American College of Emergency Physicians®

ADVANCING EMERGENCY CARE

# POLICY STATEMENT

Approved January 2019

# *Geriatric Emergency Department Guidelines*

Reaffirmed January 2019

Approved by The American Geriatrics Society October 2013; by the Emergency Nurses Association January 2014; and by the Society for Academic Emergency Medicine October 2013

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*A joint policy statement of the American College of Emergency Physicians, American Geriatric Society, Emergency Nurses Association, and Society for Academic Emergency Medicine*

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**This document is the product of two years of consensus-based work that included representatives from the American College of Emergency Physicians, The American Geriatrics Society, Emergency Nurses Association, and the Society for Academic Emergency Medicine.**

# INTRODUCTION

According to the 2010 Census, more than 40 million Americans were over the age of 65, which was "more people than in any previous census." In addition, "between 2000 and 2010, the population 65 years and over increased at a faster rate than the total U.S. population." The census data also demonstrated that the population 85 and older is growing at a rate almost three times the general population. The subsequent increased need for health care for this burgeoning geriatric population represents an unprecedented and overwhelming challenge to the American health care system as a whole and to emergency departments (EDs) specifically.[1-4] Geriatric EDs began appearing in the United States in 2008 and have become increasingly common.[5]

The ED is uniquely positioned to play a role in improving care to the geriatric population.[6] As an ever-increasing access point for medical care, the ED sits at a crossroads between inpatient and outpatient care (Figure 1).[7,8] Specifically, the ED represents 57% of hospital admissions in the United States, of which almost 70% receive a non-surgical diagnosis.[9] The expertise which an ED staff can bring to an encounter with a geriatric patient can meaningfully impact not only a patient's condition, but can also impact the decision to utilize relatively expensive inpatient modalities, or less expensive outpatient treatments.[10, 11] Emergency medicine experts recognize similar challenges around the world.[12] Geriatric ED core principles have been described in the United Kingdom.[13]

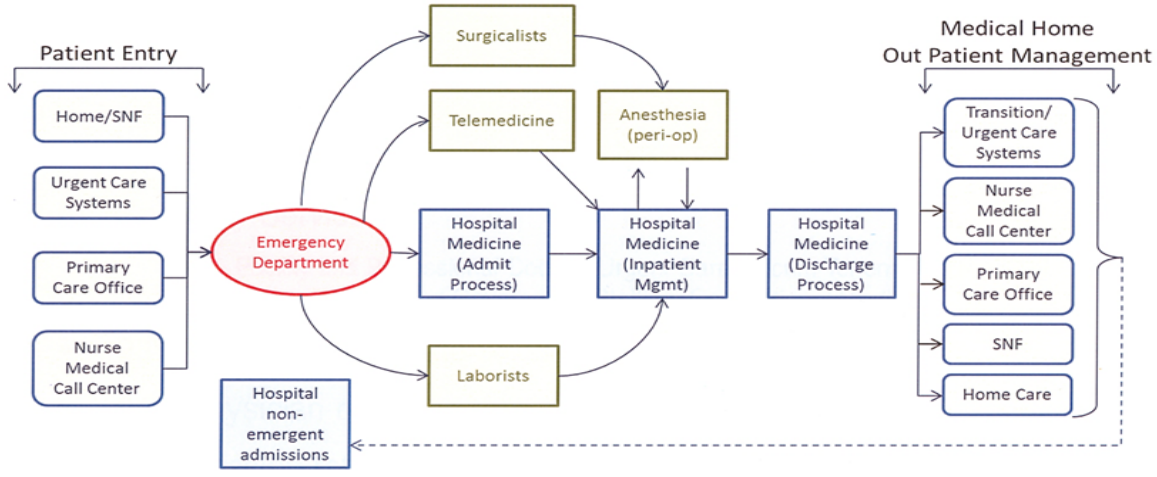



**Figure 1. The central role of the ED in geriatric health care in contemporary medicine (reproduced with permission from TeamHealth's Patient Care Continuum Model.)**

Furthermore, as the initial site of care for both inpatient and outpatient events, the care provided in the ED has the opportunity to "set the stage" for subsequent care provided. More accurate diagnoses and improved therapeutic measures can not only expedite and improve inpatient care and outcomes, but can effectively guide the allocation of resources towards a patient population that, in general, utilizes significantly more resources per event than younger populations.[9,14] Geriatric ED patients represent 43% of admissions, including 48% admitted to the intensive care unit (ICU).[15, 16] On average, the geriatric patient has an ED length of stay that is 20% longer and they use 50% more lab/imaging services than younger populations.[17, 18] In addition, Geriatric ED patients are 400% more likely to require social services. Despite the focus on geriatric acute care in the ED manifest by disproportionate use of resources, these patients frequently leave the ED dissatisfied and optimal outcomes are not consistently attained.[19-21]

Despite the fact that the geriatric patient population accounts for a large, and ever increasing, proportion of ED visits, the contemporary emergency medicine management model may not be adequate for geriatric adults.[7,8] A number of challenges face emergency medicine to effectively and reliably improve post-ED geriatric adult outcomes.[22] Multiple studies demonstrate ED physicians' perceptions about inadequate geriatric emergency care model training.[14, 23] Many common geriatric ED problems remain under-researched leaving uncertainty in optimal management strategies.[24-26] In addition, quality indicators for minimal standard geriatric ED care continue to evolve.[27] Older adults with multiple medical co-morbidities, often multiple medications, and complex physiologic changes present even greater challenges.[28,29] Programs specifically designed to address these concerns are a realistic opportunity to improve care.[7,8]

Similar programs designed for other age groups (pediatrics) or directed towards specific diseases (STEMI, stroke, and trauma) have improved care both in individual EDs and system-wide, resulting in better, more cost effective care and ultimately better patient outcomes.[30-32]

# GERIATRIC ED - PURPOSE

## Purpose

The purpose of these Geriatric Emergency Department Guidelines is to provide a standardized set of guidelines that can effectively improve the care of the geriatric population and which is feasible to implement in the ED. These guidelines create a template for staffing, equipment, education, policies and procedures, follow-up care, and performance improvement measures. When implemented collectively, a geriatric ED can expect to see improvements in patient care, customer service, and staff satisfaction.[7, 11] Improved attention to the needs of this challenging population has the opportunity to more effectively allocate health care resources, optimize admission and readmission rates, while simultaneously decreasing iatrogenic complications and the resultant increased length-of-stay and decreased reimbursement.

A goal of the geriatric ED is to recognize those patients who will benefit from inpatient care, and to effectively implement outpatient care to those who do not require inpatient resources. To implement most effectively, the geriatric ED will utilize the resources of the hospital, ED and inpatient, as well as outpatient resources. Making effective and expedient outpatient arrangements available to the geriatric population is of critical importance to the care of this population, recognizing that acute inpatient events are often accompanied by functional decline, increased dependency and increased morbidity.[33, 34] By using providers, including nurse practitioners, nurses, social workers, physician assistants, and physicians to coordinate care in the ED, the inpatient units, and during the immediate post-ED discharge period, the geriatric ED creates the opportunity to care for geriatric patients in the environment most conducive to a positive outcome.

The benefits of the Geriatric ED to the geriatric patient population are multiple and clear. By focusing attention and resources on the most common needs of the geriatric ED patient, care can be optimized. The benefit of a Geriatric ED to a hosting hospital can be multiple as well. These improved patient care standards can become a significant marketing tool for hospitals looking to reach out to the Medicare population and partner with extended care facilities. A Geriatric ED can market the ED to attract a patient population that may also utilize higher reimbursing hospital-based programs, including cardiac, orthopedic, and neurologic care. Further, with Medicare reimbursements decreasing and payment for iatrogenic complications such as wounds, catheter associated infections, etc. impacting hospital reimbursement; the need for special attention to geriatric needs has become even more pressing.

The term “geriatric” has had different definitions over the past decades. In 1985, the term "oldest old" was coined to identify those 85 years of age and older. Later Fries, et al defined three groups by dividing the older adult population into the young old (often 65-74), the middle old (75-85) and the oldest old (>85).[35, 36] The World Health Organization defined the older population starting at age 60.[37] Our guidelines used the construct that age 65 and older would be the geriatric population served by the Geriatric ED. Many hospitals may find that using the age 65 and older does not match the needs of their population and available resources. It may be most appropriate that each hospital identify the age for patients to be seen in their Geriatric ED. Through the continuum of physiologic aging complexity of health care issues increase and as such, the benefits of a Geriatric ED increase concurrently. The age range to be a patient in the Geriatric ED can be based on the literature, meaning age 60 or 65, or can be defined by the specific hospital community. One hospital uses age 55 based on when resources are available; another uses 65 years of age and another uses 75 years of age as the beginning age range for their Geriatric ED.

The recommendations found in this packet represent research and consensus-based best practices from the perspectives of the American College of Emergency Physicians, Society for Academic Emergency Medicine, American Geriatrics Society, and Emergency Nurses Association. With implementation of the following recommendations, hospitals, regardless of size, will positively impact the care of the geriatric emergency patients.

## STAFFING/ADMINISTRATION

The Geriatric ED staff and administration provides a multi-disciplinary team of care providers focused on the varying needs of the geriatric population. By providing trained staff in the ED, as well as readily available staff for inpatient care and outpatient follow up, the Geriatric ED can optimize ED visits, effectively deliver and/or coordinate care in a less costly and more comfortable outpatient setting when appropriate and coordinate inpatient resources for high-risk patients. An effective program will involve hospital site-specific staff as well as overall local coordination resources.

### *Background:*

Although published studies have not been clear on outcomes resulting from staffing modifications for the care of geriatric patients, they have demonstrated high levels of endorsement for ED staffing enhancements in general (94%), for the availability of specialized nurses (85%), pharmacists (74%), social workers (88%), geriatric consults (79%) and a designated professional to coordinate geriatric services (91%). There were moderate levels of endorsement for the availability of physical therapy (59%) and occupational therapy (53%).[38]

One common approach to enhanced older adult ED staffing in the literature is the use of geriatric consultation services in the ED.[39-42] Yuen, et al. found that over 26 months, there were 2202 geriatric

consultations (85 per month), with admission avoided in 85% (47% discharged home, 38% admitted to a "convalescent hospital").[42] Foo and colleagues evaluated geriatric assessment and intervention prior to discharge of geriatric patients from an ED observation unit. In the intervention group, 72% of patients had unrecognized needs requiring intervention. This group had fewer ED revisits (IRR 0.59) and hospital admissions (IRR 0.64) at 12 months.[41] However, results are not consistent across studies. Sinoff et al also evaluated an ED geriatric consult service and found a significantly higher admission rate (64%), with a 2-year mortality of 34% and institutionalization rate of 52%.[40] Social workers and case managers are essential to efficient geriatric ED management. Effective geriatric case management strategies continue to evolve.[43] Innovative models using volunteers to assess geriatric ED patients have also been evaluated and are acceptable to ED nurses and physicians.[29]

### *Recommendations:*

- The Geriatric ED will have staffing protocols in place to provide for geriatric-trained providers, including physician and nurse leadership and ancillary services. These protocols should include plans for times when such services may not be available.
- Staff members of the Geriatric ED will participate in educational/training to ensure high-quality geriatric care.
- Although departments may differ in the availability of staffing resources, departments should have available the following positions either as part of a hospital-based Acute Care of Elders (ACE) team or specific for the ED:

**Geriatric Emergency Department Medical Director**

- Qualifications:
  - Best practiced by a board-certified emergency physician with training in geriatrics
  - Completion of eight hours of geriatric appropriate CME every two years
- Responsibilities:
  - Member of hospital ED *and* Medicine committee
  - Oversight of geriatric performance improvement program
  - Liaison with Medical Staff for geriatric care concerns
  - Liaison with outpatient care partners including Skilled Nursing Facilities (SNFs), Board and Care facilities, home health providers, etc.
  - Identify needs for staff education and implement educational programs when appropriate.
  - Review, approve, and assist in the development of all hospital geriatric policies and procedures

**Geriatric Emergency Department Nurse Manager**

- Qualifications:
  - At least two years of experience in geriatrics (or in an ED that sees geriatric patients) within the previous five years
  - Experience with QI programs is recommended
  - Completion of eight hours of Board of Registered Nursing (BRN) approved continuing education units (CEU) in geriatric topics every two years.
- Responsibilities:
  - Participate in the development and maintenance of a geriatric performance improvement program
  - Liaison with outpatient care partners including, but not limited to SNFs, Board and Care facilities, home health providers, etc.
  - Member of selected hospital-based ED and/or medicine committees
  - Identify needs for staff education and implement educational programs when appropriate.

