

**Job Aid 6 – Table I – Medication
Issues of Particular Relevance**

Table I – Medication Issues of Particular Relevance

This table lists alphabetically, examples of some categories of medications that have the potential to cause clinically significant adverse consequences, that may have limited indications for use, require specific monitoring, and which warrant careful consideration of relative risks and benefits. Inclusion of a medication in this table does not imply that it is contraindicated for every resident. Medications are identified by generic rather than trade names.

NOTE: This table is based on review of a variety of pharmaceutical references. It does not include all categories of medications or all medications within a category, and does not address all issues or considerations related to medication use, such as dosages. Medications other than those listed in this table may present significant issues related to indications, dosage, duration, monitoring, or potential for clinically significant adverse consequences.

Since medication issues continue to evolve and new medications are being approved regularly, it is important to refer to a current authoritative source for detailed medication information such as indications and precautions, dosage, monitoring, or adverse consequences.

The listed doses for psychopharmacological medications are applicable to older individuals. The facility is encouraged to initiate therapy with lower doses and, when necessary, only gradually increase doses. The facility may exceed these doses if it provides evidence to show why higher doses were necessary to maintain or improve the resident's function and quality of life.

Medication	Issues and Concerns
Analgesics	
acetaminophen	<p>Dosage / Adverse Consequences</p> <ul style="list-style-type: none"> • Daily doses greater than 4 grams/day from all sources (alone or as part of combination products) may increase risk of liver toxicity <p>Monitoring</p> <ul style="list-style-type: none"> • For doses greater than the maximum recommended daily dose, documented assessment should reflect periodic monitoring of liver function and indicate that benefits outweigh risks
<p>Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)</p> <p>Non-selective NSAIDs, e.g.,</p> <ul style="list-style-type: none"> • aspirin • diclofenac • diflunisal 	<p>Indications</p> <ul style="list-style-type: none"> • NSAID, including COX-2 inhibitors, should be reserved for symptoms and/or inflammatory conditions for which lower risk analgesics (e.g., acetaminophen) have either failed, or are not clinically indicated <p>Exception: Use of low dose aspirin (81–325 mg/day) as prophylactic treatment for cardiovascular events such as myocardial infarct or stroke may be appropriate</p>

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Medication	Issues and Concerns
<ul style="list-style-type: none"> • ibuprofen • indomethacin • ketorolac • meclofenamate • naproxen • piroxicam • salicylates • tolmetin <p>Cyclooxygenase-II (COX-2) inhibitors, e.g.,</p> <ul style="list-style-type: none"> • celecoxib 	<p>Interactions</p> <ul style="list-style-type: none"> • Aspirin may increase the adverse effects of COX-2 inhibitors on the gastrointestinal (GI) tract • Some NSAIDS (e.g., ibuprofen) may reduce the cardioprotective effect of aspirin <p>Monitoring</p> <ul style="list-style-type: none"> • Monitor closely for bleeding when ASA > 325 mg/day is being used with another NSAID or when NSAIDS are used with other platelet inhibitors or anticoagulants (See See 42 CFR 483.60(c) F428 for Table of Common Medication-Medication Interactions in Long Term Care) <p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause gastrointestinal (GI) bleeding in anyone with a prior history of, or with increased risk for, GI bleeding. Compared to nonselective NSAIDs, COX-2 inhibitors may reduce—but do not eliminate—risk of gastrointestinal bleeding • May cause bleeding in anyone who is receiving warfarin, heparin, other anticoagulants, or platelets inhibitors (e.g., ticlopidine, clopidogrel, and dipyridamole) • Any NSAID may cause or worsen renal failure, increase blood pressure, or exacerbate heart failure • Prolonged use of indomethacin, piroxicam, tolmetin, and meclofenamate should be avoided because of central nervous system side effects, e.g., headache, dizziness, somnolence, confusion
<p>Opioid analgesics</p> <p>Short-acting, e.g.,</p> <ul style="list-style-type: none"> • codeine • fentanyl • hydrocodone • hydromorphone • meperidine • morphine • oxycodone <p>Long-acting, e.g.,</p> <ul style="list-style-type: none"> • fentanyl, transdermal • methadone 	<p>Indications</p> <ul style="list-style-type: none"> • The initiation of longer-acting opioid analgesics is not recommended unless shorter-acting opioids have been tried unsuccessfully, or titration of shorter-acting doses has established a clear daily dose of opioid analgesic that can be provided by using a long-acting form • Meperidine is not an effective oral analgesic in doses commonly used in older individuals <p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause constipation, nausea, vomiting, sedation, lethargy, weakness, confusion, dysphoria, physical and psychological dependency, hallucinations and unintended respiratory depression, especially in individuals with

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<ul style="list-style-type: none"> • morphine sustained release • oxycodone, sustained release 	<p>compromised pulmonary function. These can lead to other adverse consequences such as falls</p> <ul style="list-style-type: none"> • Meperidine use (oral or injectable) may cause confusion, respiratory depression even with therapeutic analgesic doses • Active metabolite of meperidine (normeperidine) accumulates with repeated use and has been associated with seizures
pentazocine	<p>Indications</p> <ul style="list-style-type: none"> • Limited effectiveness because it is a partial opiate agonist-antagonist; is not recommended for use in older individuals <p>Adverse Consequences</p> <ul style="list-style-type: none"> • This opioid analgesic causes central nervous system side effects (including confusion and hallucinations) more commonly than other opioid analgesics • May cause dizziness, lightheadedness, euphoria, sedation, hypotension, tachycardia, syncope
propoxyphene and combination products with aspirin or acetaminophen	<p>Indications</p> <ul style="list-style-type: none"> • Offers few analgesic advantages over acetaminophen, yet has the adverse effects, including addiction risk, of other opioid medications; is not recommended for use in older individuals <p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause hypotension and central nervous system effects (e.g., confusion, drowsiness, dizziness) that can lead to other adverse consequences such as falls
Antibiotics	
All antibiotics	<p>Indications</p> <ul style="list-style-type: none"> • Use of antibiotics should be limited to confirmed or suspected bacterial infection <p>Adverse Consequences</p> <ul style="list-style-type: none"> • Any antibiotic may cause diarrhea, nausea, vomiting, anorexia, and hypersensitivity/allergic reactions • Antibiotics are non-selective and may result in the eradication of beneficial microorganisms and the emergence of undesired ones, causing secondary

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	infections such as oral thrush, colitis, and vaginitis
Parenteral vancomycin and aminoglycosides, e.g., <ul style="list-style-type: none"> • amikacin • gentamycin/gentamicin • tobramycin 	<p>Monitoring</p> <ul style="list-style-type: none"> • Use must be accompanied by monitoring of renal function tests (which should be compared with the baseline) and by serum medication concentrations • Serious adverse consequences may occur insidiously if adequate monitoring does not occur <p>Exception: Single dose administration prophylaxis</p> <p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause or worsen hearing loss and renal failure
nitrofurantoin	<p>Indications</p> <ul style="list-style-type: none"> • It is not the anti-infective/antibiotic of choice for treatment of acute urinary tract infection or prophylaxis in individuals with impaired renal function (CrCl <60 ml/min) because of ineffectiveness and the high risk of serious adverse consequences <p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause pulmonary fibrosis (e.g., symptoms including dyspnea, cough) and peripheral neuropathy
Fluoroquinolones, e.g., <ul style="list-style-type: none"> • ciprofloxacin • levofloxacin • moxifloxacin • ofloxacin 	<p>Indications</p> <ul style="list-style-type: none"> • Use should be avoided in individuals with prolonged QTc intervals or who are receiving antiarrhythmic agents in class Ia (e.g., procainamide), class Ic (e.g., flecainide) or class III (e.g., amiodarone) <p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause prolonged QTc interval • May increase risk of hypo- or hyperglycemia in individuals age 65 or older, and in individuals with diabetes mellitus, renal insufficiency (CrCl < 60 ml/min), or those receiving other glucose-altering medications • May increase risk of acute tendonitis
Anticoagulants	
warfarin	<p>Monitoring</p> <ul style="list-style-type: none"> • Use must be monitored by Prothrombin Time (PT)/International Normalization Ratio (INR), with

