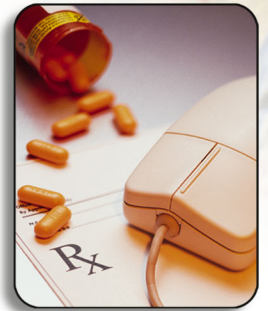




Quality Medication Administration Project
Leading The Way In Home Care Excellence

Quality Medication Administration Project National Collaborative 2006



MEDICATION ASSESSMENT PROTOCOL

Purpose: To provide a standardized approach to evaluating patient ability to administer medications.







	Instructions	Clinician Observation/Assessment
1	<ul style="list-style-type: none"> ✓ Ask patient to demonstrate how he/she takes his/her medication. ✓ Ask if the patient has any help to prepare or select the appropriate medications. 	<ul style="list-style-type: none"> • Observe the patient performing preparatory activity (e.g., gathering medication supplies or moving to area where medications are routinely stored/organized). • Is the process organized? • Identify compliance aids used. • If the patient does have assistance, determine (through observation and interview) if the assistance is <i>necessary</i>.
2	<p>Once the medication supplies are assembled (or accessed):</p> <ul style="list-style-type: none"> ✓ Ask the patient to describe how he or she would proceed with taking his or her medicines (i.e., ask specifically, “What would you do first? Second?” etc.) 	<ul style="list-style-type: none"> • Is the process appropriate as described? • Correct dosage, time, and frequency? • Check the patient’s response against the directions for his or her specific medications.
3	<p>If ability to sequence the multi-step medication administration task is not evident:</p> <ul style="list-style-type: none"> ✓ Ask the patient to demonstrate a multi-step medication administration task (i.e., “Please show me how you would open your medicine bottles and take your medication.”) 	<ul style="list-style-type: none"> • Does the patient demonstrate ability to appropriately complete all steps in the task? <ul style="list-style-type: none"> • Selects the appropriate bottles • Opens each one and selects the correct dosage prior to closing lid(s) • Takes medication as directed • Closes lid(s) and returns bottles to storage area.
4	<p>Check adherence:</p> <ul style="list-style-type: none"> ✓ As part of the comprehensive assessments AND ✓ On an ongoing basis. 	<ul style="list-style-type: none"> • Review calendar, diary, list, pillbox, etc. to determine compliance. • Select one medication with known start date and count pills to verify compliance. • Does patient have any established daily routines which are, or could be, tied-in to medication administration?






MEDICATION NON-ADHERENCE (staff education tool)

Purpose: To promote a comprehensive and standardized approach to evaluating the presence and possible underlying causes of medication non-adherence.

When general assessment findings suggest patient is not taking oral medications as prescribed, assess further:

Potential Non-Adherence Issues	Assessment Strategies	Referral Triggers?
Knowledge Deficit 	<p>Is there evidence to support/suggest that patient/caregiver does not understand medication regimen?</p> <ul style="list-style-type: none"> • “I’m not having (symptom) anymore, so I’m not sure whether to keep taking this.” • “That makes my stomach upset, so I try not to take it.” 	RN
Illiteracy 	<p>Is there evidence to support/suggest that patient’s/caregiver’s inability to read is affecting medication compliance?</p> <ul style="list-style-type: none"> • Unable to read medication name, frequency, dose, other instructions 	RN, SLP, OT
Financial Concerns* 	<p>Is there evidence to support/suggest that patient is limiting medication use to save drug (i.e. to save money)?</p> <ul style="list-style-type: none"> • “I take it when I really need it.” • “I sometimes only take half the ordered amount.” 	RN, MSW
Fear of Addiction* 	<p>Is there evidence to support/suggest that patient is limiting medication use due to concerns he or she will become addicted?</p> <ul style="list-style-type: none"> • “I want to get off that stuff.” • “I only take it when I can’t stand it anymore.” 	RN, MSW
Drug Diversion or Over-Medicating* 	<p>Is there evidence to support/suggest that patient is taking too much medication?</p> <ul style="list-style-type: none"> • “I need a refill; the bottle spilled in the sink.” • “Even doubling the prescribed amount does not <u>touch</u> the pain.” (do not assume intentional over-medicating without evaluating for true ineffectiveness of current meds, need for adjuvant therapy, etc.) 	RN, MSW
Health Belief/ Expectations* 	<p>Is there evidence to support/suggest that the patient’s medication non-compliance may be due to general beliefs or expectations about health and illness?</p> <ul style="list-style-type: none"> • “If he is meant to get better, it will happen.” • “If I take the pills, it will show a lack of faith.” 	RN, MSW

