



ACUTE GERIATRICS

Frailty, thy name is...

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In order to refer a patient to an intensive care unit or acute interventional service, emergency physicians learn an important phrase early in their careers: 'but he's a good 85 year old'. An overall assessment is made of the patient's well-being, cognitive and functional independence, quality of life and rehabilitation potential, all rolled into a pithy phrase. In fact, there is growing interest and ongoing debate around the science of frailty and the determinants of biological, rather than chronological age, that help separate the 'good' from 'bad' 85 year olds.¹ Emergency physicians, at the forefront of treatment and disposition decisions, are important interpreters of this science and require a working understanding of frailty for effective geriatric emergency practice.

Can frailty be easily defined?

Before we discuss what frailty is, it is important to talk about what it is not. Multi-morbidity is not frailty.² Many older people encountered in ED practice have multiple medical problems but are not frail, and some frail people have no comorbid illness. Disability is not frailty either; for example, an amputee might be

disabled yet not frail.³ The reality is that frailty, disability and multi-morbidity can affect individuals independently or co-exist in any combination, with the relative prevalence of each syndrome varying depending on the setting of the sampled population (Fig. 1).⁴

The prevalence of frailty increases sharply with age, but it is not an inevitable consequence of ageing or ubiquitous in the very old.⁵ This is important because if, as an ED physician, you think every frail 85 year old in your resuscitation bay is a 'normal' 85 year old, you will base treatment decisions on their acute disease burden alone, without understanding the impact frailty will have on their likelihood to benefit or be harmed by treatment. The frail are much greater users of hospital services than age-matched controls, but it is still estimated that less than half of all older people in hospital are frail.⁶

Frailty is defined as a state of heightened vulnerability to functional dependence or death in response to a stressor.⁷ In other words, frail people who suffer injury or illness necessitating ED attendance have less reserve and so are less likely to recover to their premorbid level, or survive, than

the non-frail. A frail person has been likened to a complex system on the verge of failing.⁸ Frailty can be physical, cognitive and/or psychosocial, but in the present study, we refer predominantly to physical frailty, which is characterised by diminished strength and endurance manifesting as otherwise unexplained fatigue and reduction in physical activity.⁹

Can frailty be easily diagnosed and managed?

Unfortunately, frailty is a syndrome with no single cause or diagnostic approach to guide ED practitioners. There are two fundamental pathophysiological models for frailty that are debated, often fiercely, in the literature.¹⁰ The cumulative deficits model proposes that frailty is a continuum and the mathematical ratio of the number of deficits present divided by the number looked for, known as a Frailty Index.¹¹ In this model, no single feature is necessary for diagnosis, and an overall picture is built through summing deficits found on assessment. A Frailty Index should, at a minimum, include 30 variables and might have 70 variables or more. This renders it unsuitable for deriving in ED clinical practice, although if frailty was more routinely assessed in primary and aged care, it is conceivable that patients might arrive in the ED with their Frailty Index available.¹² Few studies have evaluated the Frailty Index in ED settings, but as one construct of frailty, it predicts serious adverse outcomes 30 days after discharge, but not ED returns.¹³

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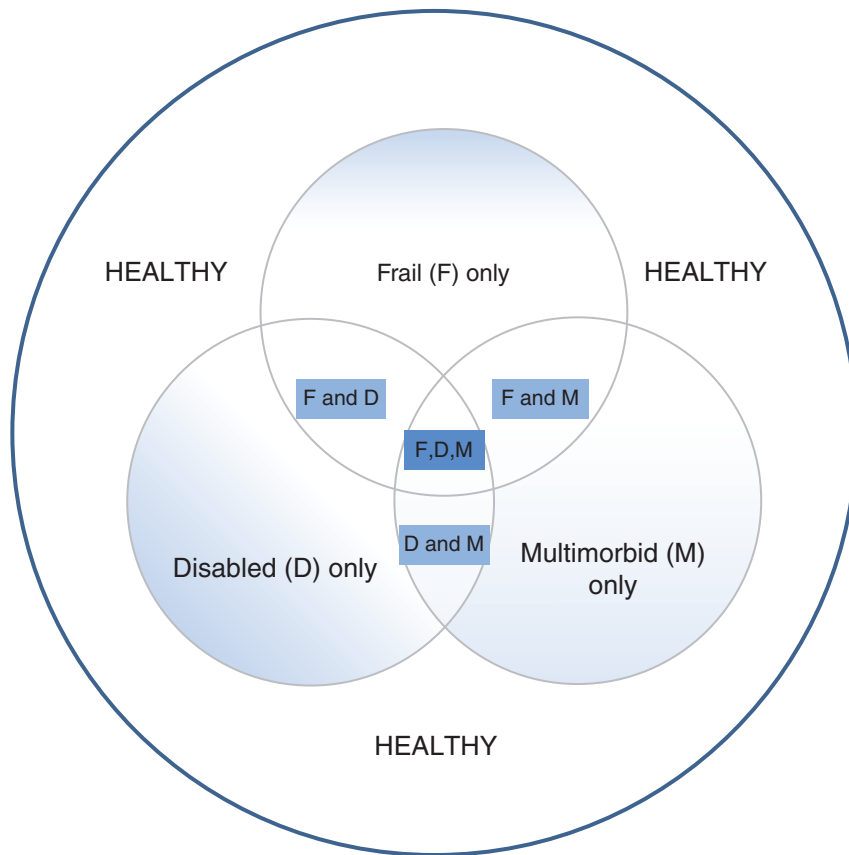