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	<p>frequency determined by clinical circumstances, duration of use, and stability of monitoring results</p> <p>Adverse Consequences</p> <ul style="list-style-type: none"> • Multiple medication interactions exist (See 42 CFR 483.60(c) F428 for Table of Common Medication-Medication Interactions in Long Term Care), which may: <ul style="list-style-type: none"> ○ Significantly increase PT/INR results to levels associated with life-threatening bleeding, or ○ Decrease PT/INR results to ineffective levels, or ○ Increase or decrease the serum concentration of the interacting medication
Anticonvulsants	
<p>All anticonvulsants, e.g.,</p> <ul style="list-style-type: none"> • carbamazepine • gabapentin • lamotrigine • levetiracetam • oxcarbazepine • phenobarbital • phenytoin • primidone • valproic acid 	<p>Indications</p> <ul style="list-style-type: none"> • In addition to seizures, may also be used to treat other disorders, such as bipolar disorder, schizoaffective disorder, chronic neuropathic pain, and for prophylaxis of migraine headaches • Need for indefinite continuation should be based on confirmation of the condition (for example, distinguish epilepsy from isolated seizure due to medical cause or distinguish migraine from other causes of headaches) and its potential causes (medications, electrolyte imbalance, hypocalcemia, etc.) <p>Duration</p> <ul style="list-style-type: none"> • If used to manage behavior, stabilize mood, or treat a psychiatric disorder, refer to Section V – Tapering of a Medication Dose/Gradual Dose Reduction (GDR) in the guidance <p>Monitoring</p> <ul style="list-style-type: none"> • Serum medication concentration monitoring is not required or available for all anticonvulsants. Only the following anticonvulsants should be monitored with periodic serum concentrations: phenytoin, phenobarbital, primidone, divalproex sodium (as valproic acid), and carbamazepine • Serum medication concentrations may help identify toxicity, but significant signs and symptoms of toxicity can occur even at normal or low serum concentrations. • When anticonvulsants are used for conditions other than

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	<p>seizure disorders (e.g., as mood stabilizers), the same concerns exist regarding the need for monitoring for effectiveness and side effects; but evaluation of symptoms—not serum concentrations—should be used to adjust doses. High or toxic serum concentrations should, however, be evaluated and considered for dosage adjustments</p> <ul style="list-style-type: none"> • Symptom control for seizures or behavior can occur with subtherapeutic serum medication concentrations <p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause liver dysfunction, blood dyscrasias, and serious skin rashes requiring discontinuation of treatment • May cause nausea/vomiting, dizziness, ataxia, somnolence/lethargy, incoordination, blurred or double vision, restlessness, toxic encephalopathy, anorexia, headaches. These effects can increase the risk for falls
Antidepressants	
<p>All antidepressants classes, e.g.,</p> <p>Alpha-adrenoceptor antagonist, e.g.,</p> <ul style="list-style-type: none"> • mirtazepine <p>Dopamine-reuptake blocking compounds, e.g.,</p> <ul style="list-style-type: none"> • bupropion <p>Monoamine oxidase inhibitors (MAOIs)</p> <p>Serotonin (5-HT₂) antagonists, e.g.,</p> <ul style="list-style-type: none"> • nefazodone • trazodone <p>Selective serotonin-norepinephrine reuptake inhibitors (SNRIs), e.g.,</p> <ul style="list-style-type: none"> • duloxetine, • venlafaxine 	<p>Indications</p> <ul style="list-style-type: none"> • Agents usually classified as “antidepressants” are prescribed for conditions other than depression including anxiety disorders, post-traumatic stress disorder, obsessive compulsive disorder, insomnia, neuropathic pain (e.g., diabetic peripheral neuropathy), migraine headaches, urinary incontinence, and others <p>Dosage</p> <ul style="list-style-type: none"> • Use of two or more antidepressants simultaneously may increase risk of side effects; in such cases, there should be documentation of expected benefits that outweigh the associated risks and monitoring for any increase in side effects <p>Duration</p> <ul style="list-style-type: none"> • Duration should be in accordance with pertinent literature, including clinical practice guidelines • Prior to discontinuation, many antidepressants may need a gradual dose reduction or tapering to avoid a withdrawal syndrome (e.g., SSRIs, TCAs) • If used to manage behavior, stabilize mood, or treat a psychiatric disorder, refer to Section V – Tapering of a Medication Dose/Gradual Dose Reduction (GDR) in the

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<p>Selective serotonin reuptake inhibitors (SSRIs), e.g.,</p> <ul style="list-style-type: none"> • citalopram • escitalopram • fluoxetine • fluvoxamine • paroxetine • sertraline <p>Tricyclic (TCA) and related compounds</p>	<p>guidance</p> <p>Monitoring</p> <ul style="list-style-type: none"> • All residents being treated for depression with any antidepressant should be monitored closely for worsening of depression and/or suicidal behavior or thinking, especially during initiation of therapy and during any change in dosage <p>Interactions/Adverse Consequences</p> <ul style="list-style-type: none"> • May cause dizziness, nausea, diarrhea, anxiety, nervousness, insomnia, somnolence, weight gain, anorexia, or increased appetite. Many of these effects can increase the risk for falls • Bupropion may increase seizure risk and be associated with seizures in susceptible individuals • SSRIs in combination with other medications affecting serotonin (e.g., tramadol, St. John’s Wort, linezolid, other SSRI’s) may increase the risk for serotonin syndrome and seizures
<p>Monoamine oxidase inhibitors (MAOIs), e.g.,</p> <ul style="list-style-type: none"> • isocarboxazid • phenelzine • tranylcypromine 	<p>Indications/Contraindications</p> <ul style="list-style-type: none"> • Should not be administered to anyone with a confirmed or suspected cerebrovascular defect or to anyone with confirmed cardiovascular disease or hypertension • Should not be used in the presence of pheochromocytoma • MAO Inhibitors are rarely utilized due to their potential interactions with tyramine or tryptophan-containing foods, other medications, and their profound effect on blood pressure <p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause hypertensive crisis if combined with certain foods, cheese, wine <p>Exception: Monoamine oxidase inhibitors such as selegiline (MAO-B inhibitors) utilized for Parkinson’s Disease, unless used in doses greater than 10 mg per day</p> <p>Interactions</p> <ul style="list-style-type: none"> • Should not be administered together or in rapid succession with other MAO inhibitors, tricyclic antidepressants, bupropion, SSRIs, buspirone, sympathomimetics, meperidine, triptans, and other medications that affect

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<p>Tricyclic antidepressants (TCAs), e.g.,</p> <ul style="list-style-type: none"> • amitriptyline • amoxapine • doxepin • combination products, e.g., <ul style="list-style-type: none"> ○ amitriptyline and chlordiazepoxide ○ amitriptyline and perphenazine 	<p style="text-align: center;">serotonin or norepinephrine</p> <p>Indications</p> <ul style="list-style-type: none"> • Because of strong anticholinergic and sedating properties, TCAs and combination products are rarely the medication of choice in older individuals <p>Exception: Use of TCAs may be appropriate if:</p> <ul style="list-style-type: none"> ○ The resident is being treated for neurogenic pain (e.g., trigeminal neuralgia, peripheral neuropathy), based on documented evidence to support the diagnosis; and ○ The relative benefits outweigh the risks and other, safer agents including non-pharmacological interventions or alternative therapies are not indicated or have been considered, attempted, and failed <p>Adverse Consequences</p> <ul style="list-style-type: none"> • Compared to other categories of antidepressants, TCAs cause significant anticholinergic side effects and sedation (nortriptyline and desipramine are less problematic)
Antidiabetic medications	
<p>Insulin and oral hypoglycemics, e.g.,</p> <ul style="list-style-type: none"> • acarbose • acetoexamide • chlorpropamide • glimepiride • glipizide • glyburide • metformin • repaglinide • rosiglitazone • tolazamide • tolbutamide <p>Including combination products, e.g.,</p> <ul style="list-style-type: none"> • rosiglitazone/metformin • glyburide/metformin • glipizide/metformin 	<p>Monitoring</p> <ul style="list-style-type: none"> • Use of anti-diabetic medications should include monitoring (for example, periodic blood sugars) for effectiveness based on desired goals for that individual and to identify complications of treatment such as hypoglycemia, impaired renal function <p>NOTE: Continued or long-term need for sliding scale insulin for non-emergency coverage may indicate inadequate blood sugar control</p> <ul style="list-style-type: none"> • Residents on rosiglitazone should be monitored for visual deterioration due to new onset and/or worsening of macular edema in diabetic patients <p>Adverse Consequences</p> <ul style="list-style-type: none"> • Metformin has been associated with the development of lactic acidosis (a potentially life threatening metabolic disorder), which is more likely to occur in individuals with: <ul style="list-style-type: none"> ○ serum creatinine ≥ 1.5 mg/dL in males or ≥ 1.4

