Identifying Frailty in the Emergency Department

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Background

3-month incidence of functional decline 12.1%

Feasibility issues to be addressed

UK: 20.8% >65 in 2016/2017

Recommended implementation of admission avoidance services and dedicated tailored care of the oldest old in emergency settings (Kenny & McGarrigle, 2017)

ED attendance in Ireland

<table>
<thead>
<tr>
<th>AGE GROUP</th>
<th>NO. OF ATTENDANCES</th>
<th>% OF ED ATTENDANCES</th>
<th>% ADMITTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Ages</td>
<td>986,237</td>
<td>100</td>
<td>20</td>
</tr>
<tr>
<td>&lt;15</td>
<td>50,436</td>
<td>50</td>
<td>10</td>
</tr>
<tr>
<td>15-64</td>
<td>103,437</td>
<td>10</td>
<td>45</td>
</tr>
<tr>
<td>65+</td>
<td>45,721</td>
<td>5</td>
<td>29</td>
</tr>
</tbody>
</table>

Source: Burke Memorials Unit, Multi Service Scheme

- Ireland: 21% 65-84, 5% ≥85
- UK: 20.8% >65 in 2016/2017
- Canada 12-24% of ED attendance ≥65

Older People with Frailty in ED

- Older people with Frailty: 5-10% of all ED attendees (Ferguson et al. 2010)
- Need to consider Frailty along with presenting complaint (Pentet et al. 2018)
- No frailty measure validated for widespread use in ED (Apostolo et al. 2017)
- How do we identify those who need CGA?

Systematic Review

- 4 cohort studies
- 4 tools – Clinical Frailty Scale, Deficit Accumulation Index, Identification of Seniors at Risk and Study of Osteoporotic Fracture Frailty Index
- Frailty predicts risk of admission, mortality, LOS but not 30-day return to ED
- Recommend RCTs to compare with usual methods of care

- Prospective cohort study in Canadian EDs
- 1,072 aged 65+ dependent ADLs, minor injury
- 3-month incidence of functional decline 12.1%
- Measuring frailty may enhance current risk screening for functional decline
- Feasibility issues to be addressed
**Reviews of Frailty Tools**

Which frailty scale for patients admitted via Emergency Department? A cohort study

- **Prospective study**
- **Adults ≥65 admitted +/- spent 1 night in ED**
- **Frid, GFS, SUNB**
- **899 adults**
- Vastly different Frailty Prevalence but predictive discrimination equivalent
- **CFS more practical**

Predicting risk and outcomes for frail older adults: an umbrella review of frailty screening tools

- Five reviews with 227,381 participants
- Frailty Index and Gait speed emerged as most useful in routine care & community
- No suitable tool for ED was identified

**Systematic review of Frailty Identification (Elliott et al, 2017)**

- 1872 titles, 1827 excluded, 45 papers full-text review, 4 contained data on feasibility / clinical acceptability
- 9 tools used in 3 countries
- Tools took 1 – 10 minutes to complete
- None able to be used in more than 52% of all older people potentially eligible
- Additional work required to appreciate how tools are used, by whom & when in order to ensure acceptability

**Feasibility study (Elliott et al 2017)**

- One large ED, 43% of total ED workforce
- Primary outcome likelihood of future use
- Ideal characteristics brevity, simplicity, multi-dimensionality
- Compared ISAR, CFS, PRISMA-7 & Silver code
- 75% of staff would use at least one of the tools again

**Feasibility**

Identifying frailty in the Emergency Department—feasibility study

**Frailty / Risk stratification tools**

<table>
<thead>
<tr>
<th>Frailty Index</th>
<th>SUNB</th>
<th>ISAR</th>
<th>CFS</th>
<th>PRISMA-7</th>
<th>Silver code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 – 1.5</td>
<td>≥15%</td>
<td>≥20%</td>
<td>≥10%</td>
<td>≥15%</td>
<td>≥15%</td>
</tr>
</tbody>
</table>

Table 1. Details of the frailty/risk stratification tools shown for wording:

- **Frailty Index**: 1.0 – 1.5
- **SUNB**: ≥15%
- **ISAR**: ≥20%
- **CFS**: ≥10%
- **PRISMA-7**: ≥15%
- **Silver code**: ≥15%

Frailty Index too broad
In ED setting where probabilities are lower overall compared to inpatient settings

Silver code adapted to US setting
Simple performance measures?

- Hand Grip strength
- Walking speed
- Timed-up and Go

- BUT do measures reflect a limitation imposed by acute illness or frailty? (Stiffler et al, 2013)

Hand Grip

- Predictor of all-cause mortality
- Predictive validity for decline in cognition, mobility, functional status
- Associated with Frailty

Walking speed (Middleton et al, 2015)

- Simple indicator of functional capacity and general health
- Predictive of:
  - Functional dependence
  - Frailty
  - Mobility disability
  - Cognitive decline
  - Falls
  - Response to Rehabilitation
  - Hospitalization
  - Cardio-vascular related events & mortality
  - All cause mortality
- Timed central straight path 5-10m, 2.5m acceleration


Frailty & gait speed

- Study of 1327 people >65, frailty in 10.5%, walking speed >0.9m/s ruled out frailty (Castell et al, 2013)
- Walking speed <0.8m/sec is a simple approach to diagnosing frailty in primary care
- In ED, patients with gait speed <1.0m/s identified as ‘high risk’ for an adverse incident (Tucker et al, 2016)

Timed Up and Go

- TUG most widely used, not recommended (Eagles et al, 2018)
- Elliott et al (2017) do not recommend physical measures eg. TUG/hand-held dynamometry due to feasibility
Re-visiting CGA at SJH ED

- Cross-sectional study
- Think Frailty & CFS
- Gait speed
- TUG
- Functional mobility Ax
- Grip strength
- Calf circumference

101 participants

- Frailty (CF5≥5) 35%
- 52% used gait aid
- ‘Frail’ more likely to be female (p.036), using a walking aid (p.001) and to have had a fall within the last 6 months (p.007).
- Frailty not significantly associated with hospital admission, grip strength or calf sarcopaenia

Recommendations (Theou et al, 2018)

- Older person should have interdisciplinary assessment in ED to identify frailty
- Review medications, screen for geriatric syndromes, care plan addressing needs including patient goals & preferences
- Follows the patient: beyond the ED

References

- HeathcareManagement