Figure 1. Conceptual model of older population. Relative size (prevalence) of each group varies depending on where the older population is sampled (community, aged care, ED, hospital inpatient).

The phenotypical model, by contrast, lists five features that are considered essential for the diagnosis of frailty: to be frail, a patient must have three or more of recent weight loss, exhaustion, low levels of physical activity, gait slowness and grip (muscle) weakness.¹⁴ This model, in other words, places the loss of physical capacity as essential to the diagnosis of frailty. The relative simplicity of the phenotypical approach is appealing, but it comes at the expense of being less predictive than the deficits model. Using these criteria, one ED-based study suggested that 20% of discharged patients over 65 years of age were frail and that self-report is inaccurate in assessing this reality.¹⁵

From an ED perspective, the current arguments are esoteric and not influential over clinical practice, although they might interest researchers looking at inflammatory responses and illness

biomarkers in older ED patients.¹⁶ Thankfully for us, in order to move the debate on from what frailty is, recent consensus conferences chose to focus on a common ground that could be agreed on by all parties.^{17,18}

Most importantly, identifying those with possible frailty is achievable through screening instruments. The Clinical Frailty Scale (CFS) is a well-known example and is based on overall impressions of the clinician, with the person characterised as very fit to vulnerable, frail and finally severely frail/terminal (Fig. 2).¹¹ Many other screening tools exist and have been recently summarised.¹⁹ These are of variable length and complexity and might use a patient self-answer questionnaire, interview, observed physical performance or any combination of these. ED researchers across the world already use instruments to identify vulnerable older adults at risk of short-term adverse events

following an episode of ED care.^{20–24} Unfortunately, none of the current constructs of frailty or individual patient predictors, like age >85 or functional dependence, alone sufficiently discriminate high- and low-risk subsets.²⁵ The challenges confronting ED frailty screening and interventions include identifying ideal processes (screening *vs* case-finding, cost-effectiveness), quality metrics (thresholds of ‘abnormal’, focus on identifying high-risk or low-risk patients), definitions (within emergency medicine and across specialties) and linkage to feasible and effective interventions as screening is only useful if it informs meaningful action.²⁶

In the community setting, frailty is manageable, if not fully preventable and reversible, through four main interventions: exercise (including reducing sedentary behaviour), high-protein caloric and Vitamin D supplementation and de-prescription of medications.²⁷ Interestingly, frailty sometimes improves without intervention, although the probability of spontaneously transitioning from frail to fit is negligible.²⁸ Over time, with frailty increasingly recognised as a major public health issue, screening at-risk populations, such as those attending general practice or receiving community aged-care services, will result in more timely intervention. Health promotion strategies might benefit the population as a whole.

Can thinking about frailty help our ED patients?

It is difficult to make didactic recommendations for ED physicians caring for the frail. Most of us practice in a fog of uncertainty, where we can conceptualise what a frail person might look like but do not formalise our assessment or use that to guide practice in a systematic, reproducible way.

