Review Article

The Geriatric ED: Structure, Patient Care, and Considerations for the Emergency Department Geriatric Unit

John H. Burton¹, Janet Young, Carol A. Bernier

Department of Emergency Medicine, Virginia Tech Carilion School of Medicine, Roanoke, VA, USA

1. Introduction

The aging population of developed countries continues to create a large and disproportionate effect on emergency department (ED) operations. This trend is expected to continue. Older patients, generally defined as patients age 70 years and older, have unique risks, considerations, and needs that must be addressed by the ED healthcare team in order to realize the greatest potential impact of a single emergency care visit. Visits to the ED by older patients must be considered high-risk events because of relatively high rates for medical errors, adverse drug interactions, patient injury, propensity to return to the ED, readmission to the hospital, and death as compared to the ED population at large.

In this review article, we address the growing and persistent challenges to meaningful evaluation of the older ED patient. We describe a number of opportunities to improve patient care in this population when an age-specific treatment area is staffed with personnel trained and experienced in caring for the geriatric ED patient. Multidisciplinary staff should work in collaboration to recognize and direct the unique encounters for older patients. Healthcare institutions have tremendous potential gains for patients, families, and healthcare services when an integrated geriatric ED unit is functional as an integrated component of a larger healthcare network.

2. A unique ED evaluation and treatment space

Older patients are at increased risk for a number of specific events during their ED visit in comparison with younger, less vulnerable populations. Impaired hearing and vision will often limit site awareness and adaptation of the older patient to an unfamiliar environment. Similarly, baseline confusion, delirium, poor balance, and spatial awareness increase risk to the older patient of injuries in the typically designed healthcare facility. When these common factors for older patient limitations are not considered, the consequences may be falls, new or worsening delirium, and increased situational confusion.

Falls during healthcare visits by older patients visiting the hospital and ED is a major cause of avoidable harm in the healthcare setting. Significant reductions in injury risk can be attained by designing treatment facilities and programs to identify high-risk populations and reduce high-risk areas. Treatment space...
improvements can affect a number of interventions, including the removal of elevated thresholds for ingress and egress to treatment rooms. Other contributors to uneven walking surfaces in treatment areas that can be removed or altered include rugs, carpets, and textured tiles.

Transport methods and necessity should be reviewed for consideration for fall reduction. Staff-assisted, low-risk transport methods within the treatment setting such as wheelchairs, carts, and gurneys should be readily available. A reduction in patient transport can also affect risk in this environment. Transport can be reduced considerably by the use of bedside radiographic and portable laboratory assessment, which not only prevents this risk of transport and transfer injuries, but also prevents the patient from being introduced to an additional new treatment space.

Patient-contact materials and the routine physical handling of older patients should be carefully considered. Standardized treatment and transfer methods, such as the common prehospital practice of placing patients into a restrained board-and-collar setup, should be reviewed for a risk–benefit assessment in this population14,15. Restraining older patients may exacerbate dementia and confusion while offering very little potential benefit for immobilization. Typical nonpadded or minimally padded restraint materials used for excessive periods can place patients at relatively higher risks for skin breakdown and ulceration. Commonly used materials and movement equipment may unintentionally result in a high propensity for skin tears in frail patients. Items such as medical tape and adhesive devices are frequently applied to thin, friable skin and exhibit greater adhesive bond than the intradermal tensile strength of the older patient’s skin, resulting in skin injury, improperly positioned drainage catheters, and loss of intravenous access.

When properly trained for age-specific awareness, medical staff can have an enormous effect on the ED experience of the older patient. Hospital and ED administrative commitment to hospital implementation of geriatric-specific healthcare plays a pivotal role in improved outcomes for older persons across the healthcare facility16. Healthcare administrators tasked with elder-specific training and patient staffing ratios should take into consideration the increased need for ambulatory support, personal hygiene assistance, and injury prevention strategies essential to providing an optimum environment for the geriatric ED patient and his or her family17. Child life specialists are routinely used in pediatric EDs, resulting in the nonpharmacologic reduction of pain, amelioration of anxiety, and the increased healthcare satisfaction for families18. Whereas geriatric or elder life specialists are recognized for improved inpatient outcomes, including limiting functional decline and reducing delirium, their routine use in EDs currently is very limited17,18. Because older persons are at increased risk for functional decline, even after relatively minor traumatic injuries, every effort should be made to staff elderly-specific acute care areas with geriatric life specialists, a decision that may result in decreased inpatient admissions and unscheduled revisits19,20.