**Staff Physicians**
- Provide twenty-four-hour ED coverage or directly supervised by physicians functioning as emergency physicians. This includes senior residents practicing at their respective hospitals only.
- Staff physicians are encouraged to participate in geriatric specific education with a goal of 4 hours of CME annually specifically focused on the care of geriatric patients.

**Staff Nurses**
- Nursing staff is encouraged to participate in geriatric specific education.

**Medical Staff Specialists**
- Specialists will be available for consultation either by established medical staff policies or by pre-arranged transfer arrangements. Although each hospital's medical staff will support different specialist services, it is recommended that the Geriatric ED have access to:
  - Geriatrics
  - Cardiology
  - General Surgery
  - GI
  - Neurology
  - Orthopedists
  - Psychiatry, preferably with a geriatric specialty
  - Radiology

**Ancillary Services**
- Case management and social services
- Mid-level provider/physician extenders (optional, but recommended)
- Occupational/Physical therapists
- Pharmacists

## FOLLOW UP AND TRANSITION OF CARE

Acute hospitalization is associated with increased rates of acute delirium, nosocomial infections, iatrogenic complications, and functional declines in the geriatric adult.[44] Thus, one of the main goals of the Geriatric ED is to decrease hospital admissions. Making effective and expedient outpatient arrangements available to the geriatric population is of critical importance to the care of this population. However, discharge from the ED to the community presents significant challenges to the geriatric population.

### *Background:*
Published studies on ED-based interventions with improved access to community resources have had mixed results. Most demonstrate little effect of these interventions on either ED utilization or prevention of complications.[45-48] However, effective transition of care is clearly required to facilitate outpatient care after an ED evaluation. This transition process presents many challenges. In an era of daily ED crowding, effective, reliable discharge instructions are a challenge to all populations, particularly for the geriatric population.[49] Older ED patients identify misinformation as a primary course of dissatisfaction with their emergency care, a problem confounded and magnified by ongoing under-recognition of cognitive dysfunction, lower health literacy, and financial impediments for prescriptions and recommended outpatient follow-up.[50-52]

*Recommendations:*

- The Geriatric ED will have discharge protocols in place that facilitate the communication of clinically relevant information to the patient/family and outpatient care providers, including nursing homes. Essential information to optimize continuity of care at the time of discharge should include the following data elements:

    - Presenting complaints
    - Test results and interpretation
    - ED therapy and clinical response
    - Consultation Notes (in person or via telephone) in ED
    - Working discharge diagnosis
    - ED physician note, or copy of dictation
    - New prescriptions and alterations with long-term medications
    - Follow-up plan

Clinical information will be presented in a format in a way best suited for elder adults:

- Large font discharge instructions
- Health Insurance Portability and Accountability Act (HIPAA) compliant copied discharge instructions should be provided to family and care providers.

The Geriatric ED will have a process in place that effectively provides appropriate outpatient follow up either via provider-to-patient communication or the provision of direct follow up clinical evaluation.

- Although telephone follow up is the most commonly used, the use of newer technology, including telemedicine alternatives is recommended.

The Geriatric ED will maintain relationships and resources in the community that can be used by patients on discharge to facilitate care.

- Medical follow up
- Primary MD or "medical home"
- Case Manager to assist with compliance with follow up
- Safety Assessments
- Mobility
- Access to care and medical transportation resources
- Medical equipment
- Prescription assistance and education
- Home health, including outpatient nursing resources
- ADL resources including meal programs, etc.

Although a goal of the Geriatric ED should be to maintain older adults in their own homes whenever possible, some patients will require either short term or long-term placement into facilities when care cannot be provided appropriately at home. Thus, the Geriatric ED should have available community resources for the placement of patients to the appropriate level of care, including nursing homes, rehab facilities, board and cares, etc.

## EDUCATION

The success of the Geriatric ED program rests largely on the education of a multi-disciplinary staff directed toward the needs of the geriatric population. Residency and continuing medical education must take into account the unique physiology, atypical disease presentations, and psychosocial needs of older

persons.[14,23,53] Education and training evaluation of emergency personnel should be competency-based. The curriculum should contain interdisciplinary content, and learners should be assessed for interdisciplinary core competencies. Effective instructional methods include a mix of didactic lectures, case conferences, case simulations, clinical audits, journal clubs, web-based materials, and supervised patient care. Hands-on training is strongly preferred by many learners. Education may be effectively organized around the assessment of common and important geriatric chief complaints.

A Geriatric ED educational program is expected to include an initial initiative directed towards program implementation, increasing staff awareness of the geriatric population's needs, and specific policy and procedure initiatives.[54] Educational programs can be created and implemented internally (specific for each hospital), as part of a larger CME program, or through participation in externally created programs.

An educational program should include:

- Initial "go-live" implementation sessions
  - Involvement of multi-disciplinary teams including hospital-based leadership and outpatient resources
  - Geriatric emergency medicine didactic sessions for physician, nursing, and multi-disciplinary staff focused on geriatric care issues to be assessed and managed in the Geriatric ED
  - In-service education on geriatric-specific equipment
  - Program introduction for community-based organizations caring for geriatric patients with opportunity for input.
- Community awareness, involvement, and outreach
  - Emergency Medical Services (EMS) personnel perceive a deficit in their training as it relates to care of older patients, particularly in the areas of education and psychosocial issues.[55] The Geriatric ED should provide training for EMS personnel who rescue and transport older persons to their facilities.[56,57]
  - The Geriatric ED should also provide educational self-management materials for older adults and their families.
- Regular educational assessment and implementation of site-specific educational needs
  - QI data review with process improvement implementation
  - Periodic education/re-education of disease specific presentations with updates on policy/procedure changes, community care programs, etc.
  - An important educational goal is to provide familiarity with use of quick, bedside assessment tools.

Educational needs will be assessed on an ongoing basis by the Geriatric Medical Director and Geriatric Liaison nurse and implemented as needed based on staff needs. As the program grows and the competency of staff changes over time, it is expected that educational needs will change. It is highly recommended that education be coordinated with peer review cases, based on cases experienced in the local ED.

Although educational content should be tailored to individual department needs, recommended content includes the following:

- Atypical presentations of disease[23, 58-62]
- Trauma, including falls and hip fracture[23, 58, 62-66]
- Cognitive and behavioral disorders[23, 58-60, 62, 66-72]
- Modifications for older patients of emergent interventions[23]
- Medication management[23, 58-62, 66-69, 71]
- Transitions of care and referrals to services[23, 60, 61, 67-69, 71, 73]

- Pain management and palliative care[23, 66, 74]
- Effect of comorbid conditions[23, 58]
- Functional impairments and disorders[58-61, 71]
- Management of the group of diseases peculiar to the geriatric adult, including conditions causing abdominal pain[58-60, 62, 66-68, 75]
- Weakness and dizziness[58, 60, 63, 76]
- Iatrogenic injuries[67, 68, 77]
- Cross-cultural issues involving older patients in the emergency setting [63]
- Elder abuse and neglect[58, 61, 66, 71]
- Ethical issues, including advance directives[58, 61, 62, 69, 78]

## QUALITY IMPROVEMENT

Implement an effective Quality Improvement (QI) program with the goal to collect and monitor data (Figure 2) in a manner conducive to staff education and program success.

### *Geriatric Program Quality Improvement Plan*

- A geriatric program shall be developed and monitored by the Geriatric Medical Director and Geriatric Nurse Manager.
- A geriatric report shall be generated and delivered to the ED committee no less than quarterly by the Geriatric Medical Director.
- The program shall include an interface with pre-hospital care, ED, trauma, critical care, alternative level care facilities and hospital wide QI activities.
- A mechanism shall be established to easily identify geriatric patient (65 years & older) visits to the ED.
- The geriatric QI program will include identification of the indicators, methods to collect data, results and conclusions, recognition of improvement, action(s) taken, and assessment of effectiveness of actions and communication process for participants.
- A mechanism to document and monitor the geriatric education of the Geriatric ED staff shall be established.
- The geriatric QI program shall include reviews of the following geriatric patients seen in the ED:
  - Geriatric volume
  - Admission rate
  - Readmission rate
  - Deaths
  - Suspected abuse or neglect
  - Transfers to another facility for higher level of care
  - Admissions requiring upgrading of level of care to ICU within 24 hours of admission
  - Return visits to the ED within 72 hours
  - Completion of at-risk screening tool[79]
  - Completion of follow up reevaluation for discharged patients

- In addition to the above, individual disease specific entities that facilities may also monitor include:
  - Falls in the geriatric adult
    - Prevalence
    - Prevalence of traumatic injuries associated with falls
      - Hip fractures
      - Traumatic intracranial hemorrhage

    - Blunt abdominal injuries
    - Death
  - Poly-pharmacy screening in patients with falls
  - Screening of those at-risk of falls
    - Physical therapy evaluation completed on at-risk patients.
  - Referral patterns after fall (visual screening, gait rehab, etc.)
- Catheter use and catheter associated UTIs (CAUTIs)
  - Foley insertion and indication checklist usage data
  - Days of catheter use in hospital
  - Automatic discontinuation orders utilized
  - Total catheter days
  - ED CAUTI prevalence
- Medication reconciliation/pharmacy oversight
  - Documentation of high-risk medications
  - Usage of high-risk medication in ED (See addendum)
  - Percentage of revisits for medication adverse reaction or noncompliance
- Restraint
  - Indication documented
  - Chemical restraint attempted and with which medication