<p>Memory Deficits</p> 	<p>Is there evidence to support/suggest that the patient is forgetting to take medications, or forgetting that medications have already been taken – resulting in non-compliance?</p> <ul style="list-style-type: none"> • “I usually take one after lunch, but my daughter called, and I can’t remember if I took it.” • pills found in chair, on table by cup, etc. • incorrect pill counts • signs of ineffective drug therapy 	<p>RN, OT, SLP</p>
<p>Functional Deficits</p> 	<p>Is there evidence to support/suggest that patient/caregiver non-adherence is due to functional deficits?</p> <ul style="list-style-type: none"> • fine motor/gross motor/mobility • vision • swallowing 	<p>OT, SLP, PT</p>
<p>Disorganization</p> 	<p>Is there evidence to support/suggest that the patient’s medication administration methods lack organization?</p> <ul style="list-style-type: none"> • bottles/pills in multiple locations • unable to locate all medications • reported administration methods vary from day to day (inconsistent) • lack of established or predictable routines (sleep, meals, ADLs, etc.) 	<p>RN, OT, SLP, MSW</p>

***May not affect patient’s ability to take medications, therefore may not impact M0780 scoring**

Referrals should be made based on patient need, state practice acts, and agency policy.








Name: _____

MANAGING YOUR MEDICINES

Many people need help in managing their medicines. One of our goals in home care is to help you understand the purpose of your medicines and how to take them correctly.

You can help your home care nurse or therapist understand the type of help you might need by completing the table below.

Place a <input checked="" type="checkbox"/> in the box if the statement applies to you ↓		
	I have new medicines.	
	I have changed medicines.	
	I don't understand the instructions related to my medications.	
	I am not sure how my medicines help my condition.	
	I don't think that my medicines help me.	
	I am concerned about side effects.	
	I don't always remember to take my medicines at the right time.	
 	I have trouble reading or seeing small print instructions on medicine bottles.	
	I have trouble holding the small pills or opening the packaging or the medicine bottles.	
	I have trouble paying for my medicines.	

Please write down any other concerns you may have:



MED TEACHING STRATEGIES

Purpose: To promote a consistent approach to assessing, teaching, and evaluating the patient's knowledge and ability related to the *Improvement in Management of Oral Medications* outcome measure.

ASSESS

Make sure comprehensive assessment includes learning assessment and barriers:

- | | |
|---|--|
| <input type="checkbox"/> Sensorimotor barrier? | <input type="checkbox"/> Language barrier? |
| <input type="checkbox"/> Environmental barrier? | <input type="checkbox"/> Pain/discomfort? |
| <input type="checkbox"/> Cognitive barrier? | <input type="checkbox"/> Cultural/religious practices? |
| <input type="checkbox"/> Emotional barrier? | <input type="checkbox"/> Poor motivation? |
- NO BARRIERS... READY TO LEARN ?

TEACH

Make sure teaching includes aspects that can improve self-administration:

- Visual recognition of the drug?
- Purpose?
- Dosing & administration?
- Brand & generic names?
- Expected duration of therapy?
- When to take medication relative to meals, sleep, etc?
- What to do in case a dose is missed?
- What to do if the condition being treated becomes/remains a problem?

EVALUATE

Make sure to evaluate and document the patient's or caregiver's response to your teaching:

- Needs review?
- Repeats knowledge with cue(s) OR performs actions under supervision?
- Verbalizes knowledge/performs actions spontaneously (without cueing/supervision)?