3. A standardized, population-specific medical evaluation approach

Increasing patient age imparts a higher risk for significant cardiovascular disease in both chronic and acute conditions during ED visits for older persons. Stroke and myocardial infarction occur with increasing frequency as patients age, with the added burden of increased morbidity and mortality. Acute infectious disease presentations are common in older ED patients, often presenting in advanced stage including sepsis. Acute traumatic injuries, often secondary to falls and other forms of minor blunt trauma, are also common in geriatric populations. These acute and chronic conditions can be exacerbated by the increased likelihood for baseline comorbid illnesses in this population19,20.

Chronic medications used for the treatment of common diseases such as hypertension, diabetes, or hypercoagulability may yield an impaired or deleterious response in the older patient with an acute illness or injury. Patient delirium, infections, pain, prescribed medications, and chronic disease exacerbation may result in acute modifications of the patient’s functional status19.

Given the increased relative prevalence of chronic serious illness, in addition to the enhanced risk of life-threatening medical conditions, it should not be surprising that geriatric ED patients undergo increased diagnostic testing and prolonged ED throughput and evaluation times21,22. Similarly, increased patient mortality risk translates to higher resource utilization and hospital admission in this population, relative to their younger counterparts.

High risk of serious acute illness or exacerbation of chronic illness renders a unique opportunity to invoke the routine use of high-intensity protocols to screen geriatric ED patients23. The high risk to older patients of impaired perfusion, terminal vascular events, medication reaction(s), toxicological events, and ischemia should prompt the utilization of electrocardiogram, and laboratory screening for cardiovascular injury and metabolic disturbance(s) to be routine. Fig. 1 displays a modification of standard Advanced Trauma Life Support (ATLS) evaluation for patients with blunt traumatic injury in the geriatric patient.

The enhanced risk of illness or drug-related electrolyte and fluid imbalances should render intravenous access and laboratory assessment, including toxicological assessment, as commonplace. Advanced imaging modalities, such as computed tomography (CT), ultrasonography (US), and magnetic resonance imaging (MRI) have substantial roles to play in the routine assessment of acutely ill geriatric ED patients with the common complaints of altered mental status, abdominal pain, chest pain, and fall-related trauma24. Limited, goal-specific ultrasound has demonstrated the ability to rapidly and accurately diagnose the critically ill when extensive medical history is unavailable25.

A protocolized, chief complaint and history-targeted approach should incorporate a greater awareness of the atypical presentation of disease, the complex interrelated acute medical and psychosocial issues of such patients, and the appropriate use of available screening and assessment tools. Approaches directed in this fashion can assist emergency physicians in providing high-quality care to the aging population.

![Fig. 1. Modification of ATLS guidelines for the assessment of geriatric blunt trauma.](image-url)
4. A neurocognitive approach to functional assessment

In addition to medical evaluation, geriatric ED patients should undergo a standardized neurocognitive assessment during their ED visit. Delirium, dementia, and depression are common illnesses in this population. Current emergency medicine clinical practice does not routinely incorporate cognitive assessment as a component of a typical patient evaluation. The pace and challenge of most ED environments require clinicians to reduce as much time and effort as possible from items that extend beyond the basic chief complaint–driven medical assessment. Elderly patients require an extended evaluation that often reaches beyond the acute single complaint to incorporate a more global view of patient health, risk, and needs.