**Figure 2. Sample Geriatric ED Quality Assessment Instrument (Dashboard)**

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **GLOBAL MEASURES** | | | | | | | | | | | | |
| **Patient volume >65** | | | | | | | | | | | | |
| **% of total admissions** | | | | | | | | | | | | |
| **Readmissions** | | | | | | | | | | | | |
| **72 hour ED revisits** | | | | | | | | | | | | |
| **24 hour admission upgrades** | | | | | | | | | | | | |
| **Geriatric abuse** | | | | | | | | | | | | |
| **Deaths** | | | | | | | | | | | | |
| **DISEASE SPECIFIC** | | | | | | | | | | | | |
| **FALLS** | | | | | | | | | | | | |
| **Hip Fractures** | | | | | | | | | | | | |
| **Traumatic ICH** | | | | | | | | | | | | |
| **Blunt Abdominal Injury** | | | | | | | | | | | | |
| **Death** | | | | | | | | | | | | |
| **Fall-Risk Assessment** | | | | | | | | | | | | |
| **Physical Therapy Eval** | | | | | | | | | | | | |
| **URINARY CATHETERS** | | | | | | | | | | | | |
| **Check List Used** | | | | | | | | | | | | |
| **Catheter Days** | | | | | | | | | | | | |
| **Automatic Discontinue** | | | | | | | | | | | | |
| **CAUTI Stay Length** | | | | | | | | | | | | |
| **MEDICINE MANAGEMENT** | | | | | | | | | | | | |
| **High Risk Meds Noted** | | | | | | | | | | | | |
| **ED High Risk Meds** | | | | | | | | | | | | |
| **Adverse Reaction Revisit** | | | | | | | | | | | | |
| **Non-compliance Revisit** | | | | | | | | | | | | |
| **DELIRIUM** | | | | | | | | | | | | |
| **Screen Documented** | | | | | | | | | | | | |
| **Restraint Indications** | | | | | | | | | | | | |
| **Chemical Restraint Attempt** | | | | | | | | | | | | |
| **Behavior Physical Restraint Used** | | | | | | | | | | | | |

## EQUIPMENT AND SUPPLIES

Geriatric patient care requires equipment designed for a patient population with specific needs. Challenges involving mobility, incontinence, behavioral needs, etc. are best met with equipment designed for the effective and comfortable evaluation and treatment of geriatric patients, while minimizing iatrogenic complications. The physical plant of a Geriatric ED should focus on structural modifications that promote improvements in safety, comfort, mobility, memory cues, and sensorial perception both with vision and hearing for elders in the ED. Common key features are those that enhance lighting, colors, enhanced signage – all of these are better, not only for older adults, but for everyone. Although a separate space within an ED, or a separate ED entirely, devoted to geriatrics may be beneficial, most hospitals will be more capable of effectively implementing a program in which any ED bed can be made "geriatric friendly" with the presence of the equipment and supplies listed.

The list below is a suggested starting point for the design and equipping of a Geriatric ED.[7,11,80]

- Furniture improvements:
  - Exam chairs/reclining chairs – may be more comfortable for some geriatric patients and facilitate transfer processes.[81]
  - Furniture should be selected with sturdy armrests and ED beds at levels that allow patients to rise more easily for safe transferring. Furniture should be selected using the Evidence-Based Design Checklist. Some studies show that patients often fall when trying to get out of bed unsupervised or unassisted. They also show that bedrails do not reduce the amount of falls and may increase the severity of the fall.
  - Extra thick/soft gurney mattress – decreases possible development of skin break down and decubitus ulcer formation.[82]
  - Choice of upholstery should be soft and moisture proof to protect the fragile skin of older patients. Should also be selected to reduce surface contamination linked to health care associated infections. "Surfaces are easily cleaned, with no surface joints or seams," "materials for upholstery are impervious," "surfaces are nonporous and smooth." This should hold true especially in the ED where there is a high turnover with a large variety of diseases potentially present.
  - Economic evidence supports early prevention of pressure ulcers in ED patients by the use of pressure-redistributing foam mattresses.[83] Another alternative that has been shown to reduce pain and improve patient satisfaction is the use of reclining chairs in the ED instead of ED gurney beds.[81]
- Special equipment
  - Body warming devices/warm blankets
  - Fluid warmer
  - Non-slip fall mats[84]
  - Bedside commodes – where necessary to minimize fall risk
  - Walking aids/devices[85]
  - Hearing aids[86]
  - Monitoring equipment
  - Respiratory equipment to include a fiberoptic intubation device
  - Restraint devices
  - Urinary catheters to include condom catheters – minimize risk of CAUTI
- Visual Orientation improvements:
  - Lighting – soft light is recommended, but exposure to natural light is also shown to be beneficial for recovery times and decreasing delirium

        - Light colored walls with a matte sheen and light flooring with a low-glare finish should be used to optimize lighting and reduce glare. While older adults require three to four times as much light as young adults for visual clarity, light scatter also increases with aging eyes. Simply increasing the level of lighting can improve acuity, and it is recommended that lighting consist of a combination of ambient and spot lighting. In contrast, glare and shine along with difficulty seeing the edges of pale colored objects have been shown to be impediments for older adults in their ability to function and confusing for those with cognitive impairments. Thus, improvements that increase lighting while reducing glare can include shielding of illuminating fixtures above the upper visual field. Fixtures that bounce light off the ceiling or of walls increase overall room lighting while glare can be reduced with the use of matte surfaces. Uniform indirect light.
        - Patients should have control of the lighting in their space if they wish to sleep at a time when the other lights are on, allowing for fewer sleep disturbances.
    - Patterns
        - Contrast sensitivity in aging vision can be both confusing and hinder movement in geriatric patients, especially with reduced depth perception. Patterns that have dominant contrasts may create a sense of vertigo or even seem to vibrate for older adults. Others may misperceive patterns as obstacles or objects (eg, leaf patterns on flooring may be seen as real live leaves to avoid when walking).
    - Colors
        - Secondary to vision and perception changes, color choice for facilities and structure should be considered. Color can be used to enhance visual function and depth perception. Avoid monochromatic color schemes and allow for colors to contrast between horizontal and vertical surfaces. Similar colors look the same for those with poor vision. Older adults experience a decrease in the ability to differentiate cool colors (greens, blues) as opposed to warm colors (yellows, oranges). In poorly lit areas, yellow is the most visible. Orange and reds are attention grabbing. Blues appear hazy and indistinct and may appear gray due to yellowing of the lens.
- Acoustic Orientation Improvements – private rooms or acoustically enhanced drapes, if necessary, for better communication and decrease levels of anxiety and delirium
    - An enhanced acoustical environment may facilitate communication between patients and staff and between staff. While older adults may have decreased ability to hear certain words secondary to a loss of hearing in high-frequency ranges, they also have increased sensitivity to loud sounds. The use of sound-absorbing materials (eg, carpet, curtains, ceiling tiles) may reduce background noise and can also increase patient privacy. The use of portable hearing assist devices for patients may also enhance communication. Loud noise sources in the hospital should be reduced (eg, overhead paging, machines). There is an increase in the amount of studies showing how music can decrease anxiety, heart rate and blood pressure.[87, 88] Patients could be provided with a way to listen to music and choose their programming without disturbing others.
    - An enhanced acoustical environment can also increase patient privacy and safety. One study performed in an ED found that "percent of the patients in curtained spaces reported they withheld portions of their medical history and refused parts of their physical examination because of lack of privacy. None of the patients in rooms with walls reported withholding information."
- Enhanced signage – enhance communication
- Miscellaneous safety enhancements
    - Doors should be fitted with handles (not round knobs) for ease of use

Hospitals are expected to utilize their existing resources to meet the needs of this population. With minimal additional expense for equipment suggested above, geriatric care can be optimized.

# POLICIES, PROCEDURES AND PROTOCOLS

The policies, procedures, and protocols listed are recommended as a comprehensive, directed, although not exhaustive, approach to many of the challenges involved in the care of geriatric patients in the ED. Emergency departments are encouraged to use, change, or integrate their local policies, procedures, and protocols whenever possible. These policies should be available to be referenced by staff and should be followed as part of the routine care of patients.

- Triage and initial evaluation
  - Family/care provider presence/participation in the triage process is highly encouraged
- Initial screening tool to recognize and evaluate at-risk seniors *
- Patient safety
- Suspected elder/dependent adult abuse and neglect
- Sedation/analgesia in the geriatric patient
- Assessment and evaluation of delirium/agitation *
  - Restraint policies
- DNR/POLST/palliative care
- Patient Death
  - Inclusion of the grieving family in the "code" situation is encouraged
- Urinary catheter placement guidelines *
- Fall risk assessment and clinical guideline for the evaluation of the "geriatric adult fall" *
- Wound assessment and care
- Transition of Care and Follow-up
- Medication reconciliation and pharmacy review *

*Denotes sample policies and procedures included in the next section

## Sample Policy and Procedures

### The Screening of Geriatric Patients for Risk of Added Needs Assessment, Consultation and Intervention

*Background:* The geriatric population presenting to the ED is a heterogeneous patient population. Although many patients in this population are functional, independent, and generally in good health, it has been shown that a visit to the ED, even for a relatively minor issue, may be a "red flag" event heralding functional decline and the potential need for added health resources. Other patients in this population are frailer. In general, these patients will require longer ED and hospital lengths-of-stay and consume more health care resources than their younger cohorts. Screening of this population in the ED may allow an opportunity to intervene in those patients who require added resources to help improve outcomes.

Previously published studies on the use of prognostic screening tools in this patient population have mixed results.[89-93] What seems to be clear though is that a team driven, simple to use screening tool can be powerful in helping act to prevent poor outcomes and improve the ED and hospital experience for the geriatric patient.[94-96]

Goals of an effective screening program include the prevention or limitation of delirium, prevention of functional decline, prevention of iatrogenic injury including adverse drug events and falls, as well as a

more effective transition of care through the care cycle from outpatient to ED to inpatient and back again to outpatient.

*Policy:* It is the policy of the Geriatric ED to screen all geriatric patients for high-risk features. Those patients screened to be at risk will be referred to health care resources, both inpatient and outpatient, to help improve overall health and functional outcomes.

## *Recommended Resources:*

- Nurse screening tool
- Resource list including, but not limited to:
  - Physical therapy
  - Occupational therapy
  - Home health providers
  - Case managers
- Outpatient follow up resources

## *Procedure:*

- All geriatric patients, regardless of the presenting complaint shall be screened (on the initial index visit, not follow up visits) using the "Identification of Seniors at Risk Tool"[89] or a similar risk screening tool.[97, 98] This is a simple, quick screening tool that should be completed by the treating nurse as part of the initial evaluation. Answers to the screening questions can be provided by the patient, family, care providers, or others involved in the patient's assessment and care.

  **Identification of Seniors At-Risk Tool**

  - Before the injury or illness, did you need someone to help you on a regular basis?
  - Since the injury or illness, have you needed more help than usual?
  - Have you been hospitalized for one or more nights in the past six months?
  - In general, do you see well?
  - In general, do you have serious problems with your memory?
  - Do you take more than 3 medications daily?

  ***>1 positive response is considered high-risk***

- The treating physician will review the results of the initial screening during the index visit.
- Any patient noted to be at-risk (on the ISAR that means one or more positive responses on the initial screening tool) will be provided with appropriate resources focused to the individual needs.
- All patients noted to be at-risk requiring admission to the hospital will be referred to case management upon admission with the risk assessment results communicated.
- All patients noted to be at-risk that are to be treated as an outpatient will be followed up the following day. Although phone consultation may be adequate, in-person evaluations either in the ED, by the primary physician, or by an RN or mid-level provider is preferable.
- Specific at-risk features will be addressed during the index visit in the ED. Recommendations and referrals will be documented as part of the "Medical Decision Making" and will be addressed along with the case-specific discharge instructions.

*Performance Improvement:* The screening of geriatric patients for general at-risk features will require ongoing education and reinforcement for physician, mid-level, and nursing providers. It is recommended that compliance of the completion of the initial assessment be assessed on a regular basis.

