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Inland Empire Health Plan

IEHP High Risk Medication: Drug Alternative(s) Reference Guide

In order to better assist our providers to ensure optimal outcomes for our elderly members, IEHP provided the **High Risk Medication Drug Alternative(s) Guide**, which included the American Geriatrics Society (AGS) Beers Criteria recommendations and potentially safer alternatives.

If medically appropriate, please consider prescribing a safer alternative for your patients over 65 years old.

What are High-Risk Medications (HRMs)?

- HRMs, identified by the AGS Beers Criteria and the Pharmacy Quality Alliance, have been associated with poor health outcomes in the elderly, including cognitive impairment, falls and mortality.
- HRMs are best avoided in older adults (i.e. age ≥ 65) in general.
- Both the Centers for Medicare and Medicaid Services (CMS) and the Healthcare Effectiveness Data and Information Set (HEDIS) have quality measures that focus on decreasing the use of HRMs in the elderly.

Summary of 2015 American Geriatrics Society Beers Criteria Update

- Guidance on avoiding a list of potentially inappropriate medications and 13 harmful drug-drug interactions for people aged 65 and older
- List of 20 medications to avoid or adjust based on kidney function
- Precautions on three new medications and 2 new drug classes for the elderly with specific medical conditions

Please also refer to the 2015 AGS Beers Criteria for further information:

- www.americangeriatrics.org → 2015 AGS Beers Criteria

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High Risk Medications to Avoid in the Elderly: Beers Recommendations and Potential Drug Alternatives

Drug Class/ Therapeutic Category	**Drug Names**	**Precaution/Risk[1, 2]**	**Beers Recommendation[1,2]**	**Medicare Formulary Alternatives and OTC Alternatives[3,4,5]** OTC= available over the counter
Analgesics	▪ Meperidine	Not effective in commonly used dosages; may have higher risk of neurotoxicity; safer alternatives available	Avoid, especially in patients with chronic kidney disease	Mild Pain: ▪ acetaminophen (OTC) ▪ NSAID (OTC) Moderate or Severe Pain: ▪ hydrocodone/ acetaminophen ▪ oxycodone/ acetaminophen ▪ tramadol
Anti-Anxiety Agents	▪ Meprobamate ▪ Meprobamate-Aspirin	High rate of physical dependence; very sedating	Avoid	General Anxiety Disorder: ▪ buspirone ▪ paroxetine ▪ venlafaxine Panic Disorder: ▪ fluoxetine, paroxetine, sertraline, venlafaxine OCD: ▪ fluoxetine, paroxetine, sertraline
Antiarrhythmics	▪ Disopyramide	Potent negative inotrope which may induce heart failure in older adults; other antiarrhythmic drugs preferred	Avoid	Alternatives based on diagnosis: ▪ propafenone ▪ amiodarone ▪ dofetilide (Tikosyn ®) ▪ dronedarone (Multaq ®) ▪ flecainide ▪ mexiletine ▪ procainamide ▪ quinidine ▪ sotalol

Antiemetics	▪ Trimethobenzamide	Low efficacy, can cause extrapyramidal effects	Avoid	▪ granisetron ▪ ondansetron ▪ chlorpromazine ▪ prochlorperazine ▪ promethazine
Antihistamines	▪ Brompheniramine Carbinoxamine ▪ Chlorpheniramine ▪ Clemastine ▪ Cyproheptadine ▪ Dexbrompheniramine Diphenhydramine (Oral) ▪ Doxylamine ▪ Doxylamine/ pyridoxine ▪ Hydroxyzine ▪ Promethazine ▪ Triprolidine/ pseudoephedrine	Highly anticholinergic, clearance reduced with age	Avoid Use of diphenhydramine in situations such as acute severe allergic reaction may be appropriate	Allergic Rhinitis: ▪ levocetirizine ▪ cetirizine ▪ fexofenadine (OTC) ▪ azelastine Allergic Dermatoses: ▪ oatmeal baths (OTC) ▪ calamine lotion ▪ loratadine Anti-emetic: ▪ Refer to antiemetics section
Antiparkinsonian Agents	▪ Benztropine (Oral) ▪ Trihexyphenidyl	Not recommended for prevention of extrapyramidal symptoms with antipsychotics; more-effective agents available for treatment of Parkinson Disease	Avoid	▪ carbidopa/ levodopa (alone or in combination with entacapone/ tolcapone) ▪ Dopamine agonists ○ rotigotine (Neupro®), apomorphine (Apokyn®), bromocriptine, ropinirole, pramipexole ▪ MAO-B inhibitors ○ rasagiline (Azilect), selegiline
Antipsychotics	▪ Mesoridazine ▪ Perphenazine-Amitriptyline ▪ Thioridazine	Increased risk of cerebrovascular accident (stroke), greater rate of cognitive decline and mortality in persons with dementia.	Avoid, except for Schizophrenia, bipolar disorder, or short-term use as antiemetic during chemotherapy	▪ aripiprazole ▪ risperidone ▪ olanzapine ▪ quetiapine ▪ ziprasidone [1]Avoid antipsychotics in dementia or delirium unless nonpharmacological interventions have failed or not possible