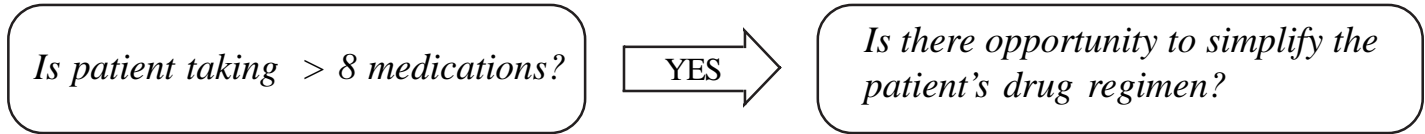
Med Teaching Strategies "Best Practices for Improvement in Management of Oral Medications" © OASIS ANSWERS, Inc. 2005

This material was developed by Linda Krulish, PT, MHS, and Stephanie Mello Gaskell, MS, MBA, RN, COS-C, and distributed by Quality Insights of Pennsylvania, the Medicare Quality Improvement Organization for Pennsylvania, under contract with the Centers for Medicare & Medicaid Services (CMS). The views presented do not necessarily reflect those of CMS. Publication number 7SOW-PA-HH05.125

MEDICATION SIMPLIFICATION PROTOCOL:

Purpose: To encourage a standardized and collaborative approach to simplifying complex medication regimens.

Use: Add triggers to comprehensive assessment to target patients for medication reduction/simplification strategies:



Goals:

- 1) Use the fewest medications possible in the simplest form to achieve the desired treatment goal.
- 2) Eliminate preventable drug-related adverse events.
- 3) Use non-pharmacological therapies in place of medications when possible.
- 4) Improve patient medication regimen adherence and independence.

Process: Agency staff will work collaboratively with the organization or community-based pharmacist and/or physician to apply criteria and meet goals.

Medication Simplification Steps:

- 1) Remove/discard unnecessary or expired drugs to prevent confusion.
- 2) Encourage use of a single pharmacy to enhance regimen review and collaboration with pharmacist.
- 3) Consider non-pharmacologic alternatives.
- 4) Coordinate administration times with established sleep and activity patterns/routines.
- 5) Decrease administration frequency, using sustained-release or long acting products.
- 6) Reduce multiple medications to treat a single condition, unless combination therapy is intentional.
- 7) Discontinue/substitute cautionary medications known to be problematic for geriatric patients (e.g., “Beers Criteria”).

References for Protocol Development:

“Medication Regimen Simplification” QMWeb – accessed 02/03/04

<http://mqa.dhs.state.tx.us/qmweb/MedSim.htm>

Fick, DM, Cooper, JW, Wade, WE, Waller, JL, Maclean, JR, and Beers, MH. (2003) Updating the Beers Criteria for Potentially Inappropriate Medication Use in Older Adults. *Arch Intern Med*; 163: 2716-2724. (including correction note published *Arch Intern Med* 164:298.)

Beers, MH. (1997) Explicit criteria for determining potentially inappropriate medication use by the elderly: an update. *Arch Intern Med*; 157:1531-6.

Texas Health Care Association Website, Best Practices <http://www.txhca.org/BestPractices/MedMgmt/medbeer1.pdf>

Accessed 02/03/04

Ugalino, JA. (2001) Understanding the Pharmacology of Aging. *Hospital Physician Medical Practice for Staff & Residents*, Geriatric Medicine Board Review Manual, April; 1(4).



Medication Simplification Protocol – QMAP “Best Practices for Improvement in Management of Oral Medications” OASIS ANSWERS, Inc. © 2005

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STEPS to MEDICATION SIMPLIFICATION



**Discontinue/Substitute
Cautionary Meds**
(MD, Pharm, RN)



**Multiple Meds for Single
Condition**
(MD, Pharm, RN)



**Long-Acting/Sustained-Release
Alternatives**
(MD, Pharm, RN, Patient/Caregiver)



**Coordinate Doses with
Established Daily Routines**
(MD, Pharm, RN, PT, OT, SLP, Aide, Patient/Caregiver)



Non-Drug Alternatives
(MD, RN, PT, OT, Aide, Patient/Caregiver)



Single Pharmacy
(MD, Pharm, RN, PT, OT, SLP, Patient/Caregiver)








**Remove/Discard
Old/Expired Drugs**
(RN, PT, OT, SLP, Patient/Caregiver)




MEDICATION COMPLIANCE AIDS – SELECTION CRITERIA

Purpose: To assist in appropriate selection of medication compliance aids, based on identified patient skills and/or deficits.

Candidates for **independent medication management with compliance aids (M0780 response “0”)** should be able to physically access medications (in their specific environment), sequence a two to three step process, and physically take (i.e., swallow) the medication.

Candidates for **assisted medication management with compliance aids (M0780 response “1”)** should be able to participate in taking (i.e., swallowing) oral medications with assistance, cueing, or compliance aid set up.