A number of neurocognitive assessment tools have been evaluated in the ED and acute care setting. These assessments are often referred to as a comprehensive geriatric assessment (CGA), an interdisciplinary patient evaluation that determines the medical, psychological, and functional capabilities of an older individual. The goal of CGA is to develop a coordinated and integrated plan for treatment and long-term patient follow-up.

A recent systematic review noted four different functional assessment tools to be appropriate for use in geriatric patients in the ED. The authors emphasize that the function level in geriatric patients has been identified as a predictor of adverse patient events, including returns to the ED or hospital following the index visit. Investigations have also demonstrated that ED patients who are subjected to CGA are more likely to be alive and in their own homes at the completion of defined periods.

Assessment tools for older patients focus on a number of consistent areas with an emphasis on functional assessment, cognitive function, resource availability, and resource dependency. Cognitive and functional impairment are common in geriatric patients in the ED. Acute functional impairment caused by illness would be expected to result in short-term resource dependency, including needs for assisted daily living. However, many older patients are resource dependent as a baseline, and therefore an acute event or exacerbation of chronic condition can significantly increase the need for extrinsic resources to support health and function in the short and long-term timeframe.

5. A multidisciplinary approach to ED treatment and disposition

The typical ED treatment team will consist of emergency physician and nurses, respiratory therapists, radiology technicians, and support staff. It is unusual for ED staff members to have geriatric-specific training or approach expectations as a routine skill in the daily approach to their patients. Although pediatric ED teams and staff are widely recognized as possessing unique and essential age-specific preparation, the same concepts are unusually applied to the geriatric ED population, which surprisingly is larger and at significantly increased risk of mortality from disease episodes. To counter the elevated potential for high morbidity and mortality in older patients, the optimized geriatric ED should incorporate fellowship-trained geriatric emergency physicians, geriatric life specialists, ED pharmacists, social workers, and elder-specific approaches to patient treatment and disposition decisions.

A geriatric ED should be staffed by personnel specially trained in the care of older persons. Ideally, an emergency physician uniquely trained in the evaluation and assessment of older persons in the acute settings should be evaluating medical needs. Fellowship training in geriatric emergency medicine specifically focuses on interdisciplinary teamwork approaches to patient safety for older adults, with particular emphasis on improving the care, outcomes, and safe discharge practices in the ED. Complementary geriatric life specialists can provide cognitive screenings, promote cross-discipline teamwork, and engage family and social supports to promote evidence-based geriatric outcomes. Designated ED pharmacy staff can reduce the inappropriate use of medications during the transition from skilled nursing facilities to hospital-based care, when medication errors are most likely to occur.

Routine ED disposition planning tends to focus on immediate, short-term recovery considerations. Given the elevated risk for mortality in older patients, a multi-disciplinary, long-term vision should incorporate planning and integration of end-of-life preparation including hospice services when appropriate. Placement considerations should also include rehabilitation, observation, and assisted living as options in disposition considerations. To fully explore each of these options, an integrated team should include personnel from social work, physical and occupational therapy, and admission/discharge planning disciplines. Optimally, these resources should be integrated into a treatment team approach for a comprehensive disposition planning process for each geriatric encounter. These assets should be coupled with post-ED discharge follow-up assets, such as medical homes, to monitor and adjust the planning process.

6. Summary

The chief complaint–centered, single-encounter emergency visit typical of modern EDs is not an optimal setting for delivery of care to many complex geriatric patients. Although the modern ED imaging, laboratory testing, and treatment resources necessitate that this location is the epicenter for immediate acute illness care, modifications to the typical patient environment and resource utilization should be considered in order to optimize opportunities for outcomes in older patients.

A geriatric–specific approach should include considerations for changes in the ED physical treatment space, including materials and space design. Patient evaluation and treatment should incorporate many geriatric–specific protocols including comprehensive screens for ischemia and sepsis. The ED evaluation should incorporate a neurocognitive functional assessment. Enhanced resources available for these patient encounters should include decision support for medical care, complex pharmacy medication management, and social resources for a comprehensive consideration for disposition and patient placement following the ED visit.

References


