Can an Emergency Department Adequately Address an Older Adult who has Complex Needs?

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INTRODUCTION

The Emergency Department (ED) is a critical component of the geriatric continuum of care. Older adults comprise up to 25% of ED attendance and 38% of patients transported by emergency medical services (EMS.)[2-4] Despite this, the traditional rapid linear ED treatment framework remains ill-equipped to meet the complex care needs of many vulnerable older adults.[5-8] Upon discharge, the ED-to-home transition is a high-risk time for older adults. About one third of older adults will suffer an adverse result including ED revisit, eventual hospital referral, admission to a long-term care institution, or death within 3 months of the ED visit.[9] Moreover, extended or frequent ED visits and repeated hospitalizations are costly. It has been reported that the cost of two potentially preventable geriatric syndromes, hospital delirium and repeated falls, is projected to be $83 billion a year in the United States.[10,11]

A Comprehensive Geriatric Assessment (CGA) is a framework to assess the medical, psychosocial, and functional challenges of older patients who have complex needs.[12] The Acute Care for Elders model uses principles of CGA. Although CGA can be time intensive, a rapid assessment across multiple domains can be accomplished in the ED. The Domain Management Model (DMM) is an evaluation tool for providers to rapidly understand relevant factors driving the ED presentation within the domains. It is, essentially, a way to structure the "History of Present Illness" and "Social History" to capture complexity, expedite team communication, and facilitate transition planning.

In 2018, the American College of Emergency Physicians (ACEP) began accrediting facilities as "Geriatric Emergency Departments" (GEDs) in compliance with the multi-organizational recommendations released in 2014.[13] However, despite broad circulation of the 2014 Consensus Geriatric ED recommendations, GED care remains heterogeneous, and the guidelines are not adopted in most EDs.[14]

We present this case scenario as a potentially avoidable admission. We explain how the Geriatric ED model using the ACE principles and the DMM approach may be employed to capture the important medical, cognitive, functional, and support environment details in the ED which allows for construction of a durable disposition plan.

Box 1: Case Description

An 80-year-old woman, with a medical history of dementia with behavioral changes, Parkinson's disease, osteoporosis, chronic low back pain, and left leg sciatica presented to the ED by EMS for worsening acute on chronic pain and feeling of weakness in her legs. She "pulled" herself to one of the neighbors who called 911. During her ED evaluation, the patient was alert, calm, cooperative, and in moderate pain. Her vitals were stable. She was able to ambulate using a cane, with a shuffling gait, freezing, and stooped posture. Her general physical exam was otherwise normal. Her neurologic exam was not consistent with an acute neurological process. A Confusion Assessment Method (CAM) screening was negative for delirium. Her basic labs were normal. Imaging ruled out emergency pathology of the spinal cord. A prior MRI spine from one year prior detailed lumbar spondylosis and chronic T12 compression fracture. A quick chart review revealed recurrent ED visits. She had a total of five visits in two years resulting in three hospital admissions. Two hospitalizations were for acute-on-chronic leg pain and worsening gait. One hospitalization was for a non-syncopal fall resulting in a hand fracture. At every visit she was prescribed a different pain management regimen. Each regimen had been discontinued because it was not effective or not tolerated due to side effects. She was maintained on pregabalin without obvious improvement in her feet pain. On a recent clinic visit, her primary care provider (PCP) added duloxetine for depression. There was no Geriatric ED program at the site. As it was deemed too risky to return her to her home environment in her current condition, and her multiple chronic conditions couldn't be addressed in the emergency department, the ED team decided to admit her to the ACE unit for further interdisciplinary evaluation and management.

DISCUSSION

We describe below three approaches to the acute care of older adults. These illustrate how geriatric principles may be applied to ED patients with multimorbidity and complex needs to reduce potentially avoidable hospitalizations. The strategies include: the geriatric ED model replicating ACE principles, the Domain Management Model, and the use of screening tools for common geriatrics syndromes. There is overlap of geriatric principles with each model.