## Guidelines for the Use of Urinary Catheters in the Geriatric Population

Background: Health care-associated and hospital acquired infections are increasing occurrences and pose a significant risk of morbidity and mortality to affected patients. Between 1990 and 2002 hospital admissions for urinary tract infections soared to 16% of all hospital admissions. Urinary tract infections associated with urinary tract catheter insertion account for the highest percentage (80%) of hospital and health care associated infections and approximately 1 in 5 patients being admitted to the hospital receive an indwelling catheter at some point.[99-104] The risk of urinary tract infection from an indwelling catheter increase about 5% per day and a small portion of these patients develop bacteremia and sepsis as a result of indwelling urinary tract catheters with a significant increase in health expenditures and length of stay.[100, 103, 104] Several studies suggest that many of these urinary tract catheters are inappropriately placed and needlessly expose patients to the inherent risk of catheter placement without benefit.[105-107] The Centers for Medicare and Medicaid Services (CMS) has identified these health care-associated infections as preventable and have recommended that hospitals take measures to minimize the catheter related infections.[103] Several groups have identified specific measures aimed at decreasing the incidence of CAUTIs.[101, 102, 104] Yet, despite these proven efforts, national hospital compliance with preventative measures is lacking and lacks uniformity.[108, 109] Of primary importance is the screening and appropriate identification of patients for indwelling catheter placement, proper technique, educating staff and process improvement measures such as infection rate auditing and limited duration of use (references). As an integral part of the health care system the ED recognizes the importance of selecting appropriate patients for catheter insertion.

*Purpose*: The purpose of this policy and procedure is meant to provide a guideline on indications for the appropriate use of indwelling catheter and does not replace the clinical judgment of the physician.

*Procedure:* Insertion of urinary catheters (See Figure 3):

- The patient must have an indication for use of an indwelling catheter and a physician order in the chart. According to the Infectious Disease Society of America and other expert opinion, these indications are as follows:[102, 104, 110, 111]
  - Urinary retention/obstruction
  - Very close monitoring of urine output and patient unable to use urinal or bedpan
  - Open wound in sacral or perineal area with urinary incontinence
  - Patient too ill, fatigued or incapacitated to use alternative urine collection method
  - Patient s/p recent surgery
  - Management of urinary incontinence on patient's request
  - Other – needs specification and clarification documented

Other acceptable indications also include

- Neurogenic bladder
- Emergent pelvic ultrasound
- Emergent surgery
- Altered mental status or unresponsive
- Urologic procedures
- Hip fracture
- Hospice or palliative care

After receiving a physician order with the appropriate indications documented, nursing will insert the indwelling catheter as per protocol, using sterile technique.

Discontinuation of urinary catheters:

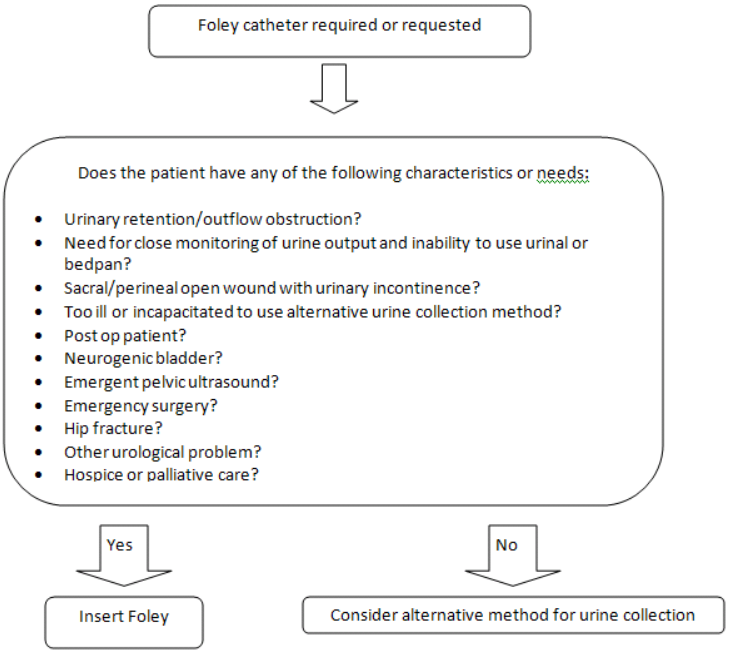
- Indwelling catheters will be removed as soon as feasibly possible. Evidence shows that catheter associated bacteriuria increases and is directly associated with catheter days. Accordingly, daily catheter rounds should prompt for continued use or removal of indwelling catheters .[104, 109]

*Process improvement:*

As part of ongoing efforts to improve use of indwelling catheters in appropriate patients, periodic audits will be performed to check for the following:

- Is a physician order for an indwelling urinary catheter present?
- Was the procedure documented including time and date?
- Was sterile technique used?
- What is the rate of CAUTI?

**Figure 3. Foley Catheter Insertion Algorithm**




## Geriatric Medication Management

*Background:* Geriatric patients are at high-risk for adverse events related to medication.[4, 26, 112, 113] The aging population tends to take more medications, have more co-morbidities, and have differing responses to medications when compared to their younger cohorts.[114] Furthermore, the "normal" aging physiology often leads to changes in metabolism with medications as well as problematic responses to "normal" medication dosing.

Polypharmacy in this population is especially problematic.[113, 115] Population studies have indicated that 40% of patients greater than 65 years of age take 5-9 medications daily, and 18% take more than 10. If you consider there is a 50-60% chance of a drug-drug interaction when taking 5 medications and a 90% chance of a drug-drug interaction when taking 10 or more medications, the burden of medications on the evaluation and care of the geriatric population seems clear.

Overall, adverse medication events not only represent a major cause of ED visits and hospital admissions, they can also lead to increased patient morbidity and mortality, increased resource utilization and increased overall ED and hospital length-of-stay.[115-118]

Current "medication reconciliation" procedures are a good start towards addressing this issue, but do not go far enough in the management of medications in the geriatric population. Implementation of a concise, goal-oriented, team approach to medication management beginning in the ED can potentially increase awareness of adverse drug events as presenting diagnoses, minimize the use of high-risk medications in the geriatric adult, minimize the use of medications with potential interactions, and positively influence the ED care, hospitalization, and subsequent outpatient care of these patients.

*Policy:* It is the policy of the Geriatric ED to address the use of medications in the geriatric population presenting to the ED. A medication list will be obtained and completed as accurately as possible, taking advantage of patients, caretakers, and medical record resources. Patients taking more than 5 medications, any high-risk medications, or presenting with signs or symptoms of adverse drug events will be managed with a multi-disciplinary approach focused on improving patient outcomes.

## *Required Resources:*

- Established medication "reconciliation" tool
  - Computer-based resources can be effective for obtaining accurate medication lists when patients or care takers are not able to provide them.
- Pharmacy leadership/involvement
  - Maintenance of high-risk medication list
- A multi-disciplinary team, including geriatric specialists, pharmacists, etc. is recommended.

## *Procedure:*

- All geriatric patients presenting to the ED, regardless of presenting complaint, will have a medication list completed.
  - Accuracy is often difficult in the ED scenario. Involving the patient, care providers, and family in this procedure is critical.
  - Computer resources should be developed and utilized whenever possible to maintain accurate medication lists for patients representing to the ED or hospital.
- The completed medication list will be made available to the attending ED physician and treating nurse as soon as possible.
- The medication list will be screened by both the nurse and attending physician for:
  - Polypharmacy >5 medications
  - Presence of any high-risk medications
    - Hospital pharmacies should develop and maintain a list of high-risk medications. Using "Beers criteria" or other established lists is recommended. Although these lists should be hospital specific, they should at least include:
      - Anti-coagulants and anti-platelet medications
      - Anti-hyperglycemics
      - Cardiac medications including digoxin, amiodarone, B-Blockers, Ca channel blockers
      - Diuretics
      - Narcotics
      - Anti-psychotics and other psychiatric medications
      - Immunosuppressant medications, including chemotherapy agents

- Patients requiring hospital admission that are noted to have either polypharmacy concerns or the presence of any high-risk medications will be referred to a multi-disciplinary team to include a pharmacist.
  - The multi-disciplinary team will interact with the attending physician with goals of minimizing drug-drug interactions, minimizing polypharmacy and high-risk medications during hospitalization and upon discharge.
- Patients discharged from the ED that are noted to have either polypharmacy concerns or the presence of any high-risk medications will be referred to their primary physician for review of their medications as appropriate for their clinical situation.

### *Performance Improvement:*

- High-risk medication lists will be reviewed annually.
- Consider reviewing the use of a high-risk medication annually. For example, the use of diphenhydramine in the geriatric adult can be reviewed with a goal of limiting its use in the geriatric population.
- Tracking and trending of adverse drug response admissions
- Tracking and trending of pharmacist interventions for admitted patients noted with either polypharmacy or high-risk medications.

# American Geriatrics Society Beers Criteria 2012

**Source: http://tinyurl.com/BeersMeds2012**

## AGS BEERS CRITERIA
### FOR POTENTIALLY INAPPROPRIATE MEDICATION USE IN OLDER ADULTS
### FROM THE AMERICAN GERIATRICS SOCIETY

This clinical tool, based on *The AGS 2012 Updated Beers Criteria for Potentially Inappropriate Medication Use in Older Adults (AGS 2012 Beers Criteria)*, has been developed to assist healthcare providers in improving medication safety in older adults. Our purpose is to inform clinical decision-making concerning the prescribing of medications for older adults in order to improve safety and quality of care.

Originally conceived of in 1991 by the late Mark Beers, MD, a geriatrician, the *Beers Criteria* catalogues medications that cause adverse drug events in older adults due to their pharmacologic properties and the physiologic changes of aging. In 2011, the AGS undertook an update of the criteria, assembling a team of experts and funding the development of the *AGS 2012 Beers Criteria* using an enhanced, evidence-based methodology. Each criterion is rated (quality of evidence and strength of evidence) using the American College of Physicians' Guideline Grading System, which is based on the GRADE scheme developed by Guyatt et al.

The full document together with accompanying resources can be viewed online at www.americangeriatrics.org.

#### INTENDED USE

The goal of this clinical tool is to improve care of older adults by reducing their exposure to Potentially Inappropriate Medications (PIMs).

- This should be viewed as a guide for identifying medications for which the risks of use in older adults outweigh the benefits.
- These criteria are not meant to be applied in a punitive manner.
- This list is not meant to supersede clinical judgment or an individual patient's values and needs. Prescribing and managing disease conditions should be individualized and involve shared decision-making.
- These criteria also underscore the importance of using a team approach to prescribing and the use of non-pharmacological approaches and of having economic and organizational incentives for this type of model.
- Implicit criteria such as the STOPP/START criteria and Medication Appropriateness Index should be used in a complementary manner with the *2012 AGS Beers Criteria* to guide clinicians in making decisions about safe medication use in older adults.

The criteria are not applicable in all circumstances (eg, patient's receiving palliative and hospice care). If a clinician is not able to find an alternative and chooses to continue to use a drug on this list in an individual patient, designation of the medication as potentially inappropriate can serve as a reminder for close monitoring so that the potential for an adverse drug effect can be incorporated into the medical record and prevented or detected early.

