White Paper—Geriatric Emergency Medicine Education: Current State, Challenges, and Recommendations to Enhance the Emergency Care of Older Adults

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ABSTRACT

Older adults account for 25% of all emergency department (ED) patient encounters. One in five Americans will be 65 or older by 2030. In response to this need, geriatric emergency medicine (GEM) has developed into a robust area of academic and clinical interest, with extensive evidence-based research and guidelines, including clear undergraduate and postgraduate GEM competencies.

Despite these developments, GEM content remains underrepresented in curricula and licensing examinations. The complex reasons for these deficits include a perception that care of older adults is not a core emergency medicine (EM) competency, a disjunction between traditional definitions of expertise and the GEM perspective, and lack of curricular capacity.

This White Paper, prepared on behalf of the Academy of Geriatric Emergency Medicine, describes the state of GEM education, identifies the challenges it faces, and reviews innovations, including research presented at the 2018 Society for Academic Emergency Medicine (SAEM) Annual Scientific Meeting. The authors propose a number of recommendations. These include recognizing GEM as a core educational priority in EM, enhancing academic support for GEM clinician-educators, using social learning and practical problem solving to teach GEM concepts, emphasizing a whole-person multisystem approach to care of older adults, and identifying ageist attitudes as a hurdle to safe and effective GEM care.

In the United States, older adults have a high rate of emergency department (ED) attendance, with one of every five visiting the ED at least once a year.¹ Older adults account for up to 25% of all emergency department (ED) patient encounters and for 38% of emergency medical services (EMS) transports.^{2–4} This number will rise dramatically: in 2018, roughly one in seven Americans was an older adult; by 2030, that figure will be one in five. Care of this population is resource-intensive and involves substantial emergency

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physician time and higher overall costs.⁵ Older adults are more likely to be admitted to the hospital and to experience high morbidity and mortality, repeat ED visits, and functional decline after an index ED visit.⁶ They also experience iatrogenic harm while hospitalized.^{7,8} Emergency medicine (EM) quality improvement and research must stress the care of this complex and often vulnerable population, with a view toward transforming clinical practice itself.⁹

Medical education, too, must prepare future physicians to meet this demographic imperative. As expressed by a consensus conference of geriatric medicine educators, effective care of older adults depends on a nuanced understanding of “the interrelationship of disease, lifestyle and social issues, enhanced knowledge of the differences between normal and abnormal physical changes related to ageing, health care systems . . . multi-disciplinary team care, and ethical issues in geriatric care.”¹⁰ Accordingly, in 2008, the Institute of Medicine (IOM) stated that licensure for all health care professionals in the United States should require demonstration of competence in the care of older adults.¹¹

Despite numerous advances in the field of geriatric emergency medicine (GEM), few undergraduate or postgraduate medical education (UGME and PGME, respectively) programs identify care of older adults as an educational priority, and most curricula lack significant GEM content. This content is also lacking in licensing and certification examinations. In this paper, we explore the factors responsible for these deficiencies and discuss how GEM principles can best be incorporated into medical education.

The Academy of Geriatric Emergency Medicine (AGEM)

The purpose of the Society of Academic Emergency Medicine (SAEM) is to lead the advancement of academic EM through education and research, advocacy, and professional development.¹² The SAEM AGEM provides a forum to exchange ideas, collaborate on projects concerning acute care of older adults, and educate the wider EM world. Founded in 2009, AGEM’s mission is “to improve the quality of EM care for older patients by advancing research, education, and faculty development.”¹³

Objectives

There exists an abundance of expert-endorsed and evidence-based guidance to advance GEM education.¹⁴ This includes a substantial body of primary studies

and reviews on a range of GEM topics, the creation of GEM core competencies for PGME, and the recent adoption of a geriatric emergency department accreditation program by the American College of Emergency Physicians (ACEP). Additionally, an increasing number of EM faculty with expertise in GEM are achieving prominence at the national and international levels. *What remains to be developed is a coherent strategy to integrate GEM into undergraduate and residency training both nationally and internationally.*

This article was prepared in response to a request from AEM *Education and Training* for SAEM academics to submit conceptual White Papers regarding key educational issues in their areas of expertise. It contributes to the development of a comprehensive strategy for GEM education by:

- Reviewing the current state of GEM education at the UGME and PGME levels;
- Identifying fundamental challenges facing GEM education;
- Sharing educational innovations, including insights from GEM research presented at the SAEM Annual Scientific Meeting (ASM); and
- Presenting recommendations to advance GEM education, research, practice, and advocacy.

Methods

The concept of the paper was introduced at the AGEM business meeting during the 2018 SAEM ASM in Indianapolis, Indiana, which was open to all SAEM meeting attendees. The creation of this paper was approved by the AGEM Executive Board in May 2018. All AGEM members were invited to participate. Feedback regarding its direction and content was sought from current and emeritus AGEM Executive Board members.

