CHAPTER 1
Introduction to geriatric emergency medicine

Demographics

Population ageing is an international phenomenon, in terms of both the increasing number of people reaching old age and the rise in median age. Between 2000 and 2050, the proportion of the world’s population over 60 years of age will double from about 11% to 22%, with the absolute number of people aged over 60 years expected to increase from 605 million to 2 billion over the same period (1). The number of people aged 80 years or older will have almost quadrupled to 395 million between 2000 and 2050 (1) (Figures 1.1 and 1.2). An ageing population brings potential benefits but also imposes particular challenges, particularly a growing demand for health and social care services. Whilst many people are staying healthy and active into old age, the number of older people who are reliant on care or have multiple health problems is increasing.

Over 65% of patients admitted to hospital are over 65 years old in the United Kingdom (UK) and many have complex medical conditions (2). In the United States (US), 19.6 million emergency department visits were made by patients aged over 65 in 2009–2010 (3). Those aged 65 years and older are twice as likely to be admitted than those under 65, rising to over 10 times more likely in those aged 85 and above (4).

Emergency department attendance as an older patient is associated with adverse outcomes, including an increased rate of subsequent (separate) hospitalisation, increased re-attendance to the ED, increased rate of functional decline and reduced capacity for independent living (5).

KEY POINT: The beginning of this potential cascade of adverse events is at the front door of the emergency department, where a rushed or inadequate assessment resulting in hastened discharge or inappropriate disposition places complex older patients in a vulnerable position.

Emergency presentations

Illnesses in the older patient presenting to the ED are more likely to be of a higher acuity compared to younger patients. They are more likely to arrive by ambulance, they are more likely to be acutely unwell even when they appear stable on initial evaluation, and they are more likely to require immediate critical care.
Figure 1.1 Projections of the population by age and sex for the United States: 2010–2050 (NP2008-T12), Population Division, US Census Bureau; Release Date: August 14, 2008.
Older patients often present with non-specific problems including the classic ‘geriatric giants’: falls, delirium, immobility and incontinence. These presenting complaints are often representative of multi-factorial disorders including underlying illness and comorbidity that require consideration of a broad differential; the assessment of these older patients requires skilful history and examination.

**KEY POINT:** Older patients with decreased functional reserve have the potential to deteriorate extremely quickly when placed under physiological stress.

### Frailty at the front door

The presentation of frail patients to the ED and acute medical unit (AMU) is attracting increasing interest. These patients have previously not been a priority and have fallen through gaps in an environment designed to treat condition-specific problems rather than address the more complex issues which can present in a patient who is ‘frail’. Mortality rates of frail older patients presenting to EDs and AMUs is high and as such, this condition must be addressed by emergency physicians and acute physicians.

A large study on frail adults who were discharged from the ED showed they have a poorer 30-day outcome that non-frail patients, with between 10% and 45% (depending
on level of frailty) increased risk of hospitalisation, nursing home admission and death (6). Studies such as these make the recognition and diagnosis of frailty early in an acute illness episode imperative so that interventions can be planned and initiated.

A recent international consensus on the definition of physical frailty defines it as, ‘a medical syndrome with multiple causes and contributors that is characterised by diminished strength, endurance, and reduced physiologic function that increases an individual’s vulnerability to increased dependency and/or death’ (7).

The definitive diagnosis of frailty is usually made by a geriatrician and can be based on any number of well-validated models of frailty; two of the most well-known theoretical concepts of frailty are the frailty phenotype (Fried) (Box 1.1) and the frailty index (Rockwood).

In the ED or AMU setting, the frailty phenotype may be more appropriate as it can be applied at first contact; the frailty index is a deficit accumulation model that has many strengths but does require comprehensive medical and functional assessment before it can be applied.

Box 1.1 The frailty phenotype (8)
- Unintentional weight loss (10 lbs over past year)
- Self-reported exhaustion
- Weakness (reduced grip strength)
- Slow walking speed
- Low physical activity

No criteria = Robust
1–2 criteria = Pre-frail
3 or more criteria = Frail.

