

Did You Know?

High Risk Medications

November 2024

From the CMS MDS Manual – N0415: High-Risk Drug Classes: Use and Indication

Health-Related Quality of Life:

- Medications are an integral part of the care provided to residents of nursing homes. They are administered to try to achieve various outcomes, such as curing an illness, diagnosing a disease or condition, arresting or slowing a disease's progress, reducing or eliminating symptoms, or preventing a disease or symptom.
- Residents taking medications in these medication categories and pharmacologic classes are at risk of side effects that can adversely affect health, safety, and quality of life.
- While assuring that only those medications required to treat the resident's assessed condition are being used, it is important to assess the need to reduce these medications wherever possible and ensure that the medication is the most effective for the resident's assessed condition.
- As part of all medication management, it is important for the interdisciplinary team to consider nonpharmacological approaches.
 - Educating the nursing home staff and providers about non-pharmacological approaches in addition to and/or in conjunction with the use of medication may minimize the need for medications or reduce the dose and duration of those medications.

For residents' ordered medications from the drug classes below considered 'High-Risk' by CMS:

1. Target symptoms and goals for use of these medications should be established for each resident. Progress toward meeting the goals should be evaluated routinely.
2. Possible adverse effects of these medications should be well understood by nursing staff. Educate nursing home staff to be observant for these adverse effects.
3. Implement systematic monitoring of each resident taking any of these medications to identify adverse consequences early, add documentation to the residents' care plan.

A review of these high-risk drug classes, with possible adverse reactions to monitor for, and conditions that may increase adverse effect potential are included in this article.

*For additional information, consult the MDS-3.0 RAI Manual v1.19.1 Section N: Medications available from: <https://www.cms.gov/files/document/finalmds-30-rai-manual-v1191october2024.pdf>

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High Risk Medication Class: Opioids

Drugs in this class include but are not limited to:

Hydrocodone/Acetaminophen	Codeine	Morphine	Tramadol
Oxycodone/Acetaminophen	Oxycodone	Oxymorphone	Buprenorphine
Codeine/Acetaminophen	Hydromorphone	Fentanyl	Methadone

Risk Factors - These increase the potential for adverse drug events:

- Opioid naive
- Opioids used in combination with other CNS depressants (i.e. gabapentinoids, benzodiazepines)
- History of opioid abuse
- Opioid tolerance
- Severe Pain
- Low fluid intake / dehydration
- Low body weight
- History of head injury, traumatic brain injury or seizures
- Recent abdominal surgery
- Advanced age
- Decreased mobility
- Dementia / Parkinson's / MS / quadriplegia

Possible side effects include but are not limited to:

- Falls
- Hallucinations
- Delusions
- Disorientation / confusion
- Light-headedness
- Drowsiness
- Vertigo / Dizziness
- Lethargy or somnolence
- Unresponsiveness
- Decreased blood pressure, pulse, pulse oximetry, respirations
- Severe constipation, ileus, or impaction
- Nausea
- Agitation

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High Risk Medication Class: Anticoagulants & Antiplatelets

Drugs in this class include but are not limited to:

Warfarin	Eliquis (apixaban)	Plavix (Clopidogrel)
Pradaxa (dabigatran)	Xarelto (rivaroxaban)	Aspirin
Heparin	Enoxaparin	Brilinta (Ticagrelor)

Risk Factors – These increase the potential for adverse drug events:

- Anticoagulant, antiplatelet or thrombolytic medication use
- Concurrent use with SSRI or SNRI
- History of stroke or GI bleed
- NSAID medication use while on anticoagulants
- Antibiotics while on anticoagulants
- Amiodarone use while on anticoagulants
- Dietary changes affecting vitamin K intake (warfarin)

Possible side effects include but are not limited to:

- Bruising
- Bleeding (sometimes fatal)
- Bleeding from the nose, gums, wounds, surgical sites, IV site
- Low platelet count
- Blood in urine, feces or vomit
- Hypotension
- Ocular hemorrhage