Geriatric ED Model

The inpatient ACE unit model involves a multidisciplinary team utilizing a structured approach to comprehensive assessment, team and family communication, and proactive disposition planning.[15,16] Members may include a geriatrician, a transitional nurse (TCN) or a geriatric nurse practitioner (NP), a social worker (SW), a pharmacist, a physical therapist (PT), and palliative care consultants. These members collaboratively develop a goal-concordant, patient-centered care, and disposition plan. The geriatric ED model involves systematized, holistic evaluation and targeted interdisciplinary discussions for high-risk patients, effectively mirroring the ACE process in the time-pressured, limited-resource ED environment. As a full multidisciplinary team is seldom available in the ED, providers and nurses may approximate an ACE assessment utilizing the Domain Management Model and select screening instruments.

Domain Management Model

This efficient paradigm is the model that guides the ED team to capture, arrange, and communicate complexities across disciplines, specialties, and care sites. It evaluates across four domains: medical/surgical issues, mental status/cognition, physical function, and physical/social/financial living environment.[17,18]

1. The first domain consists mainly of acute medical management: identifying comorbid diseases, medication management, and facilitating medical transitions of care.
2. The second domain is important to recognize cognitive impairment (dementia, delirium) and associated psychological or behavioral problems.
3. The third domain addresses baseline functional status, screening for functional decline, and fall risk.

4. The fourth domain evaluates the living arrangements of the older adult (situation and home safety), social support systems (family members, care givers, elder abuse risk, community resources), and financial management (e.g., exploitation risk.)

ED-Based Screening Tools

ED-based screening for high-risk features complements the Domain Management model and may reduce the risk of potentially avoidable adverse outcomes during and shortly after the ED visit. Serious geriatric syndromes such as delirium, dementia, and functional impairment are often not identified in the standard ED evaluation, with subsequent effects on length of stay, mortality, and readmission. Processes and systems can be implemented into ED workflow to make screening feasible, reducing risk through timely diagnosis and management, as well as linkage to appropriate services beyond the ED.

Box 2: Comprehensive Geriatric Assessment using Domain Management Model in GeriatricED and ACE Unit		
Domain	**Geriatric ED**	**ACE Unit**
Medical/Surgical	Knowledge around specific domains: • Atypical presentation • Trauma/falls • Avoiding potentially inappropriate medications • Pain management • Transitions of care	• Identify comorbidities • Identify inappropriate medications • Polypharmacy • Medication education • Prevention of Hazards of hospitalization • Palliative Care
Screening Tools	AGS Beers CriteriaDrug Interactions STOPP/Start	
Cognition/Mental status	• Delirium recognition • Dementia screen • Depression/ Anxiety screen • Suicidal Risk	• Psychosocial assessment • Depression/ anxiety screen • Evaluate for delirium, behavioral and cognitive decline
Screening Tools	Delirium Triage ScreenbCAM/ 4AT Short Blessed Test Ottawa 3DY PHQ2	CAM/ ICU-CAMMMSE/ MoCA PHQ9/ GAD7
Functional	• Screening for functional de-cline • Fall risk assessment	• Knowledge of baseline functional status (bADLS, iADLs) • Screen for functional decline,fall risk assessment • Assess nutrition, incontinence, dental, vision/hearing
Screening Tools	Identification of Seniors at Risk(ISAR) Triage risk screening tool (TRST)	Katz and Lawton scores
	Timed Up and Go 4 Stage Balance TestFAST/ FRAIL Scale	
Support Environment (Physical/Social/Financial)	• Caregiver/family communication • Physical environment of home • Access to food/ communication/transportation • Finances • Verification of completion of ACD • Transition of care	• Recognize social support systems • Evaluate for: home safety, need for DME, health literacy,access to health services, care-giver strain • Facilitate community resource referrals, Advance Care Directives • Care transitions planning

Box 2 uses the Domain Management Model to describe key strategies of the Geriatric ED and ACE unit, respectively. Some screening tools are applicable in each setting to assess the older patients' unique needs and their specific goals.[19] Screening in the Geriatric ED is performed by the nursing staff

and further assessment follows.[20] **Box 3** provides an example on how we can apply the Domain Management Model in the ED in the context of this patient's case.