THE CURRENT STATE OF GEM EDUCATION

Despite dramatic and long-standing increases in the proportion of older ED patients, GEM remains underrepresented in UGME and PGME curricula and standards. In the United States, curricula are guided in large part by the American Board of Emergency Medicine’s (ABEM) Model of the Clinical Practice of Emergency Medicine (EM Model).¹⁵ This document defines the expert view of the core content of EM in terms of a list of common ED presentations. It is used as a reference document by numerous professional bodies,

including SAEM, ACEP, and the Council of Emergency Medicine Residency Directors. Perhaps most significantly, every examination developed by ABEM is keyed to the EM Model. Yet the 2016 revision of this highly influential document contains only one presentation specific to older adults (elder abuse). Not surprisingly, only 6% of EM in-service and board certification questions involve geriatric patients, despite the fact that older adults account for more up to 25% of all ED patients.¹⁶

At the UGME level, many programs emulate the Clerkship Directors in Emergency Medicine's (CDEM) model curriculum and syllabus.¹⁷ Like the EM Model, the CDEM list of essential knowledge, skills, and attitudes makes no specific reference to geriatric competencies, nor do CDEM's widely used and freely available third- and fourth-year EM clerkship curricula and reference materials.¹⁸

The situation is similar outside the United States. The recently revised content knowledge objectives of the examinations of the Licentiate of the Medical Council of Canada, a requirement to qualify for practice in that country, are a case in point.¹⁹ Its list of well over 100 objectives includes only three conditions that predominantly affect older adults: frailty, delirium, and cognitive impairment/dementia. With the exception of the section on the periodic health examination, which recommends inquiring about falls and nutrition, few other objectives make reference to unique considerations in older adults.

We are not the first to note these deficits. Years before the IOM issued its 2008 call for enhanced geriatrics education, a 2003 review of the Accreditation Council for Graduate Medical Education (ACGME) requirements of all medical and surgical specialties found that fewer than 30% included any mention of geriatrics training.²⁰ At that time, the only geriatrics content in the standards for EM training programs consisted of a requirement to instruct trainees "on the presentation, detection, and management of domestic violence *including elder abuse*, physical and sexual, as well as neglect" (emphasis added).

This striking gap can no longer be justified by a lack of knowledge about the essential geriatric UGME and PGME competencies either generally or in EM specifically. Since 2000, the Association of American Medical Colleges and the John A. Hartford Foundation (JAHF) have been collaborating to define geriatric competencies for both PGME and UGME. In 2007, the AAMC/JAHF Consensus Conference on Competencies in Geriatric Education produced a list of "minimum geriatrics-specific competencies needed by a new graduate trainee in any specialty to adequately care for older adults."¹⁰ The publication itself refers to these "only half-facetiously . . . as the 'Don't Kill Granny' competencies." The processes were intended to yield competencies that focused on issues that, among other criteria, mattered to health outcomes for older adults, were evidence-based, and reflected broad-based stakeholder input.

Table 1
Comparison of Sample Geriatric Competencies From Two Consensus Processes

2007 AAMC/JAHF Consensus Conference on Competencies in Geriatric Education (Undergraduate) ¹⁰ (<i>Emphasis Added</i>)	2009 Geriatric Competencies for EM Residents ²¹
Emergently evaluate and formulate an age-specific differential diagnosis for elders with <i>new cognitive or behavioral impairment</i> , including self-neglect; initiate a diagnostic workup to determine the etiology; and initiate treatment.	Formulate a differential diagnosis and implement initial evaluation in a patient who exhibits <i>delirium, dementia, or depression</i> .
Assess and correct (if appropriate) <i>causative factors in agitated elders</i> such as untreated pain, hypoxia, hypoglycemia, use of irritating tethers (defined as monitor leads, blood pressure cuff, pulse oximetry, intravenous access, and Foley catheter), environmental factors (light, temperature), and disorientation.	Develop an evaluation and non-pharmacologic management plan for <i>agitated demented or delirious patients</i> .
In patients who have fallen, evaluate for <i>precipitating causes of falls</i> such as medications, alcohol use/abuse, gait or balance instability, medical illness, and/or deterioration of medical condition.	Ask all patients > 65 years old, or their caregivers, about <i>falls in the last year</i> ; watch the patient rise from a chair and walk (or transfer), then record and interpret the findings.
Develop <i>plans of care</i> that anticipate and monitor for <i>predictable complications in the patient's condition</i> (e.g., gastrointestinal bleed causing ischemia).	Communicate the <i>key components of a safe discharge plan</i> (e.g., accurate medication list, plan for follow-up), including comparing/contrasting <i>potential sites for discharge</i> .

The Conference identified 26 geriatric competencies, organized into eight distinct domains. Examples are represented in Table 1. In addition to being one of the earliest responses by medical educators to the IOM’s systemwide call for enhanced competence in geriatrics, the “Don’t Kill Granny” (AAMC/JHGF) competencies also represented the first effort to apply the principles of competency-based training to care of older adults.