				AND older adult is threatening substantial harm to self or others
Antispasmodics	▪ Atropine (excludes ophthalmic) ▪ Belladonna alkaloids ▪ Hyoscyamine ▪ Scopolamine	Highly anticholinergic; uncertain effectiveness	Avoid	GI disorders: ▪ glycopyrrolate Urinary System Disorder ▪ oxybutynin ▪ tolterodine ▪ trospium
Antithrombotics	▪ Dipyridamole, oral short- acting (does not apply to extended release combination with aspirin)	May cause orthostatic hypotension; more effective alternative available	Avoid	▪ clopidogrel ▪ ticagrelor ▪ aspirin (OTC) ▪ aspirin/ dipyridamole (Aggrenox®)
Anti-infective	▪ Nitrofurantoin	Potential for pulmonary toxicity, heptatotoxicity, and peripheral neuropathy, especially with long term use; safer alternative available	Avoid in patients with CrCl<30mL/min or for long term bacteria suppression	UTI: ▪ SMX/TMP ▪ ciprofloxacin, levofloxacin ▪ cephalexin, cefuroxime
Barbiturates	▪ Amobarbital ▪ Butabarbital ▪ Butalbital (in combination with acetaminophen/ caffeine/ aspirin/ codeine ▪ Mephobarbital ▪ Pentobarbital ▪ Phenobarbital ▪ Secobarbital	High rate of physical dependence, tolerance to sleep benefits, greater risk of overdose at low doses	Avoid	Sleep: ▪ Refer to hypnotic section Anxiety: ▪ Refer to anti-anxiety section
Benzodiazepines	▪ Chlordiazepoxide (alone or in combination with amitriptyline or	May be appropriate for seizure disorders, rapid eye movement sleep	Avoid	Sleep: ▪ Refer to hypnotic section

	clidinium)	disorders, benzodiazepine withdrawal, ethanol withdrawal, severe generalized anxiety disorder, and periprocedural anesthesia		Anxiety: ▪ Refer to anti-anxiety section [1]All benzodiazepines increase risk of cognitive impairment, delirium, falls, fractures, and motor vehicle crashes in older adults
Calcium Channel Blocker	▪ Nifedipine, immediate release	Potential for hypotension; risk of precipitating myocardial ischemia	Avoid	▪ nifedipine ER ▪ felodipine ER ▪ amlodipine
Cardiac Glycosides	▪ Digoxin > 0.25mg	Use in atrial afibrillation but not as a first-line agent. More effective alternatives exist; may be associated with increased mortality	Avoid as first-line therapy Avoid dosages >0.125 mg/d for atrial fibrillation or heart failure	Atrial Fibrillation: ▪ Refer to the antiarrhythmic section ▪ Re-evaluate dosage ▪ Use digoxin at dose ≤ 0.125mg Heart Failure: ▪ Re-evaluate appropriateness and dosage for this medication ▪ Use digoxin at dose ≤ 0.125mg
		Use in heart failure, questionable effects and may be associated with increased mortality; higher dosages not associated with additional benefit and may increase risk of toxicity		
		Decreased renal clearance, may need further dose reduction in patients with Stage 4 or 5 chronic kidney disease		
Central alpha-blockers	▪ Guanfacine ▪ Methyldopa ▪ Reserpine (>0.1 mg/d)	High risk of adverse CNS effects; may cause bradycardia and orthostatic hypotension; not recommended as routine treatment for hypertension	Avoid	▪ Alternative hypertensive medications available on formulary ○ ACE-I, ARB, hydrochlorothiazide, beta-blocker, calcium channel blocker ADHD: ▪ methylphenidate ER,