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<ul style="list-style-type: none"> pioglitazone/metformin 	<p>mg/dL in females</p> <ul style="list-style-type: none"> abnormal creatinine clearance from any cause, including shock, acute myocardial infarction, or septicemia age \geq 80 years unless measurement of creatinine clearance verifies normal renal function radiologic studies in which intravascular iodinated contrast materials are given congestive heart failure requiring pharmacological management acute or chronic metabolic acidosis with or without coma (including diabetic ketoacidosis) <ul style="list-style-type: none"> Rosiglitazone and pioglitazone have been associated with edema and weight gain; therefore, their use should be avoided in residents with Stage III or Stage IV heart failure Sulfonylureas can cause the syndrome of inappropriate antidiuretic hormone (SIADH) and result in hyponatremia
<p>chlorpropamide glyburide</p>	<p>Indications</p> <ul style="list-style-type: none"> Chlorpropamide and glyburide are not considered hypoglycemic agents of choice in older individuals because of the long half-life and/or duration of action and increased risk of hypoglycemia <p>Adverse Consequences</p> <ul style="list-style-type: none"> May cause prolonged and serious hypoglycemia (with symptoms including tachycardia, palpitations, irritability, headache, hypothermia, visual disturbances, lethargy, confusion, seizures, and/or coma)
Antifungals	
<p>Imidazoles for systemic use, e.g.,</p> <ul style="list-style-type: none"> fluconazole itraconazole ketoconazole 	<p>Indications</p> <ul style="list-style-type: none"> Should be used in lowest possible dose for shortest possible duration, especially in anyone receiving other medications known to interact with these medications <p>Interactions/Adverse Consequences</p> <ul style="list-style-type: none"> Interaction with warfarin can cause markedly elevated PT/INR, increasing bleeding risk Multiple potentially significant medication interactions

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	<p>may occur, for example:</p> <ul style="list-style-type: none"> ○ These medications when administered concurrently may increase the effect or toxicity of phenytoin, theophylline, sulfonylureas (hypoglycemics) ○ Other medications such as rifampin and cimetidine may decrease the effect of these antifungals <ul style="list-style-type: none"> ● May cause hepatotoxicity, headaches, GI distress <p>Monitoring</p> <ul style="list-style-type: none"> ● Enhanced monitoring may be required to identify and minimize adverse consequences when these antifungals are given with the following: <ul style="list-style-type: none"> ○ warfarin (PT/INR) ○ phenytoin (serum phenytoin levels) ○ theophylline (serum theophylline levels) ○ sulfonylureas (fasting blood glucose)
Antimanic medications	
Lithium	<p>Indications</p> <ul style="list-style-type: none"> ● Should generally not be given to individuals with significant renal or cardiovascular disease, severe debilitation, dehydration, or sodium depletion <p>Monitoring</p> <ul style="list-style-type: none"> ● Toxic levels are very close to therapeutic levels. Serum lithium concentration should be monitored periodically, and dosage adjusted accordingly <p>Interactions/Adverse Consequences</p> <ul style="list-style-type: none"> ● May cause potentially dangerous sodium imbalance ● Adverse consequences may occur at relatively low serum concentrations (1–1.5 mEq/L) ● Serum lithium concentration levels can be affected by many other medications, e.g., thiazide diuretics, ACE inhibitors, NSAIDs
Antiparkinson medications	
All classes, e.g., Catechol-O-Methyl Transferase (COMT)	<p>Adverse Consequences</p> <ul style="list-style-type: none"> ● May cause significant confusion, restlessness, delirium, dyskinesia, nausea, dizziness, hallucinations, agitation

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<p>Inhibitors, e.g.,</p> <ul style="list-style-type: none"> • entacapone <p>Dopamine agonists, e.g.,</p> <ul style="list-style-type: none"> • bromocriptine • ropinerole • pramipexole <p>MAO inhibitors, e.g.,</p> <ul style="list-style-type: none"> • selegiline <p>Others, e.g.,</p> <ul style="list-style-type: none"> • amantadine <p>Various dopaminergic combinations, e.g.,</p> <ul style="list-style-type: none"> • carbidopa/levodopa • carbidopa/levodopa/entacapone 	<ul style="list-style-type: none"> • Increased risk of postural hypotension and falls, especially when given in conjunction with antihypertensive medications
Antipsychotic medications	
<p>All classes, e.g.,</p> <p>First generation (conventional) agents</p> <ul style="list-style-type: none"> • chlorpromazine • fluphenazine • haloperidol • loxapine • mesoridazine • molindone • perphenazine • promazine • thioridazine • thiothixene • trifluoperazine • triflupromazine <p>Second generation (atypical) agents</p> <ul style="list-style-type: none"> • aripiprazole • clozapine • olanzapine 	<p>Indications</p> <ul style="list-style-type: none"> • An antipsychotic medication should be used only for the following conditions/diagnoses as documented in the record and as meets the definition(s) in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Training Revision (DSM-IV TR) or subsequent editions): <ul style="list-style-type: none"> ○ Schizophrenia ○ Schizo-affective disorder ○ Delusional disorder ○ Mood disorders (e.g. mania, bipolar disorder, depression with psychotic features, and treatment refractory major depression) ○ Schizophreniform disorder ○ Psychosis NOS ○ Atypical psychosis ○ Brief psychotic disorder ○ Dementing illnesses with associated behavioral symptoms ○ Medical illnesses or delirium with manic or

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<ul style="list-style-type: none"> • quetiapine • risperidone • ziprasidone 	<p>psychotic symptoms and/or treatment-related psychosis or mania (e.g., thyrotoxicosis, neoplasms, high dose steroids)</p> <ul style="list-style-type: none"> • In addition, the use of an antipsychotic must meet the criteria and applicable, additional requirements listed below: <ol style="list-style-type: none"> 1. Criteria: <ul style="list-style-type: none"> ○ Since diagnoses alone do not warrant the use of antipsychotic medications, the clinical condition must also meet at least one of the following criteria (A or B or C): <ol style="list-style-type: none"> A. The symptoms are identified as being due to mania or psychosis (such as: auditory, visual, or other hallucinations; delusions (such as paranoia or grandiosity)); OR B. The behavioral symptoms present a danger to the resident or to others; OR C. The symptoms are significant enough that the resident is experiencing one or more of the following: inconsolable or persistent distress (e.g., fear, continuously yelling, screaming, distress associated with end-of-life, or crying); a significant decline in function; and/or substantial difficulty receiving needed care (e.g., not eating resulting in weight loss, fear and not bathing leading to skin breakdown or infection). 2. Additional Requirements: <ul style="list-style-type: none"> ○ Acute Psychiatric Situations <p>When an antipsychotic medication is being initiated or used to treat an acute psychiatric emergency (i.e., recent or abrupt onset or exacerbation of symptoms) related to one or more of the aforementioned conditions/diagnoses, that use must meet one of the above criteria and all of the following additional requirements:</p> <ol style="list-style-type: none"> A. The acute treatment period is limited to seven days or less; and B. A clinician in conjunction with the interdisciplinary team must evaluate and document the situation within 7 days, to

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	<p>identify and address any contributing and underlying causes of the acute psychiatric condition and verify the continuing need for antipsychotic medication; and</p> <p>C. Pertinent non-pharmacological interventions must be attempted, unless contraindicated, and documented following the resolution of the acute psychiatric situation.</p> <p>o Enduring Psychiatric Conditions</p> <p>Antipsychotic medications may be used to treat an enduring (i.e., non-acute, chronic, or prolonged) condition, if the clinical condition/diagnosis meets the criteria in #1 above. In addition, before initiating or increasing an antipsychotic medication for enduring conditions, the target behavior must be clearly and specifically identified and monitored objectively and qualitatively, in order to ensure the behavioral symptoms are:</p> <p>A. Not due to a medical condition or problem (e.g., headache or joint pain, fluid or electrolyte imbalance, pneumonia, hypoxia, unrecognized hearing or visual impairment) that can be expected to improve or resolve as the underlying condition is treated; and</p> <p>B. Persistent or likely to reoccur without continued treatment; and</p> <p>C. Not sufficiently relieved by non-pharmacological interventions; and</p> <p>D. Not due to environmental stressors (e.g., alteration in the resident’s customary location or daily routine, unfamiliar care provider, hunger or thirst, excessive noise for that individual, inadequate or inappropriate staff response, physical barriers) that can be addressed to improve the psychotic symptoms or maintain safety; and</p> <p>E. Not due to psychological stressors (e.g., loneliness, taunting, abuse), or anxiety or fear stemming from misunderstanding related to his or her cognitive impairment (e.g., the mistaken belief that this is not where he/she lives or inability to find his or</p>