In 2008, a committee of EM educators was convened to identify a set of GEM competencies at the PGME level. The expert participants in this process were directed to identify competencies that were specific to the appropriate care of older ED patients, not simply good care for the entire ED population, and within the purview of resident level actions and responsibilities.²¹ They intentionally used the 2007 AAMC/JHGF competencies as the starting point for a second consensus process. This process identified 26 EM-oriented competencies organized under eight domains, similar to the 2007 competencies, but focused at a level of clinical sophistication more appropriate to the level of a graduating resident not that of a graduating medical student or new intern. Table 1 presents selected examples, comparing them with the 2007 AAMC/JAHF Consensus competencies.

International bodies have also attempted to define GEM education standards. In 2014, the European Geriatric Medicine Society and the European Society of Emergency Medicine formed a taskforce (ETFGEM)

to develop a GEM curriculum.²² The curriculum was intended to reflect “the minimal requirements a geriatrician/emergency physician should be able to demonstrate at the end of their specialty training.” As such, it was to be “primarily aimed at post-graduate [learners],” with the possibility of incorporating some aspects into undergraduate curricula. The ETFGEM curriculum consists of 16 domains containing 98 competencies, of which Table 2 presents examples.

In addition, the specialty’s two standard reference texts, which are also widely viewed as the essential preparation resources for the EM board examinations, also now address geriatrics topics. *Rosen’s Emergency Medicine* includes three chapters dedicated to older ED patients (“Geriatric Trauma,” “Elder Abuse and Neglect,” and “The Elder Patient”), while *Tintinalli’s* includes two (“Trauma in the Elderly” and “Mental Health Disorders of the Elderly”).^{23,24}

The current state of GEM education, therefore, is one in which rigorously developed expert opinion and evidence-based recommendations about essential geriatrics knowledge and skills in the EM setting have not yet significantly influenced formal standards and curricula. A decade after the first definitive consensus statement about PGME GEM competencies, it is important to reflect on the deeper reasons why this gap persists and what may be done to close it.

CHALLENGES

This White Paper defines four broad categories of challenges to optimizing GEM education:

- *Professional self-perception:* The tendency of EM practitioners and educators to see care of older adults as resting outside emergency physicians’ scope of responsibility.
- *Epistemology:* An essential mismatch between, on the one hand, EM education’s historical emphasis on mastery of single-system, single-issue problem solving and, on the other, the inherently multifactorial and multisystem perspective required to provide excellent ED care for older adults.
- *Context:* The difficulty of adapting the time- and resource-intensive methods and interventions of geriatric medicine to the time- and resource-constrained reality of the modern ED; and
- *Capacity:* The competing demands on curricular time and attention and the relative undersupply of GEM clinician-scholars and educators.

Table 2
European Geriatric Medicine Society and European Society of Emergency Medicine Taskforce GEM Curriculum Objective Examples²²
(Emphasis Added)

To recognize the importance of capturing the home environment including formal and informal caregivers as part of the prehospital assessment
To be aware of the potential existence of resuscitation order or advance directive that may be in the person home
To understand the importance of sensory impairments in older people and the need to ensure that patients are conveyed with their sensory appliances
To be able to recognize high-risk presentations in older people, which may not be identified using traditional triage scores
To appreciate that older people are at greater risk of complication from blunt trauma, such as pneumonia following rib fracture or solid organ injury
Assess and correct factors causing agitation in older people such as untreated pain, hypoxia, hypoglycemia, use of restraints (e.g., monitor leads, blood pressure cuff, pulse oximetry, intravenous access, and urinary catheters), environmental factors (light, temperature), and disorientation

GEM = geriatric emergency medicine.

Professional Self-perception

The principal challenge to optimizing GEM education is that the specialty has not yet identified care of older adults, which now defines our field as much as do pediatrics, resuscitation, and trauma, as a core domain of EM expertise. As a recent statement by the International Federation of Emergency Medicine about minimum standards for care of older people emphasizes, the first step toward excellent care is the recognition “that older people are *a core population of service users*, not defined merely by chronological age but by the complex interactions of physical, psychological and social frailty, disease, and access to care.”²⁵

Currently there exists a clear disjunction between two perspectives on EM. On the one hand is what we might call traditional EM, with its emphasis on single, rapidly developing, immediately reversible problems, and on the other, EM as it applies to older adults whose ED visits frequently result from a steady decline often attributable to multiple chronic medical conditions and complex psychosocial circumstances, which may or may not be reversible. The exemplar of traditional ED care might be a hypovolemic trauma victim or a septic infant; the exemplar of geriatric ED care might be the polymorbid socially frail person who presents with acute functional decline. When the recognition at a deep cultural level that both perspectives are core to EM practice finally occurs, then moves to enhance GEM education will be inevitable.