**TABLE 1: 2012 AGS Beers Criteria for Potentially Inappropriate Medication Use in Older Adults**

| Organ System/ Therapeutic Category/Drug(s) | Recommendation, Rationale, *Quality of Evidence (QE) & Strength of Recommendation (SR)* |
|---|---|
| *Anticholinergics (excludes TCAs)* | |
| First-generation antihistamines (as single agent or as part of combination products)<br>■ Brompheniramine<br>■ Carbinoxamine<br>■ Chlorpheniramine<br>■ Clemastine<br>■ Cyproheptadine<br>■ Dexbrompheniramine<br>■ Dexchlorpheniramine<br>■ Diphenhydramine (oral)<br>■ Doxylamine<br>■ Hydroxyzine<br>■ Promethazine<br>■ Triprolidine | **Avoid.**<br>Highly anticholinergic; clearance reduced with advanced age, and tolerance develops when used as hypnotic; increased risk of confusion, dry mouth, constipation, and other anticholinergic effects/ toxicity.<br>Use of diphenhydramine in special situations such as acute treatment of severe allergic reaction may be appropriate.<br>*QE = High (Hydroxyzine and Promethazine), Moderate (All others); SR = Strong* |
| Antiparkinson agents<br>■ Benztropine (oral)<br>■ Trihexyphenidyl | **Avoid.**<br>Not recommended for prevention of extrapyramidal symptoms with antipsychotics; more effective agents available for treatment of Parkinson disease.<br>*QE = Moderate; SR = Strong* |

*Table 1 (continued from page 1)*

**TABLE 1: 2012 AGS Beers Criteria for Potentially Inappropriate Medication Use in Older Adults**

| Organ System/ Therapeutic Category/Drug(s) | Recommendation, Rationale, *Quality of Evidence (QE) & Strength of Recommendation (SR)* |
|---|---|
| Antispasmodics<br>■ Belladonna alkaloids<br>■ Clidinium-chlordiazepoxide<br>■ Dicyclomine<br>■ Hyoscyamine<br>■ Propantheline<br>■ Scopolamine | **Avoid except in short-term palliative care to decrease oral secretions.**<br>Highly anticholinergic, uncertain effectiveness.<br>*QE = Moderate; SR = Strong* |
| *Antithrombotics* | |
| Dipyridamole, oral short-acting* *(does not apply to the extended-release combination with aspirin)* | **Avoid.**<br>May cause orthostatic hypotension; more effective alternatives available; IV form acceptable for use in cardiac stress testing.<br>*QE = Moderate; SR = Strong* |
| Ticlopidine* | **Avoid.**<br>Safer, effective alternatives available.<br>*QE = Moderate; SR = Strong* |
| *Anti-infective* | |
| Nitrofurantoin | **Avoid for long-term suppression; avoid in patients with CrCl <60 mL/min.**<br>Potential for pulmonary toxicity; safer alternatives available; lack of efficacy in patients with CrCl <60 mL/min due to inadequate drug concentration in the urine.<br>*QE = Moderate; SR = Strong* |
| *Cardiovascular* | |
| Alpha$_1$ blockers<br>■ Doxazosin<br>■ Prazosin<br>■ Terazosin | **Avoid use as an antihypertensive.**<br>High risk of orthostatic hypotension; not recommended as routine treatment for hypertension; alternative agents have superior risk/ benefit profile.<br>*QE = Moderate; SR = Strong* |
| Alpha agonists<br>■ Clonidine<br>■ Guanabenz*<br>■ Guanfacine*<br>■ Methyldopa*<br>■ Reserpine (>0.1 mg/day)* | **Avoid clonidine as a first-line antihypertensive. Avoid others as listed.**<br>High risk of adverse CNS effects; may cause bradycardia and orthostatic hypotension; not recommended as routine treatment for hypertension.<br>*QE = Low; SR = Strong* |
| Antiarrhythmic drugs (Class Ia, Ic, III)<br>■ Amiodarone<br>■ Dofetilide<br>■ Dronedarone<br>■ Flecainide<br>■ Ibutilide<br>■ Procainamide<br>■ Propafenone<br>■ Quinidine<br>■ Sotalol | **Avoid antiarrhythmic drugs as first-line treatment of atrial fibrillation.**<br>Data suggest that rate control yields better balance of benefits and harms than rhythm control for most older adults.<br>Amiodarone is associated with multiple toxicities, including thyroid disease, pulmonary disorders, and QT interval prolongation.<br>*QE = High; SR = Strong* |
| Disopyramide* | **Avoid.**<br>Disopyramide is a potent negative inotrope and therefore may induce heart failure in older adults; strongly anticholinergic; other antiarrhythmic drugs preferred.<br>*QE = Low; SR = Strong* |
| Dronedarone | **Avoid in patients with permanent atrial fibrillation or heart failure.**<br>Worse outcomes have been reported in patients taking dronedarone who have permanent atrial fibrillation or heart failure. In general, rate control is preferred over rhythm control for atrial fibrillation.<br>*QE = Moderate; SR = Strong* |
| Digoxin >0.125 mg/day | **Avoid.**<br>In heart failure, higher dosages associated with no additional benefit and may increase risk of toxicity; decreased renal clearance may increase risk of toxicity.<br>*QE = Moderate; SR = Strong* |

# American Geriatrics Society Beers Criteria 2012 (continued)

*Table 1 (continued from page 2)*

**TABLE 1: 2012 AGS Beers Criteria for Potentially Inappropriate Medication Use in Older Adults**

| Organ System/ Therapeutic Category/Drug(s) | Recommendation, Rationale, *Quality of Evidence (QE) & Strength of Recommendation (SR)* |
|---|---|
| Nifedipine, immediate release* | **Avoid.**<br>Potential for hypotension; risk of precipitating myocardial ischemia.<br>*QE = High; SR = Strong* |
| Spironolactone >25 mg/day | **Avoid in patients with heart failure or with a CrCl <30 mL/min.**<br>In heart failure, the risk of hyperkalemia is higher in older adults if taking >25 mg/day.<br>*QE = Moderate; SR = Strong* |
| *Central Nervous System* | |
| Tertiary TCAs, alone or in combination:<br>■ Amitriptyline<br>■ Chlordiazepoxide-amitriptyline<br>■ Clomipramine<br>■ Doxepin >6 mg/day<br>■ Imipramine<br>■ Perphenazine-amitriptyline<br>■ Trimipramine | **Avoid.**<br>Highly anticholinergic, sedating, and cause orthostatic hypotension; the safety profile of low-dose doxepin (≤6 mg/day) is comparable to that of placebo.<br>*QE = High; SR = Strong* |
| Antipsychotics, first- (conventional) and second- (atypical) generation *(see online for full list)* | **Avoid use for behavioral problems of dementia unless non-pharmacologic options have failed and patient is threat to self or others.**<br>Increased risk of cerebrovascular accident (stroke) and mortality in persons with dementia.<br>*QE = Moderate; SR = Strong* |
| Thioridazine<br>Mesoridazine | **Avoid.**<br>Highly anticholinergic and greater risk of QT-interval prolongation.<br>*QE = Moderate; SR = Strong* |
| Barbiturates<br>■ Amobarbital*<br>■ Butabarbital*<br>■ Butalbital<br>■ Mephobarbital*<br>■ Pentobarbital*<br>■ Phenobarbital<br>■ Secobarbital* | **Avoid.**<br>High rate of physical dependence; tolerance to sleep benefits; greater risk of overdose at low dosages.<br>*QE = High; SR = Strong* |
| Benzodiazepines<br>*Short- and intermediate-acting:*<br>■ Alprazolam<br>■ Estazolam<br>■ Lorazepam<br>■ Oxazepam<br>■ Temazepam<br>■ Triazolam<br>*Long-acting:*<br>■ Chlorazepate<br>■ Chlordiazepoxide<br>■ Chlordiazepoxide-amitriptyline<br>■ Clidinium-chlordiazepoxide<br>■ Clonazepam<br>■ Diazepam<br>■ Flurazepam<br>■ Quazepam | **Avoid benzodiazepines (any type) for treatment of insomnia, agitation, or delirium.**<br>Older adults have increased sensitivity to benzodiazepines and decreased metabolism of long-acting agents. In general, all benzodiazepines increase risk of cognitive impairment, delirium, falls, fractures, and motor vehicle accidents in older adults.<br>May be appropriate for seizure disorders, rapid eye movement sleep disorders, benzodiazepine withdrawal, ethanol withdrawal, severe generalized anxiety disorder, periprocedural anesthesia, end-of-life care.<br>*QE = High; SR = Strong* |
| Chloral hydrate* | **Avoid.**<br>Tolerance occurs within 10 days and risk outweighs the benefits in light of overdose with doses only 3 times the recommended dose.<br>*QE = Low; SR = Strong* |
| Meprobamate | **Avoid.**<br>High rate of physical dependence; very sedating.<br>*QE = Moderate; SR = Strong* |

*Table 1 (continued from page 3)*

**TABLE 1: 2012 AGS Beers Criteria for Potentially Inappropriate Medication Use in Older Adults**

| Organ System/ Therapeutic Category/Drug(s) | Recommendation, Rationale, *Quality of Evidence (QE) & Strength of Recommendation (SR)* |
|---|---|
| Nonbenzodiazepine hypnotics<br>■ Eszopiclone<br>■ Zolpidem<br>■ Zaleplon | **Avoid chronic use (>90 days)**<br>Benzodiazepine-receptor agonists that have adverse events similar to those of benzodiazepines in older adults (e.g., delirium, falls, fractures); minimal improvement in sleep latency and duration.<br>*QE = Moderate; SR = Strong* |
| Ergot mesylates*<br>Isoxsuprine* | **Avoid.**<br>Lack of efficacy.<br>*QE = High; SR = Strong* |
| *Endocrine* | |
| Androgens<br>■ Methyltestosterone*<br>■ Testosterone | **Avoid unless indicated for moderate to severe hypogonadism.**<br>Potential for cardiac problems and contraindicated in men with prostate cancer.<br>*QE = Moderate; SR = Weak* |
| Desiccated thyroid | **Avoid.**<br>Concerns about cardiac effects; safer alternatives available.<br>*QE = Low; SR = Strong* |
| Estrogens with or without progestins | **Avoid oral and topical patch. Topical vaginal cream: Acceptable to use low-dose intravaginal estrogen for the management of dyspareunia, lower urinary tract infections, and other vaginal symptoms.**<br>Evidence of carcinogenic potential (breast and endometrium); lack of cardioprotective effect and cognitive protection in older women. Evidence that vaginal estrogens for treatment of vaginal dryness is safe and effective in women with breast cancer, especially at dosages of estradiol <25 mcg twice weekly.<br>*QE = High (Oral and Patch), Moderate (Topical); SR = Strong (Oral and Patch), Weak (Topical)* |
| Growth hormone | **Avoid, except as hormone replacement following pituitary gland removal.**<br>Effect on body composition is small and associated with edema, arthralgia, carpal tunnel syndrome, gynecomastia, impaired fasting glucose.<br>*QE = High; SR = Strong* |
| Insulin, sliding scale | **Avoid.**<br>Higher risk of hypoglycemia without improvement in hyperglycemia management regardless of care setting.<br>*QE = Moderate; SR = Strong* |
| Megestrol | **Avoid.**<br>Minimal effect on weight; increases risk of thrombotic events and possibly death in older adults.<br>*QE = Moderate; SR = Strong* |
| Sulfonylureas, long-duration<br>■ Chlorpropamide<br>■ Glyburide | **Avoid.**<br>Chlorpropamide: prolonged half-life in older adults; can cause prolonged hypoglycemia; causes SIADH<br>Glyburide: higher risk of severe prolonged hypoglycemia in older adults.<br>*QE = High; SR = Strong* |
| *Gastrointestinal* | |
| Metoclopramide | **Avoid, unless for gastroparesis.**<br>Can cause extrapyramidal effects including tardive dyskinesia; risk may be further increased in frail older adults.<br>*QE = Moderate; SR = Strong* |
| Mineral oil, given orally | **Avoid.**<br>Potential for aspiration and adverse effects; safer alternatives available.<br>*QE = Moderate; SR = Strong* |
| Trimethobenzamide | **Avoid.**<br>One of the least effective antiemetic drugs; can cause extrapyramidal adverse effects.<br>*QE = Moderate; SR = Strong* |

