APPROPRIATE PRESCRIBING

AGS Geriatrics Evaluation and Management Tools (Geriatrics E&M Tools) support clinicians and systems that are caring for older adults with common geriatric conditions.

From the AMERICAN GERIATRICS SOCIETY

Geriatrics Evaluation & Management Tools

SCREENING

- Perform a medication review annually and each time a new medication is started or a dosage is changed.

MEDICATION REVIEW

- Review all patient's medications (it is best if the patient brings their medications to the visit):
  - Medications from other providers
  - Over-the-counter medications
  - Supplements
  - Herbal preparations
- Medication review can be done by or in collaboration with a pharmacist.
- Screen for medication adherence (nonadherence among older adults may be as high as 50%):
  - Inquire about difficulties taking medication and adverse events.
  - Ask patients to review which medications they are taking and how they are taking them (in a nonjudgmental manner) and compare to medication bottles' directions.
  - Review refill history.
  - Ask caregivers about medication adherence.
- Assess the patient's ability to understand and comply with the medication regimen.
  - Medication assessment tools such as the Medication Management Instrument for Deficiencies in the Elderly (MedMaIDE) tool may be helpful (www.pharmacy.umaryland.edu/practice/medmanagement/assisted_living/Tools-to-Assess-Self-Administration-of-Medication/).
- Observe the patient's ability to properly use an inhaler or administer medications such as insulin.
- Conduct a complete medication assessment:
  - Use of tools such as the AGS Beers Criteria may be helpful to review appropriateness of medications.
  - Indication for drug
  - Inquire about adverse reactions
  - Drug allergies
  - Drug–drug interactions
  - Drug–disease interactions

PRESCRIBING METHODS TO IMPROVE SAFETY AND ADHERENCE

BEFORE DECIDING TO PRESCRIBE A MEDICATION

- Consider the patient's life expectancy, time required to achieve therapeutic benefit, goals of treatment, and treatment targets before prescribing.
- Avoid prescribing before a diagnosis is made.
- Consider if the medication is necessary; nonpharmacologic approaches should always be considered first.
- Consider whether medication is being used to treat adverse events of another medication.
- Determine if nonadherence to current prescribed medication is leading to failure to reach therapeutic targets before increasing medication dosages or adding another medication to treat the same condition (eg, determine if patient is taking blood pressure medication as prescribed before increasing dose or adding another medication to reach blood pressure target).
- Determine the number of medications that will be acceptable/practical for the patient to take.
- Determine if the patient can adhere to necessary monitoring (blood tests for anticoagulants, diabetes, and anticonvulsant medications, etc).
- Assess if patient can accurately administer medications via inhaler or injection, and correctly instill eye drops.
- Consider whether therapeutic dose has been reached before switching to a new medication.
- Consider whether benefits outweigh the risks of medication.

ONCE DECISION TO PRESCRIBE IS MADE

- Consider whether one medication can be used to treat multiple conditions.
- Avoid starting two medications at the same time (when possible).
- Use the fewest number of medications and doses per day.
- Prescribe the least expensive comparable form of medication when possible.
- Use lowest possible starting dose in most circumstances.
- Identify administration times that will be practical for patient and caregiver.
- Ensure patient and caregiver understand:
  - The rationale behind the treatment (for improved adherence)
  - How to take the medication and for how long
  - When the medication should start to work, and how the patient will know if it is working
  - Possible adverse events and what to do if they occur
  - Monitoring needed (eg, blood tests for anticoagulants)
  - Always review any changes with the patient and caregiver; provide the changes in writing

DISCONTINUING MEDICATIONS

- Refer to AGS Beers Criteria and START/STOPP Toolkit to review appropriateness of medications.
- Medications that can usually be stopped are those:
  - Without identifiable indication; confer with other prescribers if needed
  - That do not seem to have had their intended response
  - That have not been or are no longer effective
  - With duplicate therapeutic, pharmacologic, or adverse event profiles
  - Not being taken, and adherence is not critical

DISCONTINUING MEDICATIONS (CONT'D)

- Events that should trigger considerations to stop one or more medications:
  - Care transitions
  - Annual/semiannual medications review
  - Starting a new medication
  - New problem
- Educate patient and/or caregiver regarding:
  - What to expect/intent of stopping medications
  - Instructions, eg, how to taper (if indicated)
  - Monitoring and follow-up
    - Withdrawal reactions
    - Exacerbation of underlying conditions

APPROACH TO REDUCING MEDICATION ERRORS

- Know or identify a real-time resource for understanding a medication's:
  - Dose recommendations, including adjustment for kidney function
  - Common adverse events
  - Potential for drug–drug interactions
  - Potential for drug–nutrient interactions
  - Potential for drug–disease interactions
- E-prescribe when possible.
  - Avoid prescribing the wrong drug via look-a-like errors.
  - Double check that dosage form, strength, directions, and quantity are correct.
- Write legibly.
- Write out the directions, strength, route, quantity, and number of refills.
- Always precede a decimal expression of <1 with a zero (eg, 0.01); never use a zero as the final digit after a decimal (eg, 1.0).
- Avoid using abbreviations, especially easily confused ones (eg, qd and qid).
- Avoid brand names.
- Do not use ambiguous directions such as "as directed" or "as needed".
- Include the medication's indication in the directions.
- Write dosages for thyroid replacement therapy in mcg, not mg.
- Always re-read what you've written.

AGE-ASSOCIATED CHANGES IN PHARMACOKINETICS AND PHARMACODYNAMICS

Parameter	Age Effect	Disease Factor Effect	Prescribing Implications
Absorption	Rate and extent are usually unaffected	Achlorhydria, concurrent medications, tube feedings	Drug–drug and drug–food interactions are more likely to alter absorption
Distribution	Increase in fat:water ratio; decreased plasma protein, particularly albumin	Heart failure, ascites, and other conditions increase body water	Fat-soluble drugs have a larger volume of distribution; highly protein-bound drugs have a greater (active) free concentration
Metabolism	Decrease in liver mass and liver blood flow decrease drug clearance; may be age-related changes in CYP2C19, while CYP3A4 and 2D6 are not affected	Smoking, genotype, other medications, alcohol, and caffeine have more effect than aging on metabolism	Lower dosages may be therapeutic
Elimination	Primarily renal; age-related decrease in glomerular filtration rate	Acute and/or chronic kidney impairment; decreased muscle mass can result in misleadingly low serum creatinine (Cr) levels	Serum Cr not a reliable measure of kidney function; best to estimate Cr clearance using formula
Pharmacodynamics	Less predictable and often altered drug response at usual or lower concentrations	Drug–drug and drug–disease interactions may alter responses	Prolonged pain relief with opioids at lower dosages; more sedation and postural instability from benzodiazepines; altered sensitivity to β-blockers