Geriatric EM advocates have raised awareness. The most recent example is the adoption by ACEP of accreditation standards for geriatric EDs.¹⁴ Nevertheless, there remains a collective lack of ownership of geriatric care in the ED by practitioners. The perception persists that providing comprehensive acute care to older people goes “beyond the EM model.” If our job is restricted to fixing broken bones, resuscitating the critically ill, and reversing emergent conditions, then the matter of caring for older patients is perforce “someone else’s job.” This view also ignores that, just like orthopedic and other conventional emergencies, there is evidence-based guidance for managing many of the presentations seen in older ED patients. Moreover, many elder presentations are true emergencies and therefore in the sphere of EM practice by definition. If we fail to apply known GEM guidance, we are providing substandard care to an entire subpopulation.

Epistemology

All approaches to education reflect particular epistemologies, i.e., assumptions about the nature of knowledge. For its part, EM prioritizes a single system-focused, problem-oriented approach to patient assessment. It valorizes mastery in recognition and management of a set of emergent “presenting complaints” across the life span. Conversely, geriatric medicine prioritizes a more complex multisystem function-oriented approach to patient assessment. It valorizes mastery in recognition and management of a range of complex syndromes (e.g., delirium, falls, functional decline) in an age-defined population.

For example, the traditional EM approach may identify a patient’s main problem as a left ventricle with decreased ejection fraction requiring diuresis to relieve dyspnea. The GEM approach, by contrast, may identify the cardiac problem as secondary to a more serious one: the absence of the social supports required to improve the patient’s dietary intake, medication compliance, and overall function. The geriatrics-informed perspective would offer that the solution may not lie solely in managing the patient’s volume overload in the ED and referring them to the right admitting service. Rather, it might also involve intervening on so-called “social issues” identified early in their visit by, for instance, linking them to community resources and laying a foundation for smooth transitions of care in the event that they are admitted. GEM also recognizes that a more comprehensive approach may decrease the revolving ED visit pattern of many similarly challenged patients.

Another key geriatric medicine precept is that avoiding or removing certain interventions is itself a form of treatment. Regardless of diagnosis, those proficient in the care of older adults often favor demedicalizing measures such as pharmaceutical debridement (cessation of unnecessary medications) and removal of deliriogenic tethers (such as intravenous lines and unnecessary urinary catheters, which are often inserted reflexively). This “less is more” approach differs markedly from the EM mainstays of triage, resuscitation, and temporization.

Geriatric medicine also places a strong emphasis on the harms of treatment and the fact that frail adults are uniquely vulnerable to iatrogenesis such as hospital-acquired infections and delirium, many of which can happen in the ED hallway. Inouye and colleagues²⁶ observe that, when confronting geriatric conditions, “diagnostic strategies to identify the underlying

causes can sometimes be ineffective, burdensome, dangerous, and costly . . . [and] therapeutic management of the clinical manifestations can be helpful even in the absence of a firm diagnosis or clarification of the underlying causes.”

Context

Essential to the evaluation and management of many conditions primarily affecting older adults is “the need for substantial provider time and longitudinal follow-up to intervene and assess effectiveness.”²⁶ In the ED, nothing is in shorter supply than time. In addition, most evidence-based GEM interventions are multidisciplinary and thus relatively intensive in terms of space and/or human capital. Both are hard to come by in an era of “hallway” or “stretcher” medicine.

We must also underscore the significant hurdle of ageism in health care. Care of older adults is often described as slow, emotionally taxing, and intellectually uninteresting because older adults themselves are often seen and spoken of in much the same way. This prejudice is sustained in many ways and at many levels by broader societal discrimination against older adults, especially those who are frail or cognitively impaired. It affects political and institutional priorities, including the allocation of capital, operational, and research funding in more and less subtle ways. As such, it presents an obstacle to GEM in general, and education in particular, although the astonishing growth of GEM and the career success of its proponents show that ageism can be overcome.

Capacity

Given finite teaching time and attention, curricular development can be a zero-sum game: if something is added, something else must be taken away. While curricular crowding can indeed pose a threat to high-quality education, it does not justify the short shrift given to GEM content. Teaching time devoted to particular populations should in principle reflect both the volume of patients seen and the difficulty involved in their management. Nothing argues more for GEM.

Not surprisingly, most residents approaching the end of their training report a low level of comfort in providing care to the older adults who comprise a large minority of the patients they see.²⁷ Because care of older adults is evolving from a novel and cutting-edge aspect of EM, there is also limited content expertise in the field in most centers. Academic EM programs may be hard pressed to identify faculty who

have mastered geriatric content and skills, let alone display the requisite passion for innovation and advocacy in GEM education.