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	<p>her clothes or glasses) that can be expected to improve or resolve as the situation is addressed</p> <ul style="list-style-type: none"> • After initiating or increasing the dose of an antipsychotic medication, the behavioral symptoms must be reevaluated periodically to determine the effectiveness of the antipsychotic and the potential for reducing or discontinuing the dose <p>Exception: When antipsychotic medications are used for behavioral disturbances related to Tourette’s disorder, or for non-psychiatric indications such as movement disorders associated with Huntington’s disease, hiccups, nausea and vomiting associated with cancer or cancer chemotherapy, or adjunctive therapy at end of life.</p> <p>Inadequate Indications</p> <ul style="list-style-type: none"> • In many situations, antipsychotic medications are not indicated. They should not be used if the only indication is one or more of the following: 1) wandering; 2) poor self-care; 3) restlessness; 4) impaired memory; 5) mild anxiety; 6) insomnia; 7) unsociability; 8) inattention or indifference to surroundings; 9) fidgeting; 10) nervousness; 11) uncooperativeness; or 12) verbal expressions or behavior that are not due to the conditions listed under “Indications” and do not represent a danger to the resident or others 								
	<p>Dosage</p> <ul style="list-style-type: none"> • Doses for acute indications (for example, delirium) may differ from those used for long-term treatment, but should be the lowest possible to achieve the desired therapeutic effects <p>Daily Dose Thresholds for Antipsychotic Medications Used to Manage Behavioral Symptoms Related to Dementing Illnesses</p> <table border="1" data-bbox="618 1724 1312 1936"> <thead> <tr> <th data-bbox="618 1724 954 1787">Generic Medication</th> <th data-bbox="954 1724 1312 1787">Dosage</th> </tr> </thead> <tbody> <tr> <td colspan="2" data-bbox="618 1787 1312 1839" style="text-align: center;">First Generation</td> </tr> <tr> <td data-bbox="618 1839 954 1892">chlorpromazine</td> <td data-bbox="954 1839 1312 1892">75 mg</td> </tr> <tr> <td data-bbox="618 1892 954 1936">fluphenazine</td> <td data-bbox="954 1892 1312 1936">4 mg</td> </tr> </tbody> </table>	Generic Medication	Dosage	First Generation		chlorpromazine	75 mg	fluphenazine	4 mg
Generic Medication	Dosage								
First Generation									
chlorpromazine	75 mg								
fluphenazine	4 mg								

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	haloperidol	2 mg
	loxapine	10 mg
	molindone	10 mg
	perphenazine	8 mg
	pimozide	*
	prochloroperazine	*
	thioridazine	75 mg
	thiothixene	7 mg
	trifluoperazine	8 mg
	Second Generation	
	aripiprazole	10 mg
	clozapine	50 mg
	olanzapine	7.5 mg
	quetiapine	150 mg
	risperidone	2 mg
	ziprasidone	*
	<p>* Not customarily used for the treatment of behavioral symptoms</p> <p>References:</p> <p>Katz, I.R. (2004). Optimizing atypical antipsychotic treatment strategies in the elderly. <i>Journal of the American Geriatrics Society</i>, 52, pp. 272-277.</p> <p>Schneider, L.S. (2005). Risk of death with atypical antipsychotic drug treatment for dementia. Meta-analysis of randomized placebo controlled trials. <i>Journal of the American Medical Association</i>, 294, pp. 1934-1943.</p> <p>Saltz, B.L., Woerner, M.G., Robinson, D.G., & Kane, J.M. (2000). Side effects of antipsychotic drugs: Avoiding and minimizing their impact in elderly patients. <i>Postgraduate Medicine</i>, 107, pp. 169-178.</p>	
	<p>Duration</p> <ul style="list-style-type: none"> • If used to manage behavior, stabilize mood, or treat a psychiatric disorder, refer to Section V – Tapering of a 	

Table I – Medication Issues of Particular Relevance

Medication	Issues and Concerns
	Medication Dose/Gradual Dose Reduction (GDR) in the guidance
	<p>Monitoring/Adverse Consequences</p> <ul style="list-style-type: none"> • The facility assures that residents are being adequately monitored for adverse consequences such as: <ul style="list-style-type: none"> ○ anticholinergic effects (see Table II) ○ akathisia ○ neuroleptic malignant syndrome (NMS) ○ cardiac arrhythmias ○ death secondary to heart-related events (e.g., heart failure, sudden death) ○ falls ○ lethargy ○ increase in total cholesterol and triglycerides ○ parkinsonism ○ blood sugar elevation (including diabetes mellitus) ○ orthostatic hypotension ○ cerebrovascular event (e.g., stroke, transient ischemic attack (TIA)) in older individuals with dementia ○ tardive dyskinesia ○ excessive sedation • When antipsychotics are used without monitoring they may be considered unnecessary medications because of inadequate monitoring.
Anxiolytics	
<p>All Anxiolytics</p> <p>Benzodiazepines, Short-acting, e.g.,</p> <ul style="list-style-type: none"> • alprazolam • estazolam • lorazepam • oxazepam • temazepam <p>Benzodiazepines, Long acting, e.g.,</p> <ul style="list-style-type: none"> • chlordiazepoxide 	<p>Indications</p> <ul style="list-style-type: none"> • Anxiolytic medications should only be used when: <ul style="list-style-type: none"> ○ Use is for one of the following indications as defined in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Training Revision (DSM-IV TR) or subsequent editions: <ol style="list-style-type: none"> a. Generalized anxiety disorder b. Panic disorder c. Symptomatic anxiety that occurs in residents with another diagnosed psychiatric disorder d. Sleep disorders (See Sedatives/Hypnotics)

Table I – Medication Issues of Particular Relevance

Medication	Issues and Concerns
<ul style="list-style-type: none"> • clonazepam • clorazepate • diazepam • flurazepam • quazepam <p>buspirone</p> <p>Other antidepressants except bupropion</p>	<ul style="list-style-type: none"> e. Acute alcohol or benzodiazepine withdrawal f. Significant anxiety in response to a situational trigger g. Delirium, dementia, and other cognitive disorders with associated behaviors that: <ul style="list-style-type: none"> – Are quantitatively and objectively documented; – Are persistent; – Are not due to preventable or correctable reasons; and – Constitute clinically significant distress or dysfunction to the resident or represent a danger to the resident or others <ul style="list-style-type: none"> • Evidence exists that other possible reasons for the individual’s distress have been considered; and • Use results in maintenance or improvement in the individual’s mental, physical or psychosocial well-being (e.g., as reflected on the MDS or other assessment tools); or • There are clinical situations that warrant the use of these medications such as: <ul style="list-style-type: none"> ○ a long-acting benzodiazepine is being used to withdraw a resident from a short-acting benzodiazepine ○ used for neuromuscular syndromes (e.g., cerebral palsy, tardive dyskinesia, restless leg syndrome or seizure disorders) ○ symptom relief in end of life situations <p>Dosage</p> <ul style="list-style-type: none"> • Dosage is less than, or equal to, the following listed total daily doses unless higher doses (as evidenced by the resident’s response and/or the resident’s clinical record) are necessary to maintain or improve the resident’s function <p>Total Daily Dose Thresholds for Anxiolytic Medications</p>

Table I – Medication Issues of Particular Relevance

Medication	Issues and Concerns																							
	<table border="1"> <thead> <tr> <th data-bbox="597 296 954 359">Generic Medication</th> <th data-bbox="954 296 1287 359">Dosage</th> </tr> </thead> <tbody> <tr> <td data-bbox="597 359 954 422">flurazepam</td> <td data-bbox="954 359 1287 422">15 mg</td> </tr> <tr> <td data-bbox="597 422 954 485">chlordiazepoxide</td> <td data-bbox="954 422 1287 485">20 mg</td> </tr> <tr> <td data-bbox="597 485 954 548">clorazepate</td> <td data-bbox="954 485 1287 548">15 mg</td> </tr> <tr> <td data-bbox="597 548 954 611">diazepam</td> <td data-bbox="954 548 1287 611">5 mg</td> </tr> <tr> <td data-bbox="597 611 954 674">clonazepam</td> <td data-bbox="954 611 1287 674">1.5 mg</td> </tr> <tr> <td data-bbox="597 674 954 737">quazepam</td> <td data-bbox="954 674 1287 737">7.5 mg</td> </tr> <tr> <td data-bbox="597 737 954 800">estazolam</td> <td data-bbox="954 737 1287 800">0.5 mg</td> </tr> <tr> <td data-bbox="597 800 954 863">alprazolam</td> <td data-bbox="954 800 1287 863">0.75 mg</td> </tr> <tr> <td data-bbox="597 863 954 926">oxazepam</td> <td data-bbox="954 863 1287 926">30 mg</td> </tr> <tr> <td data-bbox="597 926 954 989">lorazepam</td> <td data-bbox="954 926 1287 989">2 mg</td> </tr> </tbody> </table>	Generic Medication	Dosage	flurazepam	15 mg	chlordiazepoxide	20 mg	clorazepate	15 mg	diazepam	5 mg	clonazepam	1.5 mg	quazepam	7.5 mg	estazolam	0.5 mg	alprazolam	0.75 mg	oxazepam	30 mg	lorazepam	2 mg	
Generic Medication	Dosage																							
flurazepam	15 mg																							
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oxazepam	30 mg																							
lorazepam	2 mg																							
diphenhydramine and hydroxyzine	<p>Duration</p> <ul style="list-style-type: none"> If used to manage behavior, stabilize mood, or treat a psychiatric disorder, refer to Section V – Tapering of a Medication Dose/Gradual Dose Reduction (GDR) in the guidance <p>Adverse Consequences</p> <ul style="list-style-type: none"> May increase risk of confusion, sedation, and falls 																							
meprobamate	<p>Indications</p> <ul style="list-style-type: none"> Not appropriate for use as an anxiolytic <p>Indications</p> <ul style="list-style-type: none"> Highly addictive and sedating medication; not indicated for use in older individuals <p>Dosage/Duration</p> <ul style="list-style-type: none"> Those who have used meprobamate for prolonged periods may be physically and/or psychologically dependent and may need to be withdrawn slowly 																							
Cardiovascular medications (including antihypertensives)																								
All antiarrhythmics	<p>Adverse Consequences</p> <ul style="list-style-type: none"> Cardiac antiarrhythmics can have serious adverse effects in older individuals, including impaired mental function, 																							