# American Geriatrics Society Beers Criteria 2012 (continued)

*Table 1 (continued from page 4)*

**TABLE 1:** 2012 AGS Beers Criteria for Potentially Inappropriate Medication Use in Older Adults

| Organ System/ Therapeutic Category/Drug(s) | Recommendation, Rationale, *Quality of Evidence (QE) & Strength of Recommendation (SR)* |
|---|---|
| *Pain Medications* | |
| Meperidine | **Avoid.** Not an effective oral analgesic in dosages commonly used; may cause neurotoxicity; safer alternatives available. *QE = High; SR = Strong* |
| Non-COX-selective NSAIDs, oral<br>■ Aspirin >325 mg/day<br>■ Diclofenac<br>■ Diflunisal<br>■ Etodolac<br>■ Fenoprofen<br>■ Ibuprofen<br>■ Ketoprofen<br>■ Meclofenamate<br>■ Mefenamic acid<br>■ Meloxicam<br>■ Nabumetone<br>■ Naproxen<br>■ Oxaprozin<br>■ Piroxicam<br>■ Sulindac<br>■ Tolmetin | **Avoid chronic use unless other alternatives are not effective and patient can take gastroprotective agent (proton-pump inhibitor or misoprostol).** Increases risk of GI bleeding/peptic ulcer disease in high-risk groups, including those ≥75 years old or taking oral or parenteral corticosteroids, anticoagulants, or antiplatelet agents. Use of proton pump inhibitor or misoprostol reduces but does not eliminate risk. Upper GI ulcers, gross bleeding, or perforation caused by NSAIDs occur in approximately 1% of patients treated for 3–6 months, and in about 2%–4% of patients treated for 1 year. These trends continue with longer duration of use. *QE = Moderate; SR = Strong* |
| Indomethacin<br>Ketorolac, includes parenteral | **Avoid.** Increases risk of GI bleeding/peptic ulcer disease in high-risk groups *(See Non-COX selective NSAIDs)* Of all the NSAIDs, indomethacin has most adverse effects. *QE = Moderate (Indomethacin), High (Ketorolac); SR = Strong* |
| Pentazocine* | **Avoid.** Opioid analgesic that causes CNS adverse effects, including confusion and hallucinations, more commonly than other narcotic drugs; is also a mixed agonist and antagonist; safer alternatives available. *QE = Low; SR = Strong* |
| Skeletal muscle relaxants<br>■ Carisoprodol<br>■ Chlorzoxazone<br>■ Cyclobenzaprine<br>■ Metaxalone<br>■ Methocarbamol<br>■ Orphenadrine | **Avoid.** Most muscle relaxants poorly tolerated by older adults, because of anticholinergic adverse effects, sedation, increased risk of fractures; effectiveness at dosages tolerated by older adults is questionable. *QE = Moderate; SR = Strong* |

*Infrequently used drugs. Table 1 Abbreviations: ACEI, angiotensin converting-enzyme inhibitors; ARB, angiotensin receptor blockers; CNS, central nervous system; COX, cyclooxygenase; CrCl, creatinine clearance; GI, gastrointestinal; NSAIDs, nonsteroidal anti-inflammatory drugs; SIADH, syndrome of inappropriate antidiuretic hormone secretion; SR, Strength of Recommendation; TCAs, tricyclic antidepressants; QE, Quality of Evidence

**TABLE 2:** 2012 AGS Beers Criteria for Potentially Inappropriate Medication Use in Older Adults Due to Drug-Disease or Drug-Syndrome Interactions That May Exacerbate the Disease or Syndrome

| Disease or Syndrome | Drug(s) | Recommendation, Rationale, *Quality of Evidence (QE) & Strength of Recommendation (SR)* |
|---|---|---|
| *Cardiovascular* | | |
| Heart failure | NSAIDs and COX-2 inhibitors<br><br>Nondihydropyridine CCBs (avoid only for systolic heart failure)<br>■ Diltiazem<br>■ Verapamil<br><br>Pioglitazone, rosiglitazone<br><br>Cilostazol<br>Dronedarone | **Avoid.** Potential to promote fluid retention and/or exacerbate heart failure. *QE = Moderate (NSAIDs, CCBs, Dronedarone), High (Thiazolidinediones (glitazones)), Low (Cilostazol); SR = Strong* |

*Table 2 (continued from page 5)*

**TABLE 2:** 2012 AGS Beers Criteria for Potentially Inappropriate Medication Use in Older Adults Due to Drug-Disease or Drug-Syndrome Interactions That May Exacerbate the Disease or Syndrome

| Disease or Syndrome | Drug(s) | Recommendation, Rationale, *Quality of Evidence (QE) & Strength of Recommendation (SR)* |
|---|---|---|
| Syncope | Acetylcholinesterase inhibitors (AChEIs)<br>Peripheral alpha blockers<br>■ Doxazosin<br>■ Prazosin<br>■ Terazosin<br><br>Tertiary TCAs<br><br>Chlorpromazine, thioridazine, and olanzapine | **Avoid.** Increases risk of orthostatic hypotension or bradycardia. *QE = High (Alpha blockers), Moderate (AChEIs, TCAs and antipsychotics); SR = Strong (AChEIs and TCAs), Weak (Alpha blockers and antipsychotics)* |
| *Central Nervous System* | | |
| Chronic seizures or epilepsy | Bupropion<br>Chlorpromazine<br>Clozapine<br>Maprotiline<br>Olanzapine<br>Thioridazine<br>Thiothixene<br>Tramadol | **Avoid.** Lowers seizure threshold; may be acceptable in patients with well-controlled seizures in whom alternative agents have not been effective. *QE = Moderate; SR = Strong* |
| Delirium | All TCAs<br>Anticholinergics *(see online for full list)*<br>Benzodiazepines<br>Chlorpromazine<br>Corticosteroids<br>$H_2$-receptor antagonist<br>Meperidine<br>Sedative hypnotics<br>Thioridazine | **Avoid.** Avoid in older adults with or at high risk of delirium because of inducing or worsening delirium in older adults; if discontinuing drugs used chronically, taper to avoid withdrawal symptoms. *QE = Moderate; SR = Strong* |
| Dementia & cognitive impairment | Anticholinergics *(see online for full list)*<br>Benzodiazepines<br>$H_2$-receptor antagonists<br>Zolpidem<br>Antipsychotics, chronic and as-needed use | **Avoid.** Avoid due to adverse CNS effects. Avoid antipsychotics for behavioral problems of dementia unless non-pharmacologic options have failed and patient is a threat to themselves or others. Antipsychotics are associated with an increased risk of cerebrovascular accident (stroke) and mortality in persons with dementia. *QE = High; SR = Strong* |
| History of falls or fractures | Anticonvulsants<br>Antipsychotics<br>Benzodiazepines<br>Nonbenzodiazepine hypnotics<br>■ Eszopiclone<br>■ Zaleplon<br>■ Zolpidem<br><br>TCAs/SSRIs | **Avoid unless safer alternatives are not available; avoid anticonvulsants except for seizure.** Ability to produce ataxia, impaired psychomotor function, syncope, and additional falls; shorter-acting benzodiazepines are not safer than long-acting ones. *QE = High; SR = Strong* |
| Insomnia | Oral decongestants<br>■ Pseudoephedrine<br>■ Phenylephrine Stimulants<br>■ Amphetamine<br>■ Methylphenidate<br>■ Pemoline Theobromines<br>■ Theophylline<br>■ Caffeine | **Avoid.** CNS stimulant effects. *QE = Moderate; SR = Strong* |
| Parkinson's disease | All antipsychotics (see online publication for full list, except for quetiapine and clozapine)<br><br>Antiemetics<br>■ Metoclopramide<br>■ Prochlorperazine<br>■ Promethazine | **Avoid.** Dopamine receptor antagonists with potential to worsen parkinsonian symptoms. Quetiapine and clozapine appear to be less likely to precipitate worsening of Parkinson disease. *QE = Moderate; SR = Strong* |

# American Geriatrics Society Beers Criteria 2012 (continued)

*Table 2 (continued from page 6)*

**TABLE 2:** 2012 AGS Beers Criteria for Potentially Inappropriate Medication Use in Older Adults Due to Drug-Disease or Drug-Syndrome Interactions That May Exacerbate the Disease or Syndrome

| Disease or Syndrome | Drug(s) | Recommendation, Rationale, *Quality of Evidence (QE) & Strength of Recommendation (SR)* |
|---|---|---|
| *Gastrointestinal* | | |
| Chronic constipation | Oral antimuscarinics for urinary incontinence<br>■ Darifenacin<br>■ Fesoterodine<br>■ Oxybutynin (oral)<br>■ Solifenacin<br>■ Tolterodine<br>■ Trospium<br><br>Nondihydropyridine CCB<br>■ Diltiazem<br>■ Verapamil<br><br>First-generation antihistamines as single agent or part of combination products<br>■ Brompheniramine (various)<br>■ Carbinoxamine<br>■ Chlorpheniramine<br>■ Clemastine (various)<br>■ Cyproheptadine<br>■ Dexbrompheniramine<br>■ Dexchlorpheniramine (various)<br>■ Diphenhydramine<br>■ Doxylamine<br>■ Hydroxyzine<br>■ Promethazine<br>■ Triprolidine<br><br>Anticholinergics/antispasmodics *(see online for full list of drugs with strong anticholinergic properties)*<br>■ Antipsychotics<br>■ Belladonna alkaloids<br>■ Clidinium-chlordiazepoxide<br>■ Dicyclomine<br>■ Hyoscyamine<br>■ Propantheline<br>■ Scopolamine<br>■ Tertiary TCAs (amitriptyline, clomipramine, doxepin, imipramine, and trimipramine) | **Avoid unless no other alternatives.**<br><br>Can worsen constipation; agents for urinary incontinence: antimuscarinics overall differ in incidence of constipation; response variable; consider alternative agent if constipation develops.<br><br>*QE = High (For Urinary Incontinence), Moderate/Low (All Others); SR = Strong* |
| History of gastric or duodenal ulcers | Aspirin (>325 mg/day)<br>Non–COX-2 selective NSAIDs | **Avoid unless other alternatives are not effective and patient can take gastroprotective agent (proton-pump inhibitor or misoprostol).**<br><br>May exacerbate existing ulcers or cause new/additional ulcers.<br>*QE = Moderate; SR = Strong* |
| *Kidney/Urinary Tract* | | |
| Chronic kidney disease stages IV and V | NSAIDs<br><br>Triamterene (alone or in combination) | **Avoid.**<br><br>May increase risk of kidney injury.<br><br>May increase risk of acute kidney injury.<br><br>*QE = Moderate (NSAIDs), Low (Triamterene); SR = Strong (NSAIDs), Weak (Triamterene)* |
| Urinary incontinence (all types) in women | Estrogen oral and transdermal (excludes intravaginal estrogen) | **Avoid in women.**<br><br>Aggravation of incontinence.<br><br>*QE = High; SR = Strong* |