INNOVATIONS

Geriatric EM education encourages learners to become comfortable with a different perspective on illness, health, and the balance of benefits and harms of treatment, and to pivot to and from that perspective in a busy, high-acuity environment. Existing primary interventional studies provide promising insights to guide the development of initiatives aimed at enhancing GEM education.

Leverage Social Learning

Care of older patients—particularly those who are frail or vulnerable—involves engaging with GEM issues such as atypical presentations and management complexities and their attendant ethical and psychosocial implications. As such, the most successful initiatives in GEM education tend to involve social (interactive, small-group) learning, where knowledge is mutually constructed.

Potter and colleagues²⁸ reviewed initiatives to enhance integration of geriatrics content into the curricula in 29 PGME programs from 10 different medical specialties. They found that the most successful efforts involved a strong emphasis on the relevance of geriatrics education, the use of team-based learning, and awareness of social care resources.

In an intervention specific to GEM, Shah and colleagues²⁹ exposed medical students to a small-group didactic session and then assessed their application of geriatrics concepts and skills to the evaluation of medical and psychosocial issues for three older adult ED patients. They found that the session enhanced students’ appreciation for the importance of psychosocial considerations in care of older adults.

Finally, there is a wide and growing body of open access GEM education materials, including the website Geri-EM.com, which offers a series of e-learning modules approved for Continuing Medical Education credit by both the American Medical Association and the Royal College of Physicians and Surgeons of Canada.³⁰

Focus on Practical Problem Solving

Several successful interventions involve simulated encounters centered on common geriatric

presentations, such as weakness and falls, that many learners and practitioners find daunting and frustrating. Prendergast and colleagues³¹ implemented a multi-modal intervention which included didactic lectures, journal clubs, interactive Q&A sessions, standardized patient encounters, oral board cases, and online educational resources. This enhanced residents' comfort with taking a history from older patients, although it did not produce a statistically significant shift in attitudes about care of older adults.

Biese and colleagues³² studied a 1-year GEM curriculum consisting of six lectures and seven high-fidelity simulations, incorporated into a preexisting EM residency didactics schedule. The intervention demonstrated improvements in knowledge and decision making.

High-fidelity simulations provide a mechanism of small-group interactive learning that can address the complexity of older adult patients better than an approach of teaching focused on single organ systems. Simulation can also incorporate interprofessional interactions and involve students from other disciplines, such as nursing and social work.^{33,34}

Wadman and colleagues³⁵ demonstrated the benefit of structuring education around GEM principles such as complexity and the tendency toward atypical presentations. They examined the effect of three 1-hour faculty presentations, each of which addressed a chief complaint deemed to be both high acuity and high frequency among older ED patients: falls, atypical abdominal pain, and weakness. The method involved five pre- and five post-intervention chart reviews for each of the 18 resident participants. The intervention yielded an improvement in its primary outcome of the quality of resident documentation of the approach to the care of elderly patients.

Use Rigorous and Validated Forms of Evaluation

There is an urgent need to develop reliable and reproducible GEM education strategies. One of the most methodologically rigorous studies was conducted by Hogan and colleagues.³⁶ An expert panel of eight emergency physicians from five institutions, led by a test item writer trainer from the National Board of Medical Examiners, developed a 29-question didactic test. The test was administered before and after a 1-hour GEM-focused lecture delivered at six EM residencies. The intervention improved test scores at every resident training level. The degree of improvement increased by year of training and was statistically

Table 3
Topics of GEM Abstracts Presented at SAEM 2018.³⁷

Topic	Number of Abstracts (Abstracts May Address Multiple Topics)
<i>Pain</i>	6
<i>Community paramedicine</i>	5
<i>ED administration</i>	4
<i>Interdisciplinary collaboration</i>	3
<i>Oncology</i>	3
<i>Transitions of care</i>	3
Caregivers	2
Cost	2
Delirium	2
Mental health	2
Substance use	2
Syncope	2
Cardiology	1
Dementia	1
Elder abuse	1
Falls	1
Frailty	1
HIV	1
Nutrition	1
Orthopedics	1
Palliative medicine	1
Sepsis	1
Telemedicine	1

GEM = geriatric emergency medicine.

significant at four of the six residency programs. The study further demonstrates how rigorously designed training may improve GEM competency in PGME trainees.

Insights Offered by Research Presented at the SAEM ASM

The core content and objectives of GEM education must continue to be guided by the growing body of evidence-based research. Forty-four abstracts focused on care of older ED patients were presented at the 2018 SAEM ASM.³⁷ Collectively, they provide a high-level view of the direction of GEM and suggest which topics and skills require reinforcement at both the PGME and UGME levels. Table 3 summarizes the major topic areas addressed by the abstracts. Table 4 presents their key findings.