Table I – Medication Issues of Particular Relevance

Medication	Issues and Concerns
	falls, appetite, behavior, and heart function
amiodarone	<p>Indications</p> <ul style="list-style-type: none"> • Only approved indication for use is to treat documented life-threatening recurrent ventricular arrhythmias that do not respond to other antiarrhythmic agents or when alternative agents are not tolerated • Common off-label use to treat atrial fibrillation; however, literature suggests that in many higher risk individuals, alternative approaches to managing atrial fibrillation (rate control and anticoagulation) are equally effective and less toxic* <p>* Goldschlager, N., Epstein, A.E., Naccarelli, G., Olshansky, B., & Singh, B. (2000). Practical guidelines for clinicians who treat patients with amiodarone. Archives of Internal Medicine, 160, pp. 1741-1748.</p> <p>* Denus, S., Sanoski, C.A., Carlson, J., Opolski, G., & Spinler, S.A. (2005). Rate vs rhythm control in patients with atrial fibrillation: A meta-analysis. Archives of Internal Medicine, 165, pp. 258-262.</p> <p>Dosage/Monitoring</p> <ul style="list-style-type: none"> • It is critical to carefully consider risks and benefits, to use the lowest possible dose for the shortest possible duration, to closely monitor individuals receiving long-term amiodarone, and to seek and identify adverse consequences <p>Interactions/Adverse Consequences</p> <ul style="list-style-type: none"> • May cause potentially fatal toxicities, including pulmonary toxicity (hypersensitivity pneumonitis or interstitial/alveolar pneumonitis) and hepatic injury. May cause hypothyroidism, exacerbate existing arrhythmia, and worsen heart failure. Can also impair mental function and behavior • May cause clinically significant medication interactions; for example, with digoxin and warfarin • Toxicity increases with higher doses and longer duration of use
disopyramide	<p>Adverse Consequences</p> <ul style="list-style-type: none"> • Disopyramide has potent negative inotropic effects (decreased force of heart contraction), which may induce

Table I – Medication Issues of Particular Relevance

Medication	Issues and Concerns
	heart failure in older individuals, and is also strongly anticholinergic
All antihypertensives	<p>Dosage/Monitoring</p> <ul style="list-style-type: none"> • Doses of individual antihypertensives may require modification in order to achieve desired effects while minimizing adverse consequences, especially when multiple antihypertensives are prescribed simultaneously • When discontinuing some antihypertensives (e.g., clonidine, beta blockers), gradual tapering may be required to avoid adverse consequences caused by abrupt cessation <p>Interactions/Adverse Consequences</p> <ul style="list-style-type: none"> • May cause dizziness, postural hypotension, fatigue, and an increased risk for falls • Many other medications may interact with antihypertensives to potentiate their effect (e.g., levodopa, nitrates)
<p>Alpha blockers, e.g.,</p> <ul style="list-style-type: none"> • alfuzosin • doxazosin • prazosin • tamsulosin • terazosin 	<p>Adverse Consequences</p> <ul style="list-style-type: none"> • Doxazosin, prazosin, and terazosin can cause significant hypotension and syncope during the first few doses. Therefore, these medications should be initiated at bedtime with a slow titration of dose • Prazosin can cause more CNS side effects and generally should be avoided in older individuals
<p>Angiotensin converting enzyme (ACE) inhibitors, e.g.,</p> <ul style="list-style-type: none"> • benazepril • captopril • enalapril • fosinopril • lisinopril • ramipril <p>Angiotensin II receptor blockers, e.g.,</p> <ul style="list-style-type: none"> • candesartan • eprosartan 	<p>Monitoring</p> <ul style="list-style-type: none"> • Monitoring of serum potassium is necessary especially in individuals receiving ACE inhibitors with potassium, or potassium sparing diuretics <p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause angioedema (signs and symptoms of immediate hypersensitivity), chronic persistent nonproductive cough, or may worsen renal failure • Potential for life-threatening elevation of serum potassium concentrations when used in combination with potassium supplements, potassium-sparing diuretics including spironolactone

Table I – Medication Issues of Particular Relevance

Medication	Issues and Concerns
<ul style="list-style-type: none"> • irbesartan • losartan • olmesartan • valsartan 	
<p>Beta adrenergic blockers, e.g.,</p> <p>Nonselective, e.g.,</p> <ul style="list-style-type: none"> • propranolol <p>Cardioselective, e.g.,</p> <ul style="list-style-type: none"> • atenolol • esmolol • metoprolol • nadolol • timolol 	<p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause or exacerbate: <ul style="list-style-type: none"> ○ Bradycardia, especially in individuals receiving other medications that affect cardiac conduction (e.g., calcium channel blockers); ○ Dizziness, fatigue; depression, bronchospasm (especially, but not exclusively, propranolol); or ○ Cardiac decompensation that may require adjusting dose in residents with acute heart failure • May mask tachycardia associated with symptomatic hypoglycemia • May have increased effect or may accumulate in individuals with hepatic impairment
<p>Calcium channel blockers, e.g.,</p> <ul style="list-style-type: none"> • nifedipine • isradipine • amlodipine • nisoldipine • diltiazem • verapamil 	<p>Adverse consequences</p> <ul style="list-style-type: none"> • May cause clinically significant constipation • May cause peripheral edema • Some agents may cause generalized aching, headache, muscle pain • Short acting/immediate release nifedipine increases the risk of cardiac complications and should not be used
<p>methyldopa</p> <p>Including combination products such as methyldopa/hydrochlorothiazide</p>	<p>Indications</p> <ul style="list-style-type: none"> • Alternate treatments for hypertension are preferred <p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause bradycardia and excessive sedation; may exacerbate depression in older individuals
<p>digoxin</p>	<p>Indications</p> <ul style="list-style-type: none"> • Digoxin is indicated only for the following diagnoses: congestive heart failure, atrial fibrillation, paroxysmal supraventricular tachycardia, or atrial flutter • Should be used with caution in individuals with impaired renal function

Table I – Medication Issues of Particular Relevance

Medication	Issues and Concerns
	<p>Dosage</p> <ul style="list-style-type: none"> • Daily doses in older individuals should ordinarily not exceed 0.125 mg/day except when used to control atrial arrhythmia and ventricular rate <p>Monitoring</p> <ul style="list-style-type: none"> • Must be used cautiously in individuals with renal failure or fluid and electrolyte imbalance, with close monitoring for adverse consequences and monitoring, as indicated, of both renal function and serum medication concentration (“digoxin level”) • Adverse consequences may occur even with therapeutic serum concentration, especially in older individuals <p>Interactions/Adverse Consequences</p> <ul style="list-style-type: none"> • May interact with many other medications, possibly resulting in digoxin toxicity or elevated serum concentrations of other medications • May cause significant bradycardia, especially when used in individuals taking other medications affecting cardiac conduction • Toxicity may cause fatigue, nausea, vomiting, anorexia, delirium, cardiac arrhythmia
<p>Diuretics, e.g.,</p> <ul style="list-style-type: none"> • bumetanide • ethacrynic acid • furosemide • hydrochlorothiazide • metolazone • spironolactone • torsemide • triamterene 	<p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause fluid and electrolyte imbalance (hypo/hypernatremia, hypo/hyperkalemia, dehydration, etc.), hypotension; may precipitate or exacerbate urinary incontinence, falls
<p>Nitrates, e.g.,</p> <ul style="list-style-type: none"> • isosorbide mononitrate • isosorbide dinitrate • nitroglycerin 	<p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause headaches, dizziness, lightheadedness, faintness, or symptomatic orthostatic hypotension, especially when initially started or when taken in combination with antihypertensive medications
Cholesterol lowering medications	
HMG-CoA Reductase	Monitoring