*Table 2 (continued from page 7)*

**TABLE 2:** 2012 AGS Beers Criteria for Potentially Inappropriate Medication Use in Older Adults Due to Drug-Disease or Drug-Syndrome Interactions That May Exacerbate the Disease or Syndrome

| Disease or Syndrome | Drug(s) | Recommendation, Rationale, *Quality of Evidence (QE) & Strength of Recommendation (SR)* |
|---|---|---|
| Lower urinary tract symptoms, benign prostatic hyperplasia | Inhaled anticholinergic agents<br><br>Strongly anticholinergic drugs, except antimuscarinics for urinary incontinence (see Table 9 for complete list). | **Avoid in men.**<br><br>May decrease urinary flow and cause urinary retention.<br><br>*QE = Moderate; SR = Strong (Inhaled agents), Weak (All others)* |
| Stress or mixed urinary incontinence | Alpha-blockers<br>■ Doxazosin<br>■ Prazosin<br>■ Terazosin | **Avoid in women.**<br><br>Aggravation of incontinence.<br><br>*QE = Moderate; SR = Strong* |

Table 2 Abbreviations: CCBs, calcium channel blockers; AChEIs, acetylcholinesterase inhibitors; CNS, central nervous system; COX, cyclooxygenase; NSAIDs, nonsteroidal anti-inflammatory drugs; SR, Strength of Recommendation; SSRIs, selective serotonin reuptake inhibitors; TCAs, tricyclic antidepressants; QE, Quality of Evidence

**TABLE 3:** 2012 AGS Beers Criteria for Potentially Inappropriate Medications to Be Used with Caution in Older Adults

| Drug(s) | Recommendation, Rationale, *Quality of Evidence (QE) & Strength of Recommendation (SR)* |
|---|---|
| Aspirin for primary prevention of cardiac events | **Use with caution in adults ≥80 years old.**<br><br>Lack of evidence of benefit versus risk in individuals ≥80 years old.<br>*QE = Low; SR = Weak* |
| Dabigatran | **Use with caution in adults ≥75 years old or if CrCl <30 mL/min.**<br><br>Increased risk of bleeding compared with warfarin in adults ≥75 years old; lack of evidence for efficacy and safety in patients with CrCl <30 mL/min<br>*QE = Moderate; SR = Weak* |
| Prasugrel | **Use with caution in adults ≥75 years old.**<br><br>Greater risk of bleeding in older adults; risk may be offset by benefit in highest-risk older patients (eg, those with prior myocardial infarction or diabetes).<br>*QE = Moderate; SR = Weak* |
| Antipsychotics<br>Carbamazepine<br>Carboplatin<br>Cisplatin<br>Mirtazapine<br>SNRIs<br>SSRIs<br>TCAs<br>Vincristine | **Use with caution.**<br><br>May exacerbate or cause SIADH or hyponatremia; need to monitor sodium level closely when starting or changing dosages in older adults due to increased risk.<br><br>*QE = Moderate; SR = Strong* |
| Vasodilators | **Use with caution.**<br><br>May exacerbate episodes of syncope in individuals with history of syncope.<br>*QE = Moderate; SR = Weak* |

Table 3 Abbreviations: CrCl, creatinine clearance; SIADH, syndrome of inappropriate antidiuretic hormone secretion; SSRIs, selective serotonin reuptake inhibitors; SNRIs, serotonin–norepinephrine reuptake inhibitors; SR, Strength of Recommendation; TCAs, tricyclic antidepressants; QE, Quality of Evidence

## Geriatric Fall Assessment

*Background:* Trauma is one of the leading causes of death in the geriatric population. Falls, even relatively minor impact falls, often represent a major traumatic mechanism in the geriatric population and can lead to significant morbidity and mortality compared to younger patients. As the population continues to age these falls will continue to increase disproportionately to other age groups. In fact, over a five-year period between 2005 and 2009, fall-related visits to the ED increased approximately 37.5%.[119] These falls are increasingly common, occurring in up to 1/3 of the population over 65 years old and surge to 51% in those older than 85.[120] Furthermore, the financial burden of fall-related injuries and hospitalizations are estimated to be more than 28 billion dollars each year.[120-123]

The appropriate evaluation of a patient who either has fallen or is at high risk of falling involves not only a thorough assessment for traumatic injuries, but an assessment of the cause of the fall and an estimation of future fall risk. This assessment is often a complex and time-consuming evaluation and usually involves a multifaceted and multi-disciplined approach. For those geriatric patients who present to the ED after a fall, traumatic injuries may be "occult," presenting without "classic" signs or symptoms. High-risk injuries such as blunt head trauma, spinal fractures and hip fractures warrant a higher degree of suspicion and extensive workups.[124-127] Furthermore, the cause of the fall is often multifactorial, resulting from a complex combination of causes, described as the "geriatric syndrome."

The goal of the evaluation of a patient who has fallen or is at increased risk of falling is therefore to diagnose and treat traumatic injuries, discover and manage the predisposing causes of the fall, and ultimately to prevent complications of falling and future falls. Unfortunately, predicting future falls in geriatric ED patients is challenging. [128]The ED plays a critical role in initiating appropriate evaluation, disposition, and follow up in order to meet these goals.[129-131] However, in spite of this safety-net position within the health care system, few fall assessments are initiated appropriately from the ED.[132] Studies have shown that having appropriate policies and procedures in place can play a pivotal role in increasing the detection of at-risk seniors and possibly prevent future falls and injuries.[133, 134]

*Policy:* It is the policy of the Geriatric ED to initiate a comprehensive evaluation for geriatric patients presenting after a fall or for those who may be at high risk for a future fall. Patients will be evaluated for injuries, including those injuries that may be "occult" in the geriatric population. Furthermore, patients will be evaluated for causes of and risk factors for falls. Patients will be assessed prior to disposition for safety with the goal to prevent further injury and falls.

*Required Resources:*

- Fall risk assessment tool: Although many hospitals have a comprehensive fall assessment tool for in-patients, these are often not appropriate for implementation in the ED setting.[135, 136] An appropriate tool is a direct, easily implemented tool to screen for risk of falls. Specific policies and procedures should be in place for the assessment and evaluation of patients presenting to the ED with a high risk of fall or those who have suffered a fall. Assessment should include both intrinsic and extrinsic risk factors for falls.
- Radiology imaging protocols focused on the special evaluation of the geriatric population.[137]
- A multi-disciplinary team including PT/OT, social work, nursing, physician and "mid-level" providers (where appropriate) is recommended.
- In order to better facilitate the care of seniors, EDs should make an effort to align their physical and personnel resources with the physical needs of the geriatric patient. Several elements have been suggested as possible interventions for the prevention of fall within the ED.[7]
- Equipment to prevent falls in the ED should include:

  - Rubber or nonskid flood surfaces/mats
  - Even floor surfaces
  - Handrails on walls and hallways
  - Aisle lighting
  - Bedside commodes and grab bars in restrooms
  - Bedrails properly positioned and functioning
  - Patient gown and hospital clothing that minimize fall risk (long, baggy, loose tie strings, etc)
- Expedited outpatient follow-up for those patients discharged from the ED/hospital to include home safety assessments is recommended.
- Walkers and other gait assistance devices should be available for patients on discharge.

*Procedure:* All geriatric patients presenting after a fall will be assessed by the attending physician. Although the cause of the fall may be straightforward, a thoughtful assessment begins by answering the question "if this patient was a healthy 20-year-old, would he/she have fallen?" If the answer is "no," then an assessment of the underlying cause of the fall should be more comprehensive and should include:

- History is the most critical component of the evaluation of a patient with or at risk for a fall. Several studies and authorities have suggested that there are several key elements to an appropriate history in the patients with a fall.[121, 138-144] These key historical elements are as follows:
  - Age greater than 65
  - Location and cause of fall
  - Difficulty with gait and/or balance
  - Falls in the previous (XX time)
  - Time spent on floor or ground
  - Loss of Consciousness/AMS
  - Near/syncope/orthostasis
  - Melena
  - Specific comorbidities such as dementia, Parkinson's, stroke, diabetes, hip fracture and depression
  - Visual or neurological impairments such peripheral neuropathies
  - Alcohol use
  - Medications
  - Activities of daily living
  - Appropriate foot wear
- Medication assessment should be performed on all patients at risk or who have suffered from a fall. Special attention should be to those patients currently taking any of the following classes of medications: vasodilators, diuretics, antipsychotics sedative/hypnotics, and other high-risk medications.[114]
- Orthostatic blood pressure assessment
- Neurologic assessment with special attention to presence/absence of neuropathies and proximal motor strength
- Although there is no recommended set of diagnostic tests for the cause of a fall, a threshold should be maintained for obtaining an EKG, complete blood count, standard electrolyte panel, measurable medication levels and appropriate imaging.
- Evaluation of the patient for injury should include a complete head to toe evaluation for ALL patients, including those presenting with seemingly isolated injuries.
- Safety assessment prior to discharge should include an evaluation of gait, and a "get up and go test" (reference). Patients not able to rise from the bed, turn, and steadily ambulate out of the ED should be reassessed. Admission should be considered if patient safety cannot be assured.
- All patients admitted to the hospital after a fall will be evaluated by PT/OT.

*Performance Improvement:*
Home assessments for safety for all patients evaluated for a fall.[145, 146]

## Delirium and Dementia in the Geriatric Emergency Department

*Background:* Delirium and agitation are among the most common problems in the geriatric adult, occurring in approximately 25% of hospitalized geriatric patients.[147, 148] Consequences of delirium include increased mortality, morbidity, extended hospital length-of-stay, increased need for restraints and/or added staffing (sitters), and increased potential for lasting functional decline and subsequent need for nursing home placement.[149, 150]

The ED is challenged with providing a comprehensive, thoughtful evaluation of patients presenting with delirium.[51, 151-153] One issue is that dementia and mild cognitive impairment are common in geriatric ED patients and often undetected.[52, 152, 154] Routine cognitive screening and documentation provides a formal assessment of mental status at the index ED evaluation, but also provides a baseline for future ED visits. Several dementia screening instruments have been validated in ED settings.[155] When done well, this assessment can lead to directed interventions that can positively affect the duration of the patient's hospitalization. The features that distinguish dementia and delirium are presented in the Table. Often the cause of a delirium is multifactorial, including acute medical illness overlying baseline cognitive dysfunction, medication effects and interactions, and decompensating co- morbidities. An appropriate evaluation and management of each of these factors is critical to a positive outcome.[156]

Another challenge for the ED is the effective management of agitated geriatric patients. Medications and restraints (both chemical and physical) are critical interventions that, when used well, can improve patient health and safety, but when used inappropriately can actually increase the severity or length of a delirium. Fundamentally, the treatment of the geriatric patient with this concern is very different from that of a younger patient with similar concerns.