Although we cannot currently recommend an ED frailty instrument of choice as none are well validated in the ED setting,^{25,29} we have referred to a range of simple screening tools that might be suitable for local practice. Adopting any one of these, such as the CFS (Fig. 2), would bring a standardised ED approach to

Clinical Frailty Scale*

	<p>1 Very Fit – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.</p>		<p>7 Severely Frail – Completely dependent for personal care, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).</p>
	<p>2 Well – People who have no active disease symptoms but are less fit than category 1. Often, they exercise or are very active occasionally, e.g. seasonally.</p>		<p>8 Very Severely Frail – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.</p>
	<p>3 Managing Well – People whose medical problems are well controlled, but are not regularly active beyond routine walking.</p>		<p>9. Terminally Ill - Approaching the end of life. This category applies to people with a life expectancy <6 months, who are not otherwise evidently frail</p>
	<p>4 Vulnerable – While not dependent on others for daily help, often symptoms limit activities. A common complaint is being “slowed up”, and/or being tired during the day.</p>		
	<p>5 Mildly Frail – These people often have more evident slowing, and need help in high order IADLs (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.</p>		
	<p>6 Moderately Frail – People need help with all outside activities and with keeping house. Inside, they often have problems with stairs and need help with bathing and might need minimal assistance (cuing, standby) with dressing.</p>		

Scoring frailty in people with dementia

The degree of frailty corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

In **moderate dementia**, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In **severe dementia**, they cannot do personal care without help.

* 1. Canadian Study on Health & Aging, Revised 2008.
2. K. Rockwood et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:489-495.

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Figure 2. Clinical Frailty Scale.

recognising frailty that could guide and improve management through screening early after ED arrival to facilitate differentiation of frail elderly and inform:

1. Early management decisions, including prognostication and resuscitative decision making. As highlighted earlier in this series, interventionist ED decisions benefit from a formal approach to defining medical futility, where measures of frailty are considered alongside illness burden to identify those approaching the end of life.³⁰ Meta-analysis shows the association between frailty and higher mortality, with age having no modifying effect on this association.³¹ More globally, as the frail elderly are the prime target population of a specialist geriatric medical and allied health service, early screening could help identify

the people likely to benefit from geriatrician input regardless of their presenting problem.³²

2. Referral to geriatric-certified pharmacists in ED to support appropriate medication prescribing.³³ In the longitudinal ESTHER study, a strong association between the number of medications being taken and frailty was found, even after adjusting for illness burden and other patient characteristics.³⁴ An ED visit by a patient for whom inappropriate polypharmacy is identified and communicated with a referral plan back to a primary care physician or geriatrician might positively impact patient outcomes.
3. Discharge risk assessment and linking ED discharge with geriatric and primary care. The majority of discharge risk stratification tools incorporate some measure of

frailty without being explicit frailty screening tools.^{25,35} Similarly, the work of multidisciplinary teams in ED in detecting people ‘at risk’ at discharge usually incorporates a global clinical assessment of frailty.³⁶ The difficulty we face is that the severely frail are at a greatest risk of adverse outcomes post-discharge, but there is a tipping point at which restorative care is no longer an option, and the patient is unlikely to benefit from hospitalisation either – in this group, a question that might be posed is ‘Are they safe for admission?’ Specific emergency frailty units have been successfully introduced,³⁷ and improved detection of frailty should aid safe disposition decisions. It is conceivable for ED to introduce discharge actions for conditions commonly linked to frailty, such as falls.³⁸

Geriatricians embedded in the ED can improve linkages to aged care services, hospital in the home and other responsive community-based models of care.^{32,39} ED aged care advanced practice nurses, allied health professionals and pharmacists can all play a role to play in making these complex decisions and planning for home.

Finally, attendance at the ED is the starting point where deleterious effects of hospitalisation and illness, including those related to bed rest, such as loss of muscle mass and strength, begins.⁴⁰ Early attention to reduced sedentary time for all older people, frail and non-frail, can conceivably begin in ED, with reduced tethering to beds by unwarranted monitoring, IV fluids and bladder catheters.

Conclusions and a way forward?

Frailty is associated with increased morbidity and mortality. The severely frail elderly (the 'bad' 85 year olds) will inevitably become an increasing proportion of ED work. Although there are large evidence gaps, a do-nothing approach while waiting for the evidence base to build is likely to result in unnecessary and preventable harms. We therefore recommend that ED adopt

1. A standardised approach to identifying frailty through use of a locally appropriate screening tool and/or clinician training for gestalt assessment. The website <http://frailty.net> offers abundant resources to consider.
2. A guideline, developed jointly with geriatrician, intensive care, pharmacy and consumer representatives, to identify approaches for the severely and terminally frail that can be offered to individual patients and their carers.

Competing interests

None declared.

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