Pain in older adults was the most commonly addressed GEM topic. Although it is the most commonly reported ED symptom across all age groups, pain remains undertreated in older adults.^{38–40} Multiple abstracts expanded on this theme by demonstrating

Table 4
GEM Abstracts Presented at SAEM 2018³⁷

Abstract	Authors	Title	Key Finding(s)
19	Newgard C, Lin A, Yanez D, et al.	Denver Emergency Department Trauma Organ Failure Score Outperforms Traditional Trauma Prediction Tools for In-Hospital Mortality	Injury requiring 911 services is a sentinel event associated with increased 12-month mortality among older adults discharged from the ED. The role and design of trauma systems will need to adapt to meet the needs of this population.
32	White J, Chang AM, Hollander JE, et al.	QTc Prolongation is Associated with Serious Outcomes in Older Adults With Syncope	In a cohort of elderly patients presenting to the ED with syncope, increased QTc interval was predictive of increasing 30-day adverse outcomes and arrhythmias.
87	Kent TJ, Lesser A, Howard J, et al.	30-Day Emergency Department Revisit Rates Among Medicare Beneficiaries With Dementia	Documentation of dementia at an index ED visit significantly predicts 30-day ED visits. Opportunities to more effectively transition persons with dementia from ED to community should be explored.
88	Motov S, Mann S, Yetter E, et al.	Low-Dose Ketamine vs Morphine for Moderate to Severe Pain in the Emergency Department Geriatric Population: A Prospective, Randomized, Double-Blind Study	Low-dose IV ketamine is an effective alternative to morphine for the treatment of acute pain in older ED patients.
101	Wardlow L, Stuck A, Crowley C, et al.	Reduced Hospital-Based Utilization Among Seniors with Heart Failure	A mobile integrated health paramedic program may decrease the need of seniors with heart failure for hospital-based services.
102	Hwang U, Dresden S, Garrido M, et al.	Geriatric Emergency Department Innovations in Care Through Workforce Informatics and Structural Enhancements: Emergency Department Based Social Work Associated With Reduced Medicare Expenditures	Targeted evaluation of older ED patients by ED social workers is associated with reduced Medicare expenditures and may be a cost-saving intervention in the care of older ED patients.
103	Carman A, Peck T, Mu XS, et al.	Emergency Telemedicine Bundled With Embedded Staff Reduces Hospitalizations From Skilled Nursing Facilities	An emergency telemedicine service linking skilled nursing facilities with ED physicians reduced ED transfers and hospital admissions.
104	Vilke GM, Brennan JJ, Chan TC, et al.	Emergency Department Utilization Three Days Prior to a Septicemia Diagnosis Among Geriatric Patients	4% of older ED patients diagnosed with septicemia had visited an ED within the previous 3 days.
105	Solie C, Bobb MR, Harland KK, et al.	Hand Grip Strength Is Not Predictive of Future Fall Risk	Older ED patients' grip strength is not predictive of future ED visits.
106	Dresden S, Linquist L, Courtney DM	Geriatric Emergency Department Assessments and Association With Hospitalization	Geriatric assessments by ED nurses successfully identify seniors at high risk of hospitalization.
119	Daoust R, Paquet J, Lee J, et al.	Relationship Between Pain, Opioid Treatment, and Delirium in Emergency Department Elderly Patients	Severe pain, not administration of opioids, is associated with the development of delirium in older ED patients.
120	Platts-Mills TF, Dayaa JA, Reeve BB, et al.	Development of the Emergency Department Senior Abuse Identification Tool	A brief ED elder abuse screening tool is reliable and accurate.
121	Dresden S, Hwang U, Rosenberg M, et al.	Geriatric Emergency Department Innovations: The Impact of Transitional Care Nurses on 30-Day Readmissions	A transitional care nurse program decreased readmissions.
122	Solie C, Bobb MR, Harland KK, et al.	Validation of Australian Fall Risk Tool in American Emergency Department	A fall risk screening tool is sensitive but not specific for predicting 5-month fall risk after leaving ED.
123	Neher HR, Vargas-Torres C, Rivera-Reyes L, et al.	Geriatric Emergency Department Innovations: Impact on Patient Experience	Dedicated geriatric ED spaces did not improve patient experiences.
124	Caterino J, Klotz A, Venkat A, et al.	Older Adults With Active Cancer in the Emergency Department: A Multicenter Study of the Comprehensive ONCologic Emergencies Research Network	Older ED patients with cancer are less likely to complain of pain than their younger counterparts.
126	Chang A, Bijur P, Campbell C, et al.	Intravenous Acetaminophen as an Adjunctive Analgesic Added to Intravenous Opioids in Older Emergency Department Patients	Addition of IV acetaminophen to a control regimen of IV hydromorphone did not produce better analgesia in a cohort of older ED patients.