Table I – Medication Issues of Particular Relevance

Medication	Issues and Concerns
<p>Inhibitors (“statins”), e.g.,</p> <ul style="list-style-type: none"> • atorvastatin • fluvastatin • lovastatin • pravastatin • rosuvastatin • simvastatin 	<ul style="list-style-type: none"> • Liver function monitoring should be performed consistent with manufacturer’s recommendations, generally accepted as: <ul style="list-style-type: none"> ○ Prior to initiation of therapy, at 12 weeks following both initiation of therapy and any increase in dose, and periodically (e.g., semiannually) thereafter <p>Adverse Consequences</p> <ul style="list-style-type: none"> • May impair liver function; liver function tests should be monitored as indicated above • May cause muscle pain, myopathy, and rhabdomyolysis (breakdown of skeletal muscle) that can precipitate kidney failure especially in combination with other cholesterol lowering medications.
<p>cholestyramine</p>	<p>Interactions</p> <ul style="list-style-type: none"> • May reduce the absorption of other medications being taken concurrently. Other medications, including diuretics, beta-blockers, corticosteroids, thyroid hormones, digoxin, valproic acid, NSAIDs, sulfonylureas, and warfarin should be administered one hour before or four hours after cholestyramine administration to avoid this interaction <p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause constipation, dyspepsia, nausea or vomiting, abdominal pain
<p>fibrates, e.g.,</p> <ul style="list-style-type: none"> • fenofibrate • clofibrate 	<p>Monitoring</p> <ul style="list-style-type: none"> • Fenofibrate and clofibrate require regular monitoring of liver tests as well as evaluating the complete blood count (CBC) prior to and after initiation
<p>niacin</p>	<p>Monitoring</p> <ul style="list-style-type: none"> • Monitor glucose and liver function tests regularly <p>Adverse Consequences</p> <ul style="list-style-type: none"> • Interferes with glucose control and can aggravate diabetes • Can exacerbate active gallbladder disease and gout • Flushing is common
<p>Cognitive Enhancers</p>	

Table I – Medication Issues of Particular Relevance

Medication	Issues and Concerns
<p>Cholinesterase inhibitors, e.g.,</p> <ul style="list-style-type: none"> • donepezil • galantamine • rivastigmine 	<p>Indications</p> <ul style="list-style-type: none"> • As the underlying disorder progresses into advanced stages, the continued use of the medication should be reevaluated <p>(Removed Duration)</p> <p>Adverse Consequences</p> <ul style="list-style-type: none"> • May affect cardiac conduction, especially in individuals who already have a cardiac conduction disorder or who are taking other medications that affect heart rate • May cause insomnia, dizziness, nausea, vomiting, diarrhea, anorexia, and weight loss • Should be used with caution in individuals with severe asthma or obstructive pulmonary disease
<p>NMDA receptor antagonists, e.g.,</p> <ul style="list-style-type: none"> • memantine 	<p>Indications</p> <ul style="list-style-type: none"> • As the underlying disorder progresses into advanced stages, the continued use of the medication should be reevaluated <p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause restlessness, distress, dizziness, somnolence, hypertension, headache, hallucinations, or increased confusion
Cough, cold, and allergy medications	
<p>All cough, cold, allergy medications</p>	<p>Indications/Duration</p> <ul style="list-style-type: none"> • Should be used only for a limited duration (less than 14 days) unless there is documented evidence of enduring symptoms that cannot otherwise be alleviated and for which a cause cannot be identified and corrected
<p>Antihistamine H-1 blockers, e.g.,</p> <ul style="list-style-type: none"> • chlorpheniramine • cyproheptadine • diphenhydramine 	<p>Indications</p> <ul style="list-style-type: none"> • H-1 blocker antihistamines have strong anticholinergic properties and are not considered medications of choice in older individuals • If appropriate and effective, topical instead of oral

Table I – Medication Issues of Particular Relevance

Medication	Issues and Concerns
<ul style="list-style-type: none"> • hydroxyzine • meclizine • promethazine 	<ul style="list-style-type: none"> • diphenhydramine should be considered for allergic reactions involving the skin <p>Dosage/Duration</p> <ul style="list-style-type: none"> • Should be used in the smallest possible dosage for the shortest possible duration, especially in individuals who are susceptible to anticholinergic side effects or who are receiving other medications with anticholinergic properties (see Table II) <p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause excessive sedation, confusion, cognitive impairment, distress, dry mouth, constipation, urinary retention. These may lead to other adverse consequences such as falls
<p>Oral decongestants, e.g.,</p> <ul style="list-style-type: none"> • pseudoephedrine 	<p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause dizziness, nervousness, insomnia, palpitations, urinary retention, elevated blood pressure • Should be used with caution in individuals who have insomnia or hypertension
Gastrointestinal medications	
<p>Phenothiazine-related antiemetics, e.g.,</p> <ul style="list-style-type: none"> • prochlorperazine • promethazine 	<p>Indications</p> <ul style="list-style-type: none"> • Use with caution in individuals with Parkinson’s disease, narrow-angle glaucoma, BPH, seizure disorder <p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause sedation, dizziness, drowsiness, postural hypotension, and neuroleptic malignant syndrome • May lower seizure threshold • Promethazine and prochlorperazine may cause anticholinergic effects, such as constipation, dry mouth, blurred vision, urinary retention • May cause extrapyramidal symptoms, including medication-induced parkinsonism, acute dystonic reactions, akathisia, and tardive dyskinesia • May alter cardiac conduction or induce arrhythmias
<p>trimethobenzamide</p>	<p>Adverse Consequences</p> <ul style="list-style-type: none"> • Relatively ineffective antiemetic that can cause significant extrapyramidal side effects in addition to lethargy,

Table I – Medication Issues of Particular Relevance

Medication	Issues and Concerns
	<p>sedation, confusion</p> <p>Exception: May be indicated in patients with Parkinson’s Disease taking apomorphine</p>
<p>metoclopramide</p>	<p>Indications</p> <ul style="list-style-type: none"> • High-risk medication with limited clinical indication and limited demonstrated effectiveness* • Not recommended for first-line treatment of gastroesophageal reflux disease, especially in older individuals • When used for diabetic gastroparesis, or other indications, relative benefits and risks should be assessed and documented <p>* Lata, P.F., Pigarelli, D.L. (2003). Chronic metoclopramide therapy for diabetic gastroparesis. <i>Ann Pharmacotherapy</i>, 37(1), pp. 122-126.</p> <p>Adverse Consequences</p> <ul style="list-style-type: none"> • Especially in older individuals, metoclopramide may cause restlessness, drowsiness, insomnia, depression, distress, anorexia, and extrapyramidal symptoms, and may lower the seizure threshold • May increase seizures in individuals with seizure disorders or exacerbate symptoms in individuals with Parkinson’s Disease <p>Monitoring</p> <ul style="list-style-type: none"> • It is essential to closely monitor at-risk individuals for adverse consequences
<p>Proton pump inhibitors (PPI), e.g.,</p> <ul style="list-style-type: none"> • esomeprazole • lansoprazole • omeprazole • rabeprazole <p>H-2 antagonists, e.g.,</p> <ul style="list-style-type: none"> • cimetidine • famotidine • rantidine 	<p>Indications</p> <ul style="list-style-type: none"> • Indication for use should be based on clinical symptoms and/or endoscopic findings • When used to treat or prevent NSAID-induced gastritis or esophagitis, documentation should exist that other, less GI-toxic analgesics have been tried or were not indicated <p>Duration</p> <ul style="list-style-type: none"> • If used for greater than 12 weeks, clinical rationale for continued need and/or documentation should support an underlying chronic disease (e.g., GERD) or risk factors (e.g., chronic NSAID use)

Table I – Medication Issues of Particular Relevance

Medication	Issues and Concerns
	<p>Dosage</p> <ul style="list-style-type: none"> • Dosing of histamine-H2 antagonists should be based on renal function <p>Interactions</p> <ul style="list-style-type: none"> • Cimetidine has higher incidence of medication interactions and should be avoided in older individuals <p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause or exacerbate headache, nausea, vomiting, flatulence, dysphagia, abdominal pain, diarrhea, or other gastrointestinal symptoms • H-2 antagonists may cause confusion • PPIs may increase the risk of clostridium difficile colitis
Glucocorticoids	
<p>All glucocorticoids (except topical or inhaled dosage forms), e.g.,</p> <ul style="list-style-type: none"> • dexamethasone • hydrocortisone • methylprednisolone • prednisone 	<p>Duration/Monitoring</p> <ul style="list-style-type: none"> • Necessity for continued use should be documented, along with monitoring for and management of adverse consequences <p>Adverse Consequences</p> <ul style="list-style-type: none"> • Intermediate- or longer-term use may cause hyperglycemia, psychosis, edema, insomnia, hypertension, osteoporosis, mood lability, or depression
Hematinics	
<p>Erythropoiesis stimulants, e.g.,</p> <ul style="list-style-type: none"> • darbepoetin • erythropoietin 	<p>Indications</p> <ul style="list-style-type: none"> • Assessment of causes and categories of anemia should precede or accompany the use of this medication <p>Monitoring</p> <ul style="list-style-type: none"> • Use must be monitored according to specific manufacturer’s instructions including blood pressure, baseline serum iron or ferritin level, and frequent complete blood count (CBCs) to permit tapering or discontinuation when hemoglobin/hematocrit reaches or exceeds target ranges <p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause or worsen hypertension • Excessive dose or duration can lead to polycythemia,