Box 3: Application of the Domain Management Model in ED to This Case	
1. Medical Issues/Medications	• Patient brought by EMS for acute severe bilateral feet pain with worsening gait • Stable vital signs • Confusing her medications for Parkinson's disease and peripheral neuropathy
2. Mental Status/Cognition/Psychologic history	• Patient alert and oriented, following commands • Speaks English fairly • Low coping skills; normal behavior • Depressive features (PHQ score 9). Her son died at an early age. • Dementia with visual and auditory hallucinations (e.g., sees son talking to her.)
3. Physical Function	• Walks with cane in the ED. Antalgic gait. Stooping posture • Modified independent with basic self-cares • Drives an auto; manages her finances; does household chores; shops. (Modified independent with instrumental ADLs)
4. Living Environment (Physical/Social/Financial)	• Lives alone in an apartment. No caregiver. Would need assistance at home • Estranged from her family. Divorced with no social interactions; Trusts oneneighbor • No advanced directives • Has Medicare insurance and receives social security

Box 4: Case Follow-Up

The ACE unit interdisciplinary team determined that the patient had been confusing her medications. She mistakenly took extra doses of her Parkinson medications, which interfered with her peripheral neuropathy symptoms. A geropsychiatric examination confirmed cognitive dysfunction (MoCA score of 18 of 30) and depression (PHQ score of 9). The patient had long standing sleeping problems and depressive psychosis with visual and auditory hallucinations of her long-deceased son who tragically committed suicide in his early adulthood. She also had delusions that her physicians and people surrounding her had intentions to hurt her. These delusions interfered with her medication adherence and her trust in her primary care physician. She was independent in her basic self-cares (ADL's Katz score:6/6, IADL Lawton score:8/8). She had no advance directives. The ACE unit team also determined that while the patient could speak and understand English, she could neither read nor write English. Her English proficiency hindered her understanding of "after visit summaries," discharge instructions, and safe medication use.

On further investigation of the patient's social background, she endorsed strong cultural and religious beliefs. She was alone with no social connections. Her assessment occurred over the first 48 hours of her care. Following her discharge from the hospital, a home visit was conducted by a transitional care nurse. This nurse scheduled appointments with her primary care provider, a geriatric psychiatrist, and home care services (including a home health aide.) The home health social worker engaged the adult protective services for guardianship assignment and communicated some resources to the patient for surrounding Korean communities. The patient's understanding of her medications was confirmed and monitored.

SUMMARY

Evaluating the needs of older adults who have complex needs in the ED is a unique challenge. It takes considerable time to gather information from the patient and their caregivers, and to review a long medical history and medication list. The provider must determine the new and the baseline findings and integrate that information with data obtained during the ED evaluation. Older patients who have complex needs are often simply admitted to the hospital or are sent to an observation unit to sort out multiple medical, cognitive, and functional issues. The interdisciplinary approach of the geriatric ED uses principles of the acute care for elders (ACE) model and integrates geriatric screening tools that were previously used in the context of hospital care. Other frameworks were also designed for a comprehensive geriatric evaluation, including the Geriatric 5Ms model of care addressing 5 domains: Mind, Mobility, Medications, Multi-Complexity, and What Matters Most. Similarly, the Domain Management Model uses

a holistic systematic approach to assess multiple aspects of an older patient's needs. This approach can help the team to develop a care plan which may allow an individual to avoid hospitalization.

KEY WORDS

Geriatric emergency care, domain management model, transitional care, ACE model

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RT, MM: conceptualization of the case scenario. RT, MM, AP, RA: Drafting the original manuscript and literature review. MM, AP: Supervision, review and editing. All authors read and approved the final manuscript.

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CONFLICTS OF INTEREST

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