	Compliance aid/feature:	Skills patient must have to use aid effectively:
	Medication list (text only)	<ul style="list-style-type: none"> • Adequate vision • Able to read • Able to recognize and monitor time • Able to match written word to time, drug, and task.
	Medication schedule (illustrated drug + time)	<ul style="list-style-type: none"> • Adequate vision • Able to read OR • Able to match word, picture, or pill to actual drug • Able to match written word or picture to # of pills and time of day and task • Able to monitor time.
	Pill box	<ul style="list-style-type: none"> • Adequate vision and fine motor skills • Able to read OR • Able to match word or picture on box to day of week, time of day, etc. • Able to monitor time of day.
	Compliance packaging: (i.e., blister packs)	<ul style="list-style-type: none"> • Adequate vision and fine motor skills • Able to read OR • Able to match word or picture on pack to # of pills and time of day • Able to monitor time.
	Medication alarm	<ul style="list-style-type: none"> • Adequate hearing to recognize auditory alarm OR • Adequate vision and access to recognize visual cue • Able to match alarm to drug and task • Able to access and take drugs once reminded.

 <p>The image shows a small white rectangular box labeled 'Talking' and a white cylindrical device labeled 'e-pill Talking Prescription' with an orange pill bottle on top.</p>	<p>Recorded message</p>	<ul style="list-style-type: none"> • May require patient to initiate message playback • Adequate hearing to detect auditory message • Able to match spoken word to object/task • Message length/complexity must be within patient's processing capacity (< 5 words, > 5 words, 2-step command, etc.) • Able to access and take drug once reminded.
 <p>The image features a blue speech bubble with the text 'Fred...Don't forget to take your medicine this morning!' and a cartoon illustration of a hand holding a yellow telephone receiver.</p>	<p>Telephone reminder</p>	<ul style="list-style-type: none"> • Adequate phone access & use (auditory or adapted means) • Able to match instruction to drug and task • Message length/complexity must be within patient's processing capacity • Able to access and take drug once reminded.
 <p>The image shows two white circular devices. The one on the left is labeled 'e-pill Automatic Dispenser' and has a pill tray. The one on the right is a similar device with a pill tray and a small opening.</p>	<p>Automated dispensing</p>	<ul style="list-style-type: none"> • Adequate hearing to recognize auditory alarm OR • Adequate vision and access to recognize visual cue • Able to match alarm to task • Able to access and take drugs once reminded.

References:

- Atkin, PA, Ogle, SJ. Issues of Medication Compliance and the Elderly. *Adverse Drug Reactions & Toxicology Review*, (1996) 15, 109-118.
- Cook, PF. Methods for Assessing Medication Compliance: Research Summary (2001), www.scriptassistllc.com, last accessed 02/04/04
- Guerette, P, Nakai, R., The Right Prescription. *TeamRehab Report*, Page 21-23, (1993), www.wheelchairnet.org, last accessed 02/03/04.
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- www.lifeclinic.com last accessed 02/05/04



ORAL MEDICATIONS - CARE PLANNING TOOL

Selection Criteria by OASIS Level

Purpose: To assist in selection of interventions to improve management of oral medications based on the initial patient status on M0780.

FOR M0780 OUTCOME INTERVAL “2” ➔ “1”		
Barrier(s):	Problem(s):	Care Planning/Intervention(s):
Physiological	Pain results in the need for medications to be administered by someone else.	Referral to RN/PT/OT <ul style="list-style-type: none"> • pain management interventions
Cognitive	Cognitive impairment prevents patient from taking medication independently even with set up, diary, or reminders. Knowledge deficit prevents patient from taking medication independently even with set up, diary, or reminders.	Referral to OT/SLP <ul style="list-style-type: none"> • task analysis and simplification • compensatory memory strategies • sequencing strategies • environmental modifications to improve organization and accessibility • evaluation for selection of medication compliance aids. Referral to RN <ul style="list-style-type: none"> • medication teaching • implement compliance aid • simplify drug regime. Consider: <ul style="list-style-type: none"> ➤ MEDICATION COMPLIANCE AIDS – SELECTION CRITERIA ➤ MEDICATION REGIMEN SIMPLIFICATION PROTOCOL ➤ MEDICATION TEACHING STRATEGIES
Physical	Motor impairment prevents patient from taking medication unless administered by someone else. Visual impairment prevents patient from independently taking medication unless administered by someone else. Dysphagia prevents safe ingestion of oral medications unless administered by someone else. Environmental barrier prevents patient from being able to access medications, requiring administration by someone else.	Referral to PT/OT <ul style="list-style-type: none"> • motor task simplification • evaluation for selection of medication compliance aids • environmental modifications to reduce barriers • fine motor training • strength training. Coordination with dispensing pharmacy for packaging redesign Environmental modifications to improve patient’s ability to visually recognize medications or to recognize medications using other means Referral to SLP for dysphagia therapy Environmental modifications to improve access to medications and necessary supplies for independent administration Consider: <ul style="list-style-type: none"> ➤ MEDICATION COMPLIANCE AIDS – SELECTION CRITERIA

