaxis:** cranberry juice/extract[1], vitamin C (500-1000mg/day)[1]

Please see footnotes on pages 7 and 8.

THERAPEUTIC CLASS AND HIGH-RISK MEDICATION(S)	DRUG(S) TO AVOID	REASON(S) FOR CONCERN	SELECTED FORMULARY ALTERNATIVES TO CONSIDER (will vary by indication and is not meant to replace your clinical judgment)
Cardiovascular	**Alpha agonists:** methyldopa, guanabenz, guanfacine **Other:** digoxin (>0.125 mg/day), disopyramide, nifedipine (short-acting)	**Alpha-agonists:** Orthostatic hypotension, bradycardia, Central Nervous System (CNS) adverse effects **Digoxin:** Narrow therapeutic index, hypokalemia and toxicity due to reduced renal clearance in advanced age **Disopyramide:** anticholinergic effects may cause sedation, urinary retention, dry mouth and impair cognitive performance **Nifedipine:** excessive hypotension and constipation in elderly	**For alpha-agonists, disopyramide and nifedipine:** angiotensin receptor blockers, beta blockers, calcium channel blockers, long acting angiotensin converting enzyme inhibitors, nifedipine (long acting) **For digoxin:** Consider discontinuing use or reducing dose to 0.125mg/day.
CENTRAL NERVOUS SYSTEM			
Tertiary Tricyclic Antidepressant (as single agent or as a part of a combination product)	amitriptyline[4], clomipramine[4], doxepin[4], imipramine[4], trimipramine[4]	**Increased risk of anticholinergic side effects including:** sedation, orthostatic hypotension, dry mouth, blurred vision, and urinary retention.	**For depression/anxiety/Obsessive Compulsive Disorder (OCD):** bupropion, desipramine, nortriptyline, Selective Norepinephrine Reuptake Inhibitors (SNRIs)[4], SSRIs **For neuropathic pain/fibromyalgia:** duloxetine, gabapentin, Lyrica[4] **For migraines:** propranolol, topiramate[4]
First and Second Generation Antipsychotics	**Examples include (list not exhaustive):** aripiprazole, mesoridazine, risperidone, thioridazine, quetiapine, ziprasidone	**Risk varies by medication:** Increased risk of EPS including tardive dyskinesia, prolongation of the QTc interval, metabolic side effects, anticholinergic side effects, and stroke/ mortality in patients with dementia.	Avoid use for behavioral problems related to dementia in the elderly unless non-pharmacologic options have failed and patient is a threat to self or others.

Please see footnotes on pages 7 and 8.

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Barbiturates	amobarbital, butabarbital, butalbital[4], pentobarbital, phenobarbital[4], secobarbital	High rate of physical dependence, increased risk of falls, tolerance to sleep develops, risk of overdose.	**For seizures:** carbamazepine, divalproex, lamotrigine, levetiracetam **For sleep:** Consider behavioral interventions. **For headache:** naratriptan[2], sumatriptan[2]
Central Nervous System (other)	chloral hydrate, meprobamate	**Chloral hydrate:** increased risk of cognitive impairment **Meprobamate:** increased risk of delirium, falls, and fractures. High rate of physical dependence and highly sedating	**For chloral hydrate:** Consider behavioral interventions for insomnia. **For meprobamate:** buspirone, SNRIs[4], SSRIs,
Nonbenzodiazepine hypnotics (when cumulative supply is greater than 90 days)	eszopiclone[2], zaleplon[2], zolpidem[2]	Increased risk of cognitive impairment, delirium, falls, fractures and motor vehicle accidents; minimal improvement in sleep latency and duration.	Consider behavioral interventions focusing on proper sleep hygiene. When use is clinically necessary, consider lowest dose and duration.
Vasodilators	ergoloid mesylates, isoxsuprine	Increased risk of orthostatic hypotension in elderly. Not shown to be effective in stroke prevention.	**For stroke prevention:** aspirin, aspirin-dipyridamole, clopidogrel **For dementia:** donepezil, galantamine, rivastigmine
ENDOCRINE			
Endocrine	desiccated thyroid	May increase risk of cardiac events and uneven absorption rate	levothyroxine, levoxyl, unithroid
	estrogens with or without progesterone (oral and topical patch products only)	Lack of cardio-protective effect in older women and has carcinogenic potential (breast and endometrial cancer).	**For vaginal symptoms:** Estrace vaginal cream, yuvafem **For bone density:** alendronate[2], calcium and vitamin D supplements[1], raloxifene, risedronate[2]