*Policy:* It is the policy of the Geriatric ED to comprehensively evaluate geriatric adults presenting with delirium, encephalopathy, or an altered mental status. Coordination of care, with special attention to directing interventions towards improving reversible causes and limiting factors that extend or cause delirium is the main goal.

It is the policy of the Geriatric ED to limit the use of chemical and physical restraints to only those situations in which they are absolutely necessary. Appropriate use of medications and alternative safety measures will be maximized to manage the agitated geriatric patient.[156]

*Procedure:*
Validated screening tools will be used to identify patients presenting with dementia and delirium. The assessment for delirium will use a two-step process. Step 1 (Figure 4) is the highly sensitive delirium triage screen. Step 2 is the highly specific Brief Confusion Assessment Method.[157] A variety of ED-appropriate dementia and mild cognitive impairment screening instruments have been validated, but all are most useful to reduce the probability of non-delirium cognitive impairment (dementia or mild cognitive impairment) rather than to rule-in the diagnosis. An assessment for dementia should be conducted after delirium screening. One of the most accurate dementia screening instruments is reproduced below in Figure 5.[155, 158]

**Figure 4. Delirium Screening Instruments**

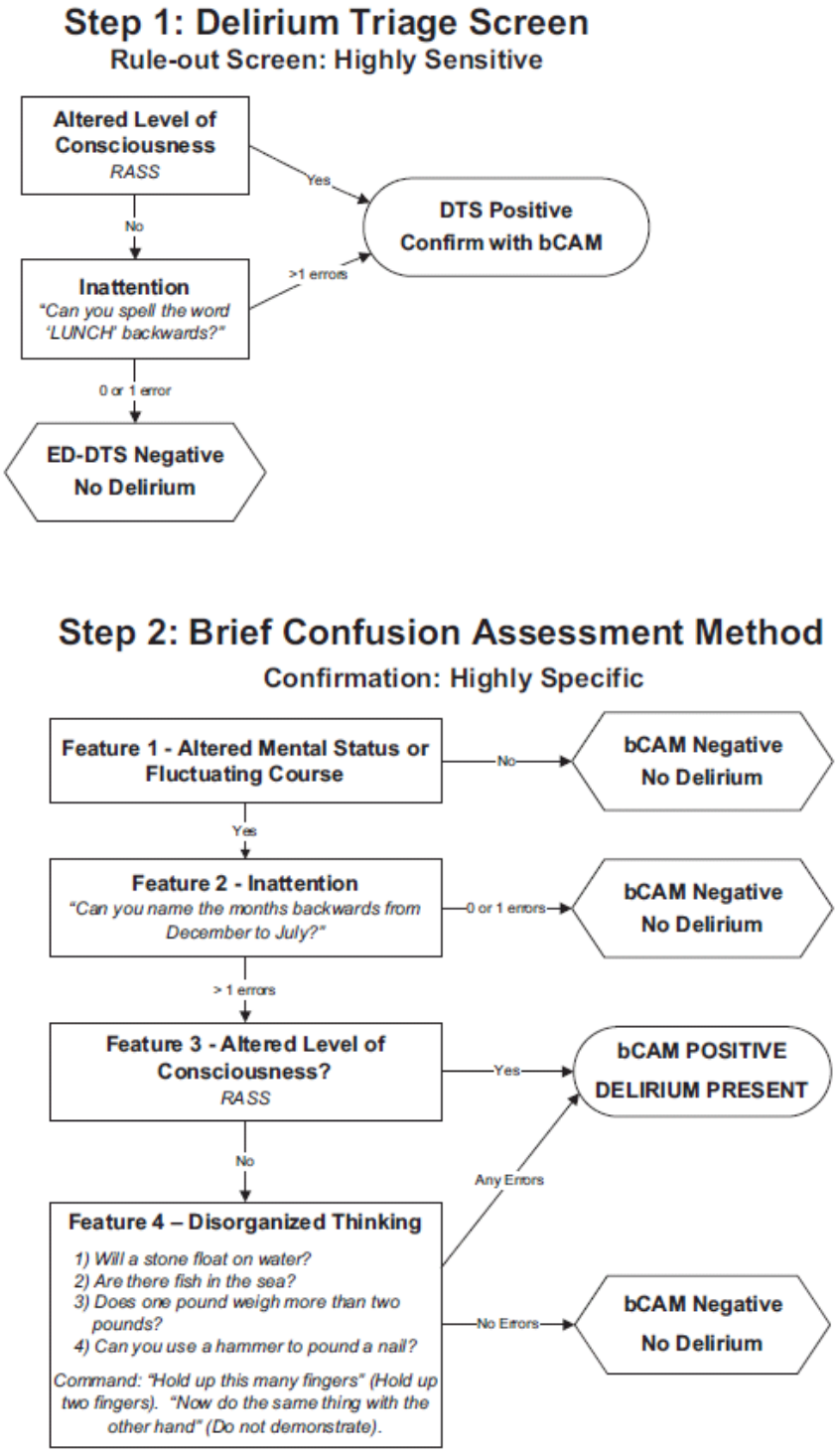


**Figure 5. The Short Blessed Test (SBT) for ED Dementia Screening**

Adapted from Katzman R, Brown T, Fuld P, et al. Validation of a short orientation-memory-concentration test of cognitive impairment. *Am J Psvchiatry*. 1983;140(6):734-739.

Instructions to the patient: "Now I would like to ask you some questions to check your memory and concentration. Some of them may be easy and some of them may be hard."

| | | Correct | Incorrect |
|---|---|---|---|
| 1) | What year is it now? _____ | **(0)** | **(1)** |
| 2) | What month is this? _____ | **(0)** | **(1)** |

Please repeat this name and address after me:
John Brown, 42 Market Street, Chicago
John Brown, 42 Market Street, Chicago
John Brown, 42 Market Street, Chicago

(underline words repeated correctly in each trial)
Trials to learning ____ (if unable to do in 3 trials = C)

3) Without looking at your watch or the clock, tell me what time it is.
(If response is vague, prompt for specific response)

| | Correct | Incorrect |
|---|---|---|
| (within 1-hour) _____ | | |
| Actual time: _____ | **(0)** | **(1)** |

4) Count aloud backwards from 20 to 1 **0 1 2 Errors**

(mark correctly sequenced numerals)
If subject starts counting forward or forgets the task, repeat instructions and score one error.

20 19 18 17 16 15 14 13 12 11
10 9 8 7 6 5 4 3 2 1

5) Say the months of the year in reverse order.
If the tester needs to prompt with the last name of the month of the year, one error should be scored.
(Mark correctly sequenced months.)

D N O S A JL JN MY AP MR F J **0 1 2 Errors**

6) Repeat the name and address you were asked to remember.

(John Brown, 42 Market Street, Chicago) **0 1 2 3 4 5 Errors**
_____, ____, ___, _____, _____

**Scoring the Short Blessed Test**

| Item # | Errors (0-5) | Weighting Factor | Final Item Score |
|---|---|---|---|
| 1 | | x 4 | |
| 2 | | x 3 | |
| 3 | | x 3 | |
| 4 | | x 2 | |
| 5 | | x 2 | |
| 6 | | x 2 | |
| | | | Sum Total = _____ (Range 0-28) |

0-4 Normal Cognition
5-9 Questionable Impairment
≥ 10 Impairment consistent with dementia

The evaluation of a mental status change should begin with an understanding of the difference between a delirium and a progression of an underlying dementia.

The following criteria can be helpful to diagnose an acute delirium:

**TABLE: Distinguishing Features Between Delirium and Dementia**

| Feature | Delirium | Dementia |
|---|---|---|
| Onset | Acute | Insidious |
| Course | Fluctuating | Constant |
| Attention | Disordered | Generally Preserved* |
| Consciousness | Disordered | Generally Preserved* |
| Hallucinations | Often Present | Generally Absent* |

* = Variable in Advanced Dementia

- As mental status changes may wax and wane, delirium screening will be reevaluated on a regular basis.
- Upon diagnosis of an acute delirium, attention will be paid to underlying causes including, but not limited to:
  - Infections
    - UTI, pneumonia most commonly
  - Medications
    - Anti-cholinergic medications
    - Sedative/hypnotics
    - Narcotics
    - Any new medication, especially if multiple medications have been recently added
  - Electrolyte imbalances
  - Alcohol/drug use or withdrawal
  - New focal neurologic findings should guide an evaluation for stroke syndromes

- Any geriatric patient being admitted to the hospital, regardless of primary diagnosis, should be evaluated for the presence/absence of the following risk factors for the development of a delirium while hospitalized:
  - Decreased vision or hearing
  - Decreased cognitive ability
  - Severe illness
  - Dehydration/pre-renal azotemia
    *The presence of 1-2 factors increases the risk of inpatient delirium by 2.5x, the presence of 3-4 factors increases the risk of inpatient delirium by >9x.
- Patients presenting with agitated delirium should be managed in a manner that improves safety and decreases the likelihood of injury. A therapeutic environment should be provided whenever possible. Preventative measures should include:
  - Eliminate or minimize identified risk factors
  - Avoid high-risk medications
  - Prevent/promptly and appropriately treat infections
  - Prevent/promptly treat dehydration and electrolyte disturbances.
  - Provide adequate pain control
  - Maximize oxygen delivery (supplemental oxygen, blood, and BP support as needed).
  - Use sensory aids as appropriate.
  - Foster orientation: frequently reassure and reorient patient (unless patient becomes agitated); use easily visible calendars, clocks, caregiver identification; carefully explain all activities; communicate clearly
  - Regulate bowel/bladder function.
  - Provide adequate nutrition
  - Increase supervised mobility
  - Increase awareness and vision whenever possible.
  - The use of restraints should be minimized whenever possible.
  - Chemical restraint/sedation should be minimized whenever possible.
    - When necessary, haloperidol is recommended over lorazepam for acute treatment.
  - Provide appropriate sensory stimulation: quiet room; adequate light; one task at a time; noise-reduction strategies
  - Foster familiarity: encourage family/friends to stay at bedside; bring familiar objects from home; maintain consistency of caregivers; minimize relocations
  - Communicate clearly, provide explanations
  - Reassure and educate family
  - Minimize invasive interventions

### *Recommended Resources:*

- Sitters
- Dry erase boards and markers to increase communication and orientation

### *Performance Improvement:*

- Physical restraint utilization hours/days
- Use of benzodiazepines in geriatric patients with agitated delirium
- Utilization rates of orientation techniques including dry erase boards

## Palliative Care in the Geriatric ED

*Background:* The provision of appropriate end-of-life care in the geriatric population is essential to a

successful Geriatric ED program.[74, 78, 159] The ED will provide access to palliative care and end-of-life care for medically complex patients in the Geriatric ED. By providing multidisciplinary teams for palliative care interventions, recent literature suggests this will improve quality of life,[160] reduce hospital length of stay [161] and ED recidivism,[162] improve patient and family satisfaction,[163] result in less utilization of intensive care,[164] and provide significant cost savings.[164, 165]

*Policy:* It is the policy of the Geriatric ED to recognize the role of palliative and end-of-life care. This includes several aspects of emergency practice already in place such as symptom management and discussion of critical decisions with family/caregivers.

*Required Resources:*

- Establish clinical protocol to identify ED patients who might benefit from palliative interventions
  - Pain management
  - Non-pain symptom management
  - Comfort care
  - Coordination of in-house palliative care team

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