There are several rapid screening tests that are aimed at helping acute care physicians to objectively identify frail patients early in their admission and target early interventions to help prevent deterioration in health or increased dependency (Table 1.1).

Another way of identifying frail patients in the emergency or acute care setting is if they present with a classic frailty syndrome. These syndromes are falls, delirium and dementia, polypharmacy (Chapter 2), incontinence, immobility and the receipt of end of life care (10).

If a patient is identified as frail or pre-frail using a screening test on admission, then plans should be made for early comprehensive geriatric assessment (CGA) with an aim

Table 1.1 The FRAIL scale, a rapid screening tool for older patients presenting to medical services (9).

<table>
<thead>
<tr>
<th>3 or greater</th>
<th>Frailty</th>
<th>1 or 2 = Pre-frail</th>
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<tbody>
<tr>
<td>Fatigue: ‘Are you fatigued?’</td>
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<td>Resistance: ‘Cannot walk up one flight of stairs?’</td>
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<td>Aerobic: ‘Cannot walk one block?’</td>
<td></td>
<td></td>
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<tr>
<td>Illnesses: ‘Do you have more than five illnesses?’</td>
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<tr>
<td>Loss of weight: ‘Have you lost more than 5% of your body weight in the past 6 months?’</td>
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of facilitating appropriate discharge and preventing progression from pre-frail to frail. Where the service is available, such patients should also strongly be considered for referral or transfer to specialist geriatric care. Patients in earlier states of frailty may benefit more from CGA than patients who are approaching end-stage frailty (10).

**KEY POINT:** Omitting a frailty assessment in an older patient in the ED in the interests of time pressure is a false economy.

### Comprehensive geriatric assessment (CGA)

CGA is defined as ‘a multidimensional, interdisciplinary diagnostic process to determine the medical, psychological, and functional capabilities of a frail older person in order to develop a coordinated and integrated plan for treatment and long-term follow-up’ (11). CGA is carried out by a multi-disciplinary team and often utilises standardised assessment tools. CGA is a highly effective process: it leads to improved discharge rates, reduced readmissions, reduced long-term care, greater patient satisfaction and lower costs (12).

Owing to time constraints, it is not usually possible to undertake CGA in the ED. However, research has shown that it is possible to embed aspects of the CGA into the ED, thus creating an ‘Emergency Frailty Unit’ with associated improvements in patient and operational outcomes. Work in the United Kingdom has shown that embedding CGA into the ED was associated with a reduction in readmission rates from 26% to 19.9% at 90 days (13). Frailty assessment units and AMUs are increasingly utilising versions of CGA in the emergency setting (Table 1.2).

<table>
<thead>
<tr>
<th>Table 1.2</th>
<th>Components of comprehensive geriatric assessment (14).</th>
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<tr>
<td><strong>Medical</strong></td>
<td>Active medical problems</td>
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<tr>
<td></td>
<td>Comorbid conditions and disease severity</td>
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<tr>
<td></td>
<td>Medication review</td>
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<td>Nutritional status</td>
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<td><strong>Mental health</strong></td>
<td>Cognitive assessment</td>
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<td></td>
<td>Mood and anxiety</td>
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<tr>
<td><strong>Functional capacity</strong></td>
<td>Activities of daily living and instrumental activities of daily living</td>
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<td></td>
<td>Activity levels and exercise tolerance</td>
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<tr>
<td></td>
<td>Gait and balance</td>
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<tr>
<td><strong>Social circumstances</strong></td>
<td>Social support from family, neighbours or friends</td>
</tr>
<tr>
<td></td>
<td>Daytime activities and social network</td>
</tr>
<tr>
<td></td>
<td>Eligibility for care resources</td>
</tr>
<tr>
<td><strong>Environment</strong></td>
<td>Home situation, facilities and safety</td>
</tr>
<tr>
<td></td>
<td>Use of local resources and community services</td>
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<td></td>
<td>Transport facilities</td>
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Chapter 1

KEY POINT: CGA can be delivered in the ED and the limited research available has shown it is associated with reduced readmission rates.