FOR M0780 OUTCOME INTERVAL “1” → “0”

Barrier(s):	Problem(s):	Care Planning/Intervention(s):
Physiological	Pain results in the need for someone to assist with medication administration.	Referral to RN/PT/OT <ul style="list-style-type: none"> • pain management interventions
Cognitive	<p>Cognitive impairment or depression affecting motivation prevents patient from taking correct medications and proper dosages at correct times unless reminded or otherwise assisted with compliance aid set-up/management.</p> <p>Cognitive impairment results in ineffective use of compensatory techniques or strategies (i.e. use of compliance aids), without reminders or assistance.</p> <p>Knowledge deficit prevents patient from taking medication independently without set up, diary, or reminders.</p>	<p>Referral to psych nursing/OT</p> <ul style="list-style-type: none"> • interventions to improve depression/effects <p>Referral to OT/SLP</p> <ul style="list-style-type: none"> • task simplification • compensatory memory strategies • establish medication schedule around daily routines • evaluate for internalization of reminder strategies • evaluate for medication compliance aids • environmental modifications to improve organization and accessibility and to reduce barriers • sequencing strategies. <p>Referral to RN</p> <ul style="list-style-type: none"> • medication teaching • implement compliance aid • simplify drug regime. <p>Consider:</p> <ul style="list-style-type: none"> ➤ MEDICATION COMPLIANCE AIDS – SELECTION CRITERIA ➤ MEDICATION REGIMEN SIMPLIFICATION PROTOCOL ➤ MEDICATION TEACHING STRATEGIES
Physical	<p>Motor impairment prevents patient from taking medication without assistance.</p> <p>Visual impairment prevents patient from taking medications without assistance.</p> <p>Environmental barrier prevents patient from being able to access medications, requiring assistance with set up or access.</p> <p>Dysphagia prevents safe ingestion of oral medications without assistance.</p>	<p>Referral to PT/OT</p> <ul style="list-style-type: none"> • motor task simplification • evaluation for selection of medication compliance aids • environmental modifications to reduce barriers • fine motor training • strength training. <p>Coordination with dispensing pharmacy for packaging redesign</p> <p>Environmental modifications to improve patient’s ability to visually recognize medications or to recognize medications using other means</p> <p>Referral to SLP for dysphagia therapy</p> <p>Environmental modifications to improve access to medications and necessary supplies for independent administration</p> <p>Consider:</p> <ul style="list-style-type: none"> ➤ MEDICATION COMPLIANCE AIDS – SELECTION CRITERIA