(Continued)

Table 4 (continued)

Abstract	Authors	Title	Key Finding(s)
135	Holt B, Perkins R, Carlson M, et al.	Observation Unit Utilization Among Geriatric Patients With Chest Pain	Observation unit placement may help avoid admission in older ED patients with low-risk chest pain.
161	Castillo EM, Kreshak AA, Tolia VM, et al.	Throughput Before and After a Geriatric Emergency Department Implementation	Implementation of a geriatric ED significantly increased older adults' length of stay.
325	Castillo EM, Vuong CL, Vilke GM, et al.	30-Day Readmissions Among Elderly Patients Discharged With an Acute Myocardial Infarction	Comorbidity, substance use, and mental health issue significantly predict readmission in older adults discharged from the ED after an acute myocardial infarction.
326	Huded J, Maloney G, Lightford K, et al.	Caregiver Burden Screening by Former Military Medics in the Emergency Department Setting	Burden in caregivers of older adults can be assessed in the ED. Care recipients' delirium and functional impairment confer a high risk of caregiver burden.
327	Jones JS, Michel K, Cook A, et al.	Suicidal Ideation in Older Adults: Psychosocial Risk Factors and Precipitants	Caretaking issues are the most common precipitant of suicidal ideation in older ED patients, followed by recent bereavement and substance use.
328	Coyne CJ, Brennan JJ, Castillo EM, et al.	Cancer-Related Emergency Department Visits in the Elderly: Comparing Characteristics and Outcomes	In older cancer patients attending the ED, acute myeloid leukemia is the condition with the highest propensity to produce bounceback ED visits.
329	Graff D, Dabbagh F, France J, et al.	Thiamine Deficiency is Common Among Emergency Department Oncology Patients	Thiamine deficiency is common among older ED patients with cancer.
330	Gettel C, Merchant RC, Li Y, et al.	Does Completeness of Nursing Home Transfer Documentation Impact Emergency Department Admission?	More complete nursing home transfer documentation is associated with higher likelihood of hospital admission in older ED patients.
343	Chang AM, Weiss R, Adler DH, et al.	Recurrent Syncope Does Not Predict Adverse Events in Older Adults	A history of recurrent syncope does not predict 30-day adverse events in older ED patients.
344	Probst M, Gibson T, Weiss R, et al.	Predictors of Significant Echocardiography Findings in Older Adults With Syncope	A simple risk-stratification tool can help determine which older adults attending the ED with syncope are at very low risk of having a significant transthoracic echocardiogram finding.
346	Baugh CW, Sun B	Utility of Diagnostic Testing in Older Patients With Syncope in the Emergency Department	The proportion and cost of abnormal results in common tests for evaluating syncope in older ED patients is highly variable. Tests should be more carefully selected based on history, yield, and cost.
395	Shaver E, Tadros A, Sharon M, et al.	Hospitalizations of Older Patients With Human Immunodeficiency Virus in the United States: An Update	Older adults with HIV have similar lengths of stay compared to younger patients, but accrue significantly higher hospital charges.
472	Milzman D, Murphy J, Floyd R, et al.	Ankle Fractures: Utility of Ottawa Ankle Rules and Clinical Practice	Older ED patients who satisfy Ottawa Ankle Rules are more likely to actually have a fracture than younger patients.
519	Jones JS, TenBrink W, Grier C, et al.	Resource Utilization Among Elderly Emergency Department Patients With Alcohol Use Disorders	Older adults attending the ED with alcohol use disorder frequently present atypically, and their signs and symptoms may be masked by comorbid illness.
521	Jones JS, Brown A, Halasa R, et al.	Prescription Drug Assistance for Elderly Patients in the Emergency Department	Round the clock social worker presence in the ED helped older patients cope with unexpected medication expenses.
523	Pepe PE, Antevy PM, Schepke KA, et al.	Reducing 9-1-1 System Overutilization Through a Targeted Community Paramedic Hospice Referral Program	A paramedicine home visit program for older adults significantly reduced EMS utilization.
525	Ulintz AJ, Podolsky S, Bautista J, et al.	Community Paramedics Reduce Time-To-Visit and Increase Physician Productivity	A community paramedicine home visit program significantly decreased ED wait times and increased ED physician productivity.

(Continued)

Table 4 (continued)

Abstract	Authors	Title	Key Finding(s)
546	Theus M, Rodriguez R, Graterol J, et al.	Yield for Clinically-Significant Injury of Head and Cervical Spine on Computed Tomography in Trauma Subpopulations	Older adults have a higher likelihood of clinically significant head and neck injury.
571	Sheikh S, Booth-Norse A, Kalynych C, et al.	Pain Score and Medication Patterns in Older-Adult Emergency Department Revisits for Pain	Less than half of older ED patients discharged with a pain medication prescription achieved a minimum clinically significant difference in pain score.
573	Sheikh S, Booth-Norse A, Kalynych C, et al.	Characterizing Pain's Impact on Emergency Department Revisits: An Exploratory Study	More than half of older adults' return ED visits are due to postdischarge pain.
577	Hartka TR	Analysis of Factors Related to Fast Track Triage Errors in the Emergency Department	Age is significantly associated with undertriage (underestimation of clinical acuity at triage), which is in turn associated with decreased efficiency of an ED fast track unit.
698	Ulintz AJ, Podolsky S, Bautista J, et al.	Common Chief Complaints and Final Diagnoses for a Community Paramedicine Pilot Program	Community paramedicine training should be expanded to include certain disease states (urinary tract infections, wound care) that are common in older adults following ED discharge.
742	Bright L	Screening for Palliative Care Patients in the Emergency Department: A Missed Opportunity?	Only one-third of patients of all ages who would have met criteria for a palliative care consult on the basis of chart review actually received one.