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Sulfonylureas (long-duration)	chlorpropamide, glyburide	Greater risk of severe and prolonged hypoglycemia in older adults. **Chlorpropamide** can cause hyponatremia and Syndrome of Inappropriate Antidiuretic Hormone Secretion (SIADH) in elderly.	glimepiride, glipizide
Gastrointestinal	promethazine[4], trimethobenzamide[4]	Anticholinergic adverse effects including urinary retention causing reduced renal clearance and risk of EPS.	ondansetron[4]
PAIN MEDICATIONS			
Opioid Analgesics	meperidine, pentazocine	Increased risk of respiratory depression, sedation, and impaired cognitive performance which increases the risk of falls and confusion. **Meperidine:** increased neurotoxicity **Pentazocine:** increased hallucinations	**For moderate pain:** hydrocodone/acetaminophen, Non-Steroidal Anti-inflammatory Drugs (NSAIDs), tramadol **For severe pain:** hydromorphone, morphine, oxycodone
Non-cyclooxygenase (COX)—selective NSAIDs	indomethacin, ketorolac	Increased risk of gastrointestinal bleeding and peptic ulcer disease in high-risk groups.	Non-medicinal alternatives (like ice and heat therapy) to alleviate moderate pain should be considered, NSAIDs[5], tramadol.
Skeletal Muscle Relaxants (as single agent or as part of a combination product)	carisoprodol[4], chlorzoxazone[4], cyclobenzaprine[4], metaxalone[4], methocarbamol[4], orphenadrine[4]	Poorly tolerated because of anticholinergic adverse effects, cognitive impairment, sedation, weakness, and risk of falls/fractures. They also have the potential for misuse.	**For spasms:** baclofen, dantrolene, tizanidine **For musculoskeletal pain:** diclofenac sodium 1% gel, duloxetine

Footnotes:

1. Available over the counter.
2. Quantity Limits limits may apply. Please see the formulary for specific agent.
3. Limited pharmacy availability or not available through mail order.
4. Prior authorization may be required. Please see the formulary for specific agent.
5. Gastroprotective therapy recommended for long-term use.

CHART AND MEDICATION REFERENCES

Blue Cross Blue Shield of Massachusetts Medicare HMO Blue 2018 Formulary

Express Scripts document—Safer Alternatives to Selected High Risk Medications in the Elderly, 05/2013

HRM-2015 SR Medications—Acumen-LLC/Patient Safety Analysis: HRM Measures—report User Guide

NCQA High Risk Medications—as specified by NCQA's HEDIS Measure: Use of High Risk Medications in the Elderly

Brand-name drugs are capitalized ("Example Drug") and generic drugs are lower cased ("example drug")

CITATIONS

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Families USA. 2000. Cost overdose: Growth in drug spending for the elderly, 1992–2010. Families USA, Washington, D.C., p. 2.

Fick, D.M., et al. 2003. Updating the Beers criteria for potentially inappropriate medication use in older adults. Arch Intern Med, 163: 2716–24.

American Geriatrics Society 2012 Beers Criteria Update Expert Panel. American Geriatrics Society updated Beers Criteria for potentially inappropriate medication use in older adults. J Am Geriatr Soc. 2012 Apr;60(4):616-31

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