Table I – Medication Issues of Particular Relevance

Medication	Issues and Concerns
	dangerous thrombotic events including myocardial infarction and stroke
Iron	<p>Indications</p> <ul style="list-style-type: none"> • Iron therapy is not indicated in anemia of chronic disease when iron stores and transferrin levels are normal or elevated <p>Dosage/Duration</p> <ul style="list-style-type: none"> • Clinical rationale should be documented for long-term use (greater than two months) or administration more than once daily for greater than a week, because of side effects and the risk of iron accumulation in tissues <p>Monitoring</p> <ul style="list-style-type: none"> • Baseline serum iron or ferritin level and periodic CBC or hematocrit/ hemoglobin <p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause constipation, dyspepsia • Can accumulate in tissues and cause multiple complications if given chronically despite normal or high iron stores
Laxatives	
All categories including bulk producing laxatives, hyperosmolar agents, saline laxatives, stimulant laxatives, emollient laxatives	<p>Adverse Consequences</p> <ul style="list-style-type: none"> • May cause flatulence, bloating, abdominal pain • Bulk forming laxatives and stool softeners may cause accumulation of stool and possible bowel obstruction, if not used with adequate fluids or in individuals with other causes of impaired bowel motility
Muscle relaxants	
<p>All muscle relaxants, e.g.,</p> <ul style="list-style-type: none"> • baclofen • carisoprodol • chlorzoxazone • cyclobenzaprine • dantrolene • metaxalone • methocarbamol • orphenadrine 	<p>Indications/Adverse Consequences</p> <ul style="list-style-type: none"> • Most are poorly tolerated by older individuals due to anticholinergic side effects (see Table II), sedation, or weakness • Long-term use in individuals with complications due to multiple sclerosis, spinal cord injuries, cerebral palsy, and other select conditions may be indicated, although close monitoring is still warranted • Abrupt cessation of some muscle relaxants may cause or

Table I – Medication Issues of Particular Relevance

Medication	Issues and Concerns
	<p>predispose individuals to seizures or hallucinations</p> <p>Exception: Periodic use (once every three months) for a short duration (not more than seven days) may be appropriate, when other interventions or alternative medications are not effective or not indicated</p>
Orexigenics (appetite stimulants)	
<p>All appetite stimulants, e.g.,</p> <ul style="list-style-type: none"> • megestrol acetate • oxandrolone • dronabinol 	<p>Indications</p> <ul style="list-style-type: none"> • Use should be reserved for situations where assessment and management of underlying correctable causes of anorexia and weight loss is not feasible or successful, and after evaluating potential benefits/risks <p>Monitoring</p> <ul style="list-style-type: none"> • Appetite and weight should be monitored at least monthly and agent should be discontinued if there is no improvement. <p>Adverse Consequences</p> <ul style="list-style-type: none"> • Megestrol acetate may cause fluid retention, adrenal suppression, and symptoms of adrenal insufficiency • Oxandrolone may cause virilization of females and feminization of males, excessive sexual stimulation, and fluid retention • Dronabinol may cause tachycardia, orthostatic hypotension, dizziness, dysphoria, and impaired cognition, which may lead to falls
Osteoporosis medications	
<p>Bisphosphonates, e.g.,</p> <ul style="list-style-type: none"> • alendronate • ibandronate • risedronate 	<p>Dosage</p> <ul style="list-style-type: none"> • These medications must be taken according to very specific directions, including time of day, position, and timing relative to other medications and food <p>Monitoring</p> <ul style="list-style-type: none"> • Individuals receiving these medications should be monitored closely for gastrointestinal complications, including esophageal or gastric erosion <p>Adverse Consequences</p> <ul style="list-style-type: none"> • Potential to cause gastrointestinal symptoms including dysphagia, esophagitis, gastritis, or esophageal and gastric ulcers, especially when given to individuals who are also

Table I – Medication Issues of Particular Relevance

Medication	Issues and Concerns
	taking oral corticosteroids, aspirin or other nonsteroidal anti-inflammatory drugs (NSAIDs)
Platelet inhibitors	
<p>All platelet inhibitors, e.g.,</p> <ul style="list-style-type: none"> • dipyridamole • dipyridamole extended-release and aspirin (as fixed-dose combination) • aspirin • clopidogrel 	<p>Interactions/Adverse Consequences</p> <ul style="list-style-type: none"> • May cause thrombocytopenia and increase risk of bleeding • Common side effects include headache, dizziness, and vomiting • See discussion at NSAIDs regarding aspirin • Concurrent use with warfarin or NSAIDs may increase risk of bleeding
ticlopidine	<p>Indication</p> <ul style="list-style-type: none"> • Use may be appropriate in individuals who have had a previous stroke or have evidence of stroke precursors (i.e., transient ischemic attacks (TIAs)), and who cannot tolerate aspirin or another platelet inhibitor <p>Adverse Consequences</p> <ul style="list-style-type: none"> • Associated with more severe side effects and considerably more toxic than other platelet inhibitors; use should be avoided in older individuals • Most serious side effects involve the hematologic system, including potentially life-threatening neutropenia • May also cause nausea, vomiting, and diarrhea
Respiratory medications	
theophylline	<p>Interactions</p> <ul style="list-style-type: none"> • Potentially significant interactions with many other medications may occur, especially various antibiotics, seizure medications, and cardiac medications <p>Monitoring/Adverse Consequences</p> <ul style="list-style-type: none"> • There should be monitoring for signs and symptoms of toxicity, such as arrhythmia, seizure, GI upset, diarrhea, nausea/vomiting, abdominal pain, nervousness, headache, insomnia, distress, dizziness, muscle cramp, tremor • Periodic monitoring of serum concentrations helps identify or verify toxicity

Table I – Medication Issues of Particular Relevance

Medication	Issues and Concerns
<p>Inhalant medications classes, e.g.,</p> <p>Anticholinergic, e.g.,</p> <ul style="list-style-type: none"> • ipratropium • tiotropium <p>Beta 2 agonists, e.g.,</p> <ul style="list-style-type: none"> • albuterol • formoterol • pirbuterol acetate • salmeterol <p>Corticosteroids, e.g.,</p> <ul style="list-style-type: none"> • beclomethasone • budesonide • flunisolide • fluticasone • triamcinolone acetonide <p>Miscellaneous, e.g.,</p> <ul style="list-style-type: none"> • cromolyn • nedocromil sodium 	<p>Adverse Consequences</p> <ul style="list-style-type: none"> • Inhaled anticholinergics can cause xerostomia (dry mouth) • Inhaled beta agonists can cause restlessness, increased heart rate, and anxiety • Inhaled steroids can cause throat irritation and oral candidiasis, especially if the mouth is not rinsed after administration
Sedatives/Hypnotics (sleep medications)	
<p>All hypnotics</p> <p>Benzodiazepine hypnotics, e.g.,</p> <ul style="list-style-type: none"> • estazolam • flurazepam • quazepam • temazepam • triazolam <p>Non-benzodiazepine hypnotics, e.g.,</p> <ul style="list-style-type: none"> • eszopiclone • zaleplon • zolpidem 	<p>Indications</p> <ul style="list-style-type: none"> • Most cases of insomnia are associated with underlying conditions (secondary or co-morbid insomnia) such as psychiatric disorders (e.g., depression), cardiopulmonary disorders (e.g., COPD, CHF), urinary frequency, pain, obstructive sleep apnea, and restless leg syndrome. Insomnia may be further described by the duration of symptoms • Before initiating medications to treat insomnia, other factors potentially causing insomnia should be evaluated, including, for example: <ul style="list-style-type: none"> ○ environment, such as excessive heat, cold, or noise; lighting ○ inadequate physical activity