Pathways in geriatric emergency care

Services available for older patients presenting in an emergency vary depending on geographical location. Most patients are admitted to hospital via the ED. As a zone of transition between primary and secondary care, the ED offers an ideal opportunity to identify and direct the care needs of the older adult with the support of inpatient and multidisciplinary care teams.

Unfortunately, many EDs tend to be loud, fast-paced, focused on crises and impersonal, and are thus particularly challenging environments for older patients. At least three approaches are necessary to address these challenges:

1. Creating care systems that minimize ED visits for the frailest, sickest elders.
2. Creating EDs that are ‘elder-friendly’ – more quiet, calm, and comfortable, with enhanced social services.
3. Improving the competence of all emergency personnel to deal with the special needs of older people. It is to the last approach that this book is primarily focused, but the other two approaches are at least as important.

Geriatric Emergency Medicine (GEM) is an established subspecialty of Emergency Medicine in the United States, and similar programmes are emerging in the United Kingdom. A number of hospitals have established a Geriatric ED; a clinical area alongside the main ED dedicated to providing acute care for the older person (15) (Table 1.3).

An awareness of the particular needs of the older population, and the oldest old, has resulted in the increasing development of services tailored to dealing with geriatric syndromes. These may be accessed directly by the primary care physician or via the ED. Available facilities in a growing number of centres may include:

- **Multidisciplinary teams** which may contain a physiotherapist, occupational therapy, social worker and/or community nurse. They are able to assess mobility in the ED or AMU and provide mobility aids, review social circumstances and arrange for personal care to be delivered in the patient’s home on a temporary basis if required. They can be essential in enabling safe discharge of older patients.

- **Frailty assessment units** are specific short-stay or day wards where stable patients with geriatric syndromes can undergo prompt CGA. If admission is required they can be referred on to an inpatient bed.

- **Ambulatory care pathways**: For the patient who is able to be discharged home, these offer a means of prompt follow-up and expert review. These may include rapid access falls clinics, syncope service or outpatient antibiotic therapy clinics for conditions such as cellulitis.

- **Geriatric liaison teams** may assess patients in the ED or AMUs.

The transition between care facilities (hospital to home; hospital to enhanced care facility/skilled nursing facility) is one of the most vulnerable points in a patient’s journey and is wrought with the risk of communication errors and resulting poor outcomes. A careful approach when transferring older, complex patients may mitigate this risk. Optimising transitions of care is discussed in Chapter 2.
Table 1.3 Components of an elder-friendly emergency department (16–18).

| Environmental adaptations     | Non-glare lighting
|                              | Access to visual and hearing aids (e.g. portable amplifiers), large print information, clear signage
|                              | Non-skid flooring and hand rails
|                              | Less ‘sensory chaos’: fewer beeping machines, reduced background noise
|                              | Pressure-relieving mattresses and more pillows and padding
|                              | Calmer environment with embedded culture of respectful approach to older people
| Screening and referral         | Specialist nurse involvement with the use of screening tools for geriatric syndromes such as delirium, falls, immobility and polypharmacy
|                              | Access to rapid referral for specialist clinics
|                              | Pharmacist in department for medicines reconciliation
| Improved transitions          | Links with primary care
|                              | Rapid access to social work
|                              | Multidisciplinary team based in the ED
|                              | Telephone follow-up system
|                              | Geriatric follow-up clinic
| Staff education               | Specialist training programmes for staff working in the emergency department relating to geriatric patients and their differences in the emergency setting.
|                              | ‘GEM champions’ based in the department to promote gold standard care and lead by example

References

Chapter 1