				dextroamphetamine/amphetamine XR
Hormones	▪ Estrogens with or without progestins (oral and topical patch)	Evidence of carcinogenic potential (breast and endometrium); lack of cardioprotective effect and cognitive protection in older women	Avoid oral and topical patch Vaginal cream or tablets: acceptable to use low-dose intravaginal estrogen for management of dyspareunia, lower urinary tract infections and other vaginal symptoms	▪ Conjugated estrogen vaginal cream (Premarin®)
	▪ Megestrol	Minimal effects on weight; increases risk of thrombotic events and possibly death in older adults	Avoid	▪ Treatment of cachexia: ○ oxandrolone, dronabinol
Hypnotics	▪ Chloral hydrate	Tolerance occurs within 10 days; risk of overdose outweighs benefits	Avoid	▪ trazodone ▪ ramelteon (Rozerem®) ▪ temazepam
	▪ Eszopiclone ▪ Zolpidem ▪ Zaleplon	Similar adverse events to benzodiazepines in older adults (e.g., delirium, falls, fractures); minimal improvement in sleep latency and duration	Avoid	
Nonsteroidal Anti-inflammatory Agent	▪ Indomethacin ▪ Ketorolac, includes parenteral	Indomethacin more likely to cause adverse CNS effects and the most adverse effects compared to other NSAIDs Increased risk of	Avoid	▪ acetaminophen ▪ celecoxib ▪ flurbiprofen ▪ ibuprofen ▪ sulindac ▪ diclofenac

		gastrointestinal bleeding, peptic ulcer disease, and acute kidney injury in older adults		
Opioid Partial Agonists	▪ Pentazocine	Causes CNS adverse effects more commonly than other opioid analgesic drugs; safer alternative available	Avoid	▪ hydrocodone/ acetaminophen ▪ oxycodone/ acetaminophen ▪ tramadol
Peripheral Vasodilator	▪ Isoxsuprine	Lack of efficacy	Avoid	▪ Non-pharmacological therapy: o Exercise rehabilitation
Psychotherapeutic and Neurological Agents	▪ Ergoloid Mesylates	Lack of efficacy	Avoid	Alzheimer's Disease: ▪ galantamine ▪ memantine ▪ donepezil ▪ galantamine ▪ rivastigmine
Skeletal Muscle Relaxants	▪ Carisoprodol (alone or in combination with aspirin or codeine) ▪ Chlorzoxazone ▪ Cyclobenzaprine ▪ Metaxalone ▪ Methocarbamol ▪ Orphenadrine (alone or in combination with aspirin or caffeine)	Poorly tolerated by older adults; questionable effectiveness at dosages tolerated by older adults	Avoid	Spasticity: ▪ baclofen ▪ dantrolene ▪ tizanidine
Sulfonylureas, long duration	▪ Chlorpropamide	Prolonged half –life in older adults; can cause prolonged hypoglycemia; causes syndrome of inappropriate antidiuretic hormone secretion	Avoid	▪ glipizide ▪ glimepiride

	▪ Glyburide (alone or in combination with metformin)	Higher risk of severe prolonged hypoglycemia in older adults	Avoid	
Thyroid Hormones	▪ Desiccated Thyroid	Concerns about cardiac effects; safer alternative available	Avoid	▪ levothyroxine (Levoxyl ®, Synthroid ®, Unithroid ®)
Tricyclic agents	▪ Amitriptyline ▪ Clomipramine ▪ Doxepin >6 mg/d ▪ Imipramine ▪ Trimipramine	Highly anticholinergic, sedating, and causes orthostatic hypotension; safety profile of low-dose doxepin (≤6 mg/d) comparable with that of placebo	Avoid	Alternative TCA: ▪ nortriptyline Depression: ▪ citalopram, fluoxetine, paroxetine, sertraline, venlafaxine, bupropion Neuropathic Pain: ▪ pregabalin (Lyrica ®), gabapentin, duloxetine OCD: ▪ fluoxetine, fluvoxamine, sertraline Insomnia: ▪ refer to hypnotic section

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