GEM = geriatric emergency medicine.

that postdischarge pain accounts for over 50% of ED revisits by older adults. Safe and effective pain management for older adults in the ED should be reinforced as a key objective of EM training.

Community paramedicine represents a promising means of aligning acute and preventive care. Since emergency physicians collaborate with EMS and advise and train paramedics, EM education should include these new models of care and instruct trainees to effectively collaborate within them. Interdisciplinary collaboration in general is an essential skill for care of older ED patients. Ensuring safe transitions of care between the ED, the home, and skilled nursing facilities also emerged as an important core EM skill.

Several abstracts reinforced the importance of detecting and managing substance misuse and mental health concerns in older adults, both of which may present atypically and have more devastating consequences than in younger patients. Individual abstracts focused on chest pain and syncope showed the value of good resource stewardship and careful choice of investigations in older adults.

One abstract with particular relevance to older adults revealed that palliative medicine consultations are underused in the ED, suggesting that greater recognition of and comfort with palliative issues and goals of care are core EM skills. Since primary palliative medicine skills are intimately linked to the ability to provide goal-concordant care to seriously ill older adults, Grudzen

and colleagues⁴¹ developed EM Talk, a program to give emergency physicians the ability to empathically deliver serious news and to discuss goals of care. Further research is needed to better understand how best to train the next generation of ED clinicians in primary care palliative medicine skills and knowledge.

Finally, a single strong theme reflected in much of the GEM research presented at SAEM is that new models of care and collaboration are essential to provide safe and effective care for older ED patients. If EM physicians are to be agents, not just objects, of the inevitable transformations of EM resulting from an aging population, it is essential that future members of the specialty are educated to be innovators and change leaders.

RECOMMENDATIONS

Emergency medicine education must evolve to reflect both the demographic reality of an aging population and the growing body of expert- and evidence-based knowledge in GEM. This White Paper offers the following recommendations. While they are organized by the level at which they should be considered, most have broad applicability to every educational context.

Universal

1. At every level of EM education, GEM should be explicitly recognized as a core domain of EM expertise, with educational priority equal in

importance to pediatrics, resuscitation, trauma, and other classically defined domains of EM expertise.

2. The Model of EM and Licentiate of the Medical Council of Canada should incorporate GEM principles, skills, and knowledge in their next revisions.
3. EM education should incorporate the existing rigorously developed GEM educational competencies in the education and evaluation of trainees.
4. EM education should routinely present its learners with key developments in the rapidly growing body of GEM evidence and emerging topics in the field, including pain management, community paramedicine, substance misuse and mental health in older adults, and palliative medicine.

Accrediting and Licensing Bodies

5. EM board certification and licensing examinations should increase the proportion of GEM content to more accurately reflect the volumes of patients encountered, and specialized knowledge and skills required, in the practice of the specialty.

Academic Institutions

6. Departments and faculties should support and encourage clinician-educators and researchers to include GEM in their portfolios and facilitate their learning and networking in the field.

UGME and PGME Programs

7. Programs should make use of social learning and practical problem solving to teach GEM topics with complex psychosocial overlays, such as coordination of care for complex medical conditions, care transitions, disposition planning, and palliative care.
8. Programs should employ high-fidelity simulations and small-group learning experiences to allow learners to explore the complexities of caring for older adults.
9. Programs should reinforce that prevention of iatrogenic harm to older adults is part of the core responsibilities of EM physicians in their capacities as ED leaders.

Individual Educators

10. Educators should emphasize a whole-person, multisystem approach to complex presentations when addressing care of older adults.
11. Educators should be attentive to ageist beliefs and language and encourage and reward positive and compassionate attitudes toward care of older adults.

CONCLUSION

The rapidly growing cohort of older adults is often described as a “tsunami.” This metaphor wrongly suggests that the phenomenon is unforeseen and will cause destruction. In fact, the necessary evidence to turn this demographic shift into a positive change exists and is expanding. GEM provides the opportunity to expand EM physicians’ scope of practice and provide superior care to an entire subpopulation of vulnerable and often neglected patients. This has always been a core value of EM. It is now time to embrace GEM as a core domain of expertise in EM education so we may appropriately care for the older adults who need our help. The AGEM is proud to share its recommendations and to collaborate with educators and system leaders at every level.

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