BEERS CRITERIA

2002 Criteria for Potentially Inappropriate Medication Use in Older Adults: Independent of Diagnoses or Conditions

Drug	Concern	Severity Rating (High or Low)
Propoxyphene (Darvon) and combination products (Darvon with ASA , Darvon-N , and Darvocet-N)	Offers few analgesic advantages over acetaminophen, yet has the adverse effects of other narcotic drugs.	Low
Indomethacin (Indocin and Indocin SR)	Of all available nonsteroidal anti-inflammatory drugs, this drug produces the most CNS adverse effects.	High
Pentazocine (Talwin)	Narcotic analgesic that causes more CNS adverse effects, including confusion and hallucinations, more commonly than other narcotic drugs. Additionally, it is a mixed agonist and antagonist.	High
Trimethobenzamide (Tigan)	One of the least effective antiemetic drugs, yet it can cause extrapyramidal adverse effects.	High
Muscle relaxants and antispasmodics: methocarbamol (Robaxin), carisoprodol (Soma), chlorzoxazone (Paraflex), metaxalone (Skelaxin), cyclobenzaprine (Flexeril), and oxybutynin (Ditropan). Do not consider the extended-release Ditropan XL .	Most muscle relaxants and antispasmodic drugs are poorly tolerated by elderly patients, since these cause anticholinergic adverse effects, sedation, and weakness. Additionally, their effectiveness at doses tolerated by elderly patients is questionable.	High
Flurazepam (Dalmane)	This benzodiazepine hypnotic has an extremely long half-life in elderly patients (often days), producing prolonged sedation and increasing the incidence of falls and fracture. Medium- or short-acting benzodiazepines are preferable.	High
Amitriptyline (Elavil), chlordiazepoxide-amitriptyline (Limbitrol), and perphenazine-amitriptyline (Triavil)	Because of its strong anticholinergic and sedation properties, amitriptyline is rarely the antidepressant of choice for elderly patients.	High
Doxepin (Sinequan)	Because of its strong anticholinergic and sedating properties, doxepin is rarely the antidepressant of choice for elderly patients.	High
Meprobamate (Miltown and Equanil)	This is a highly addictive and sedating anxiolytic. Those using meprobamate for prolonged periods may become addicted and may need to be withdrawn slowly.	High
Doses of short-acting benzodiazepines: doses greater than lorazepam (Ativan), 3 mg; oxazepam (Serax), 60 mg; alprazolam (Xanax), 2 mg; temazepam (Restoril), 15 mg; and triazolam (Halcion), 0.25 mg	Because of increased sensitivity to benzodiazepines in elderly patients, smaller doses may be effective, as well as safer. Total daily doses should rarely exceed the suggested maximums.	High
Long-acting benzodiazepines: chlordiazepoxide (Librium), chlordiazepoxide-amitriptyline (Limbitrol), clidinium-chlordiazepoxide (Librax), diazepam (Valium), quazepam (Doral), halazepam (Paxipam), and chlorazepate (Tranxene)	These drugs have a long half-life in elderly patients (often several days), producing prolonged sedation and increasing the risk of falls and fractures. Short- and intermediate-acting benzodiazepines are preferred if a benzodiazepine is required.	High
Disopyramide (Norpace and Norpace CR)	Of all antiarrhythmic drugs, this is the most potent negative inotrope and therefore may induce heart failure in elderly patients. It is also strongly anticholinergic. Other antiarrhythmic drugs should be used.	High
Digoxin (Lanoxin) (should not exceed 0.125 mg/d except when treating atrial arrhythmias)	Decreased renal clearance may lead to increased risk of toxic effects.	Low
Short-acting dipyridamole (Persantine)	Do not consider the long-acting dipyridamole (which has better properties than the short-acting in older adults) except with patients with artificial heart valves. May cause orthostatic hypotension.	Low
Methyldopa (Aldomet) and methyldopa-hydrochlorothiazide (Aldoril)	May cause bradycardia and exacerbate depression in elderly patients.	High