Table I – Medication Issues of Particular Relevance

Medication	Issues and Concerns
<p>Melatonin receptor agonists, e.g.,</p> <ul style="list-style-type: none"> • ramelteon <p>Other hypnotics, e.g.,</p> <ul style="list-style-type: none"> • chloral hydrate <p>Miscellaneous agents used for sleep, e.g.,</p> <ul style="list-style-type: none"> • sedating antidepressants (e.g., trazodone) • sedating antihistamines (e.g., hydroxyzine) 	<ul style="list-style-type: none"> ○ facility routines that may not accommodate residents’ individual needs (e.g., time for sleep, awakening, toileting, medication treatments) ○ provision of care in a manner that disrupts sleep ○ caffeine or medications known to disrupt sleep ○ pain and discomfort ○ underlying conditions (secondary or co-morbid insomnia) such as psychiatric disorders (e.g., depression), cardiopulmonary disorders (e.g., COPD, CHF), urinary frequency, pain, obstructive sleep apnea, and restless leg syndrome <ul style="list-style-type: none"> • It is expected that interventions (such as sleep hygiene approaches, individualizing the sleep and wake times to accommodate the person’s wishes and prior customary routine, and maximizing treatment of any underlying conditions) are implemented to address the causative factor(s) • These guidelines apply to any medication that is being used to treat insomnia. Initiation of medications to induce or maintain sleep should be preceded or accompanied by other interventions to try to improve sleep. All sleep medications should be used in accordance with approved product labeling; for example, timing and frequency of administration relative to anticipated waking time • The use of sedating medications for individuals with diagnosed sleep apnea requires careful assessment, documented clinical rationale, and close monitoring <p>Exceptions:</p> <ul style="list-style-type: none"> • Use of a single dose sedative for dental or medical procedures • During initiation of treatment for depression, pain or other comorbid condition(s), short-term use of a sleep medication may be necessary until symptoms improve or the underlying aggravating factor can be identified and/or effectively treated
	<p>Dosage</p> <p>Daily Dose Thresholds For Sedative-Hypnotic Medications</p>

Table I – Medication Issues of Particular Relevance

Medication	Issues and Concerns																																
	<table border="1" data-bbox="618 348 1289 1226"> <thead> <tr> <th data-bbox="618 348 954 417">Generic Medication</th> <th data-bbox="954 348 1289 417">Oral Dosage</th> </tr> </thead> <tbody> <tr> <td data-bbox="618 417 954 474">chloral hydrate*</td> <td data-bbox="954 417 1289 474">500 mg</td> </tr> <tr> <td data-bbox="618 474 954 531">diphenhydramine*</td> <td data-bbox="954 474 1289 531">25 mg</td> </tr> <tr> <td data-bbox="618 531 954 588">estazolam</td> <td data-bbox="954 531 1289 588">0.5 mg</td> </tr> <tr> <td data-bbox="618 588 954 644">eszopiclone</td> <td data-bbox="954 588 1289 644">1 mg</td> </tr> <tr> <td data-bbox="618 644 954 701">flurazepam*</td> <td data-bbox="954 644 1289 701">15 mg</td> </tr> <tr> <td data-bbox="618 701 954 758">hydroxyzine*</td> <td data-bbox="954 701 1289 758">50 mg</td> </tr> <tr> <td data-bbox="618 758 954 814">lorazepam</td> <td data-bbox="954 758 1289 814">1 mg</td> </tr> <tr> <td data-bbox="618 814 954 871">oxazepam</td> <td data-bbox="954 814 1289 871">15 mg</td> </tr> <tr> <td data-bbox="618 871 954 928">quazepam*</td> <td data-bbox="954 871 1289 928">7.5 mg</td> </tr> <tr> <td data-bbox="618 928 954 984">ramelteon</td> <td data-bbox="954 928 1289 984">8 mg</td> </tr> <tr> <td data-bbox="618 984 954 1041">temazepam</td> <td data-bbox="954 984 1289 1041">15 mg</td> </tr> <tr> <td data-bbox="618 1041 954 1098">triazolam*</td> <td data-bbox="954 1041 1289 1098">0.125 mg</td> </tr> <tr> <td data-bbox="618 1098 954 1155">zalepon</td> <td data-bbox="954 1098 1289 1155">5 mg</td> </tr> <tr> <td data-bbox="618 1155 954 1211">zolpidem IR</td> <td data-bbox="954 1155 1289 1211">5 mg</td> </tr> <tr> <td data-bbox="618 1211 954 1268">zolpidem CR</td> <td data-bbox="954 1211 1289 1268">6.25mg</td> </tr> </tbody> </table> <p data-bbox="618 1247 1328 1350">* These medications are not considered medications of choice for the management of insomnia, especially in older individuals.</p> <p data-bbox="618 1371 1360 1436">Reference: www.ahrq.gov/downloads/pub/evidence/pdf/insomnia/insomnia.pdf</p>	Generic Medication	Oral Dosage	chloral hydrate*	500 mg	diphenhydramine*	25 mg	estazolam	0.5 mg	eszopiclone	1 mg	flurazepam*	15 mg	hydroxyzine*	50 mg	lorazepam	1 mg	oxazepam	15 mg	quazepam*	7.5 mg	ramelteon	8 mg	temazepam	15 mg	triazolam*	0.125 mg	zalepon	5 mg	zolpidem IR	5 mg	zolpidem CR	6.25mg
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	<p data-bbox="610 1457 737 1486">Duration</p> <ul data-bbox="610 1507 1409 1610" style="list-style-type: none"> • If used to induce sleep or treat a sleep disorder, refer to Section V – Tapering of a Medication Dose/Gradual Dose Reduction (GDR) in the guidance 																																
<p data-bbox="206 1646 431 1675">Barbiturates, e.g.,</p> <ul data-bbox="254 1696 477 1919" style="list-style-type: none"> • amobarbital • butabarbital • pentobarbital • secobarbital • phenobarbital • amobarbital- 	<p data-bbox="610 1646 1382 1711">NOTE: Refers to barbiturates used to induce sleep or treat anxiety disorder</p> <p data-bbox="610 1732 764 1761">Indications</p> <ul data-bbox="610 1782 1409 1919" style="list-style-type: none"> • Barbiturates should not be initiated in any dose for any individuals to treat anxiety or insomnia; as they are highly addictive and cause numerous adverse effects, especially in older individuals 																																

Table I – Medication Issues of Particular Relevance

Medication	Issues and Concerns
<p>secobarbital</p> <ul style="list-style-type: none"> • barbiturates with other medications 	<p>Exception: These guidelines do not apply to the use of phenobarbital to treat seizure disorders (see Anticonvulsant section)</p> <p>Interactions/Adverse Consequences</p> <ul style="list-style-type: none"> • May increase the metabolism of many medications (e.g., anticonvulsants, antipsychotics), which may lead to decreased effectiveness and subsequent worsening of symptoms or decreased control of underlying illness • May cause hypotension, dizziness, lightheadedness, “hangover” effect, drowsiness, confusion, mental depression, unusual excitement, nervousness, headache, insomnia, nightmares, and hallucinations • May increase the risk for falls
Thyroid medications	
<p>All thyroid medications, e.g.,</p> <ul style="list-style-type: none"> • levothyroxine • triiodothyronine 	<p>Interactions</p> <ul style="list-style-type: none"> • Many clinically significant medication interactions have been identified; therefore, re-evaluation of medication doses is indicated <p>Dosage</p> <ul style="list-style-type: none"> • Initiation of thyroid supplementation should occur at low doses and be increased gradually to avoid precipitating cardiac failure or adrenal crisis <p>Monitoring</p> <ul style="list-style-type: none"> • Assessment of thyroid function (e.g., TSH, serum T4 or T3) should occur prior to initiation and periodically thereafter, including when new signs and symptoms of hypo- or hyperthyroidism are present
Urinary incontinence medications	
<p>Urinary Incontinence Types and Agents, e.g.,</p> <p>Urge incontinence:</p> <p>Anticholinergics, e.g.,</p> <ul style="list-style-type: none"> • darifenecin • oxybutynin • tolteridine • trospium 	<p>Indications</p> <ul style="list-style-type: none"> • Before or soon after initiating medication(s) to manage urinary incontinence, assessment of underlying causes and identification of the type/category of urinary incontinence needs to be documented • These medications have specific, limited indications based on the cause and type/category of incontinence <p>Monitoring</p>

Table I – Medication Issues of Particular Relevance

Medication	Issues and Concerns
<p>Tricyclic antidepressants, e.g.,</p> <ul style="list-style-type: none"> • desipramine • imipramine <p>Stress incontinence:</p> <p>Alpha adrenergic agonists, e.g.,</p> <ul style="list-style-type: none"> • pseudoephedrine <p>Mixed incontinence, e.g.,</p> <ul style="list-style-type: none"> • estrogen replacement agents • imipramine <p>Overflow incontinence, e.g.,</p> <ul style="list-style-type: none"> • alpha adrenergic antagonists (see antihypertensives) • bethanechol chloride 	<ul style="list-style-type: none"> • Ongoing assessments of the effects of the medication on the individual's urinary incontinence as well as lower urinary tract symptoms should be done periodically <p>Adverse Consequences</p> <ul style="list-style-type: none"> • Anticholinergics and TCAs may cause anticholinergic effects (see Table II) • Estrogen Replacement Agents: oral agents may cause systemic side effects and increased risks (e.g., deep venous thrombosis, breast cancer); therefore, topical agents may be preferred • Bethanechol may cause hypotension, increased sweating and salivation, headache, cramps, diarrhea, nausea and vomiting, and worsening of asthma