High Risk Medication Class: Diabetes Medication

Drugs in this class include but are not limited to:

Insulin			
Lantus/Toujeo/Basaglar (Glargine)	Humalog/Admelog/Lyumjev (Lispro)	Novolog/Fiasp (Aspart)	Levemir (Detemir)
Tresiba (Degludec)	Humulin N (Isophane insulin NPH)	Humulin R (Regular insulin)	Novolog Mix 70/30

Hypoglycemics			
Metformin	Januvia (Sitagliptin)	Onglyza (Saxagliptin)	Tradjenta (Linagliptin)
Glipizide	Jardiance (Empagliflozin)	Farxiga (dapagliflozin)	Invokana (canagliflozin)
Glyburide	Glimepiride	Trulicity	Ozempic
Repaglinide	Acarbose	Pioglitazone	Victoza

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High Risk Medication Class: Diabetes Medication *continued*

Risk Factors – These increase the potential for adverse drug events:

- Insulin use, especially sliding scale
- Decrease in oral intake while taking antidiabetic medication
- Infection
- Concurrent illness
- Frequent refusals of medication
- Multiple hypoglycemic agent use

Possible side effects include but are not limited to:

- Hypoglycemia
- Falls
- Headache
- Shakiness, nervousness, sweating
- Change in mental status
- Hunger
- Nausea
- Weakness
- Incoordination
- Unconsciousness
- Seizures
- Rapid Heartbeat
- Ketoacidosis
- Diarrhea

High Risk Medication Class: Antibiotics

Drugs in this class include but are not limited to:

Amoxicillin	Cephalexin	Cefdinir	Doxycycline
Sulfamethoxazole-Trimethoprim	Amoxicillin-Clavulonic Acid	Azithromycin	Ciprofloxacin
Vancomycin	Nitrofurantoin	Clindamycin	Levofloxacin

Risk Factors – These increase the potential for adverse drug events:

- History of renal disease or insufficiency
- History of hepatic disease or insufficiency
- Advanced age
- Dehydration
- Electrolyte imbalance
- Previous infection with C. Diff.

Possible side effects include but are not limited to:

- Diarrhea
- Loss of appetite
- Flushing
- Rash
- Elevated kidney or liver function tests
- Elevated serum potassium
- Decrease in platelets
- Nausea / vomiting
- Dizziness
- Lethargy
- Ventricular arrhythmias
- Confusion
- Secondary infections (Candidiasis, C. difficile)

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High Risk Medication Class: Diuretics

Drugs in this class include but are not limited to:

Furosemide	Bumetanide	Hydrochlorothiazide
Metolazone	Indapamide	Chlorthalidone
Torsemide	Spirolactone	Eplerenone

Risk Factors – These increase the potential for adverse drug events:

- Advanced age
- Dependence in ADLs (especially eating)
- Diagnosis of dementia
- Fluid Restrictions
- Recent vomiting or diarrhea
- Hot weather
- Use of medical devices that increase fluid needs (air-fluidized mattress)

Possible side effects include but are not limited to:

- Abnormal electrolytes
- Dry skin and mucous membranes
- Thirst
- Confusion
- Concentrated urine / decreased output
- Lethargy
- Low blood pressure / orthostatic hypotension
- Muscle cramps
- Orthostatic hypotension
- Renal failure
- Azotemia

High Risk Medication Class: Anticonvulsants

Drugs in this class include but are not limited to:

Phenytoin	Lamotrigine	Oxcarbazepine
Levetiracetam	Phenobarbital	Gabapentin
Lacosamide	Divalproex	Topiramate
Primidone	Carbamazepine	Zonisamide
Diazepam	Clonazepam	Clobazam

Risk Factors – These increase the potential for adverse drug events:

- Advanced age
- Kidney impairment
- Liver impairment
- Concurrent administration of antidepressants, benzodiazepines, antibiotics

Possible side effects include but are not limited to:

- Drowsiness
- Nausea / vomiting
- Weight gain or loss
- Severe mental status or mood changes
- Changes in gait, balance or coordination
- Blurred vision
- Fatigue / hypersomnia

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High Risk Medication Class: Psychotropics

Drugs in this class include but are not limited to:

ANTISPYCHOTIC		
aripiprazole (Abilify)	lumateperone (Caplyta)	perphenazine (Trilafon)
asenapine (Saphris)	lurasidone (Latuda)	quetiapine (Seroquel)
chlorpromazine (Thorazine)	olanzapine (Zyprexa)	risperidone (Risperdal)
clozapine (Clozaril)	ziprasidone (Geodon)	thioridazine (Mellaril)
fluphenazine (Prolixin)	loxapine (Loxitane)	thiothixene (Navane)
haloperidol (Haldol)	paliperidone (Invega)	trifluoperazine (Stelazine)
iloperidone (Fanapt)	Pimavanserin (Nuplazid)	Brexpiprazole (Rexulti)
ANTIDEPRESSANT		
bupropion (Wellbutrin/ Zyban)	fluoxetine (Prozac)	paroxetine (Paxil)
citalopram (Celexa)	amitriptyline (Elavil)	sertraline (Zoloft)
desipramine (Norpramin)	imipramine (Tofranil)	trazodone (Desyrel)
doxepin (Silenor)	mirtazapine (Remeron)	venlafaxine (Effexor)
duloxetine (Cymbalta)	nefazodone (Serzone)	vilazodone HCL (Viibryd)
escitalopram (Lexapro)	nortriptyline (Pamelor)	vortioxetine (Trintellix)
ANXIOLYTIC		
alprazolam (Xanax)	diazepam (Valium)	oxazepam (Serax)
bupirone (BuSpar)	lorazepam (Ativan)	clonazepam (Klonopin)
chlordiazepoxide (Librium)	clorazepate (Tranxene)	fluvoxamine (Luvox)
SEDATIVE / HYPNOTIC		
flurazepam (Dalmane)	estazolam (ProSom)	ramelteon (Rozerem)
zaleplon (Sonata)	eszopiclone (Lunesta)	temazepam (Restoril)
zolpidem (Ambien)	lemborexant (Dayvigo)	triazolam (Halcion)

Risk Factors - These increase the potential for adverse drug events:

- PRN or routine use of psychotropic medication
- Use of more than one psychotropic medication including more than one drug from the same class or different class
- Advanced age
- Polypharmacy
- Dementia / cognitive impairment
- ADL dependence

Possible side effects include but are not limited to:

- Falls
- Sedation
- Confusion
- Cardiac arrhythmias
- Orthostatic hypotension
- Destabilized blood sugar
- Akathisia
- Parkinsonism
- Anticholinergic effects
- Metabolic syndrome

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Narrow Therapeutic Index/High Risk for Drug Toxicity

Examples of these drugs include but are not limited to:

Lithium	Valproic Acid	Digoxin
Levothyroxine	Theophylline	Phenytoin
	Warfarin	

Risk Factors – These increase the potential for adverse drug events:

- Advanced age
- History of hepatic impairment or disease
- History of renal impairment or injury
- Hypokalemia
- Hypomagnesaemia
- Dehydration
- Decreased PO intake
- Hyperkalemia

Possible side effects include but are not limited to:

- Severe mental status or mood changes
- Changes in gait/balance or coordination
- Drowsiness
- Loss of consciousness
- Cardiac dysrhythmia
- Slurred speech
- Seizures
- Nausea / vomiting
- Diarrhea
- Jaundice
- Abdominal pain
- Visual disturbances

References:

1. CMS's MDS-3.0 RAI Manual v1.19.1 Section N: Medications: <https://www.cms.gov/files/document/finalmids-30-rai-manual-v1191october2024.pdf>
2. Clinical Pharmacology. Drug Monographs, various. Accessed Online, October 2024. Available from: <https://www.clinicalkey.com/pharmacology/>