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Reserpine at doses 0.25 mg	May induce depression, impotence, sedation, and orthostatic hypotension.	Low
Chlorpropamide (Diabinese)	It has a prolonged half-life in elderly patients and could cause prolonged hypoglycemia. Additionally, it is the only oral hypoglycemic agent that causes SIADH.	High
Gastrointestinal antispasmodic drugs: dicyclomine (Bentyl), hyoscyamine (Levsin and Levsinex), propantheline (Pro-Banthine), belladonna alkaloids (Donnatal and others), and clidinium-chlordiazepoxide (Librax)	GI antispasmodic drugs are highly anticholinergic and have uncertain effectiveness. These drugs should be avoided (especially for long-term use).	High
Anticholinergics and antihistamines: chlorpheniramine (Chlor-Trimeton), diphenhydramine (Benadryl), hydroxyzine (Vistaril and Atarax), cyproheptadine (Periactin), promethazine (Phenergan), tripeleminamine, dexchlorpheniramine (Polaramine)	All nonprescription and many prescription antihistamines may have potent anticholinergic properties. Nonanticholinergic antihistamines are preferred in elderly patients when treating allergic reactions.	High
Diphenhydramine (Benadryl)	May cause confusion and sedation. Should not be used as a hypnotic, and when used to treat emergency allergic reactions, it should be used in the smallest possible dose.	High
Ergot mesyloids (Hydergine) and cyclandelate (Cyclospasmol)	Have not been shown to be effective in the doses studied.	Low
Ferrous sulfate 325 mg/d	Doses 325 mg/d do not dramatically increase the amount absorbed but greatly increase the incidence of constipation.	Low
All barbiturates (except phenobarbital) except when used to control seizures	Are highly addictive and cause more adverse effects than most sedative or hypnotic drugs in elderly patients.	High
Meperidine (Demerol)	Not an effective oral analgesic in doses commonly used. May cause confusion and has many disadvantages to other narcotic drugs.	High
Ticlopidine (Ticlid)	Has been shown to be no better than aspirin in preventing clotting and may be considerably more toxic. Safer, more effective alternatives exist.	High
Ketorolac (Toradol)	Immediate and long-term use should be avoided in older persons, since a significant number have asymptomatic GI pathologic conditions.	High
Amphetamines and anorexic agents	These drugs have potential for causing dependence, hypertension, angina, and myocardial infarction.	High
Long-term use of full-dosage, longer half-life, Non-COX-selective NSAIDs: naproxen (Naprosyn , Avaprox , and Aleve), oxaprozin (Daypro), and piroxicam (Feldene)	Have the potential to produce GI bleeding, renal failure, high blood pressure, and heart failure.	High
Daily fluoxetine (Prozac)	Long half-life of drug and risk of producing excessive CNS stimulation, sleep disturbances, and increasing agitation. Safer alternatives exist.	High
Long-term use of stimulant laxatives: bisacodyl (Dulcolax), cascara sagrada, and Neoloid except in the presence of opiate analgesic use	May exacerbate bowel dysfunction.	High
Amiodarone (Cordarone)	Associated with QT interval problems and risk of provoking torsades de pointes. Lack of efficacy in older adults.	High
Orphenadrine (Norflex)	Causes more sedation and anticholinergic adverse effects than safer alternatives.	High
Guanethidine (Ismelin)	May cause orthostatic hypotension. Safer alternatives exist.	High
Guanadrel (Hylorel)	May cause orthostatic hypotension.	High
Cyclandelate (Cyclospasmol)	Lack of efficacy.	Low
Isoxsuprine (Vasodilan)	Lack of efficacy.	Low
Nitrofurantoin (Macrochantin)	Potential for renal impairment. Safer alternatives available.	High
Doxazosin (Cardura)	Potential for hypotension, dry mouth, and urinary problems.	Low

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Methyltestosterone (Android , Virilon , and Testrad)	Potential for prostatic hypertrophy and cardiac problems.	High
Thioridazine (Mellaril)	Greater potential for CNS and extrapyramidal adverse effects.	High
Mesoridazine (Serentil)	CNS and extrapyramidal adverse effects.	High
Short acting nifedipine (Procardia and Adalat)	Potential for hypotension and constipation.	High
Clonidine (Catapres)	Potential for orthostatic hypotension and CNS adverse effects.	Low
Mineral oil	Potential for aspiration and adverse effects. Safer alternatives available.	High
Cimetidine (Tagamet)	CNS adverse effects including confusion.	Low
Ethacrynic acid (Edecrin)	Potential for hypertension and fluid imbalances. Safer alternatives available.	Low
Desiccated thyroid	Concerns about cardiac effects. Safer alternatives available.	High
Amphetamines (excluding methylphenidate hydrochloride and anorexics)	CNS stimulant adverse effects.	High
Estrogens only (oral)	Evidence of the carcinogenic (breast and endometrial cancer) potential of these agents and lack of cardioprotective effect in older women.	Low

Abbreviations: CNS, central nervous system; COX, cyclooxygenase; GI, gastrointestinal; NSAIDs, nonsteroidal anti-inflammatory drugs; SIADH, syndrome of inappropriate antidiuretic hormone secretion

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References:

Fick, DM, Cooper, JW, Wade, WE, Waller, JL, Maclean, JR, and Beers, MH. (2003) Updating the Beers Criteria for Potentially Inappropriate Medication Use in Older Adults. Arch Intern Med; 163: 2716-2724. (including correction note published Arch Intern Med 164:298.)



Beers Criteria

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