Frailty: A Perspective from an Acute Physician (who is a bit of a Geriatrician)

Dr Steve W Parry
Senior Lecturer, Institute of Cellular Medicine, Newcastle University
Theme Lead Ageing and Long Term Conditions, Newcastle University Institute for Ageing
Consultant Acute Physician and Geriatrician, Newcastle Hospitals Trust
Clinical Director for Older People, Newcastle Gateshead Clinical Commissioning Group
The Frailty Industry: Too Much Too Soon?

Steve Parry works in acute medicine and older people’s medicine. He has a special interest in investigation and treatment of falls and blackouts in adult patients of all ages. He is BGS Vice President – Academic and Research.

Fashions come and go, in clothing, news and even movie genres. Medicine, including geriatric medicine, is no exception. When I was a trainee, falls and syncope was the next big thing, pursued with huge enthusiasm by a few who became the many. But when does a well-meaning medical fashion become a potentially destructive fad?
Frailty

• What is it?
• How do you recognise it?
• How should you manage it?
• What should you do? A pragmatic approach to acute frailty
What is it?
Definition

• “A clinically recognizable state of increased vulnerability resulting from aging-associated decline in reserve and function across multiple physiologic systems such that the ability to cope with everyday or acute stressors is comprised”

• A state associated with low energy, slow walking speed, poor strength
  – Higher risk of acute hospital admission
  – Care home admission
  – Death
Response to an adverse event in a non-frail vs frail older person (Clegg et al Lancet 2013)
Prevalence

![Prevalence Bar Chart]

- **60-69** (n=2887)
- **70-79** (n=1867)
- **80-89** (n=632)
- **>=90** (n=64)

<table>
<thead>
<tr>
<th>Age group</th>
<th>Prevalence of Frailty (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-69</td>
<td>5%</td>
</tr>
<tr>
<td>70-79</td>
<td>10%</td>
</tr>
<tr>
<td>80-89</td>
<td>30%</td>
</tr>
<tr>
<td>&gt;=90</td>
<td>60%</td>
</tr>
</tbody>
</table>
How do you recognise it?
Tools of the trade

• Gait speed <0.8m/s (or >5 sec to walk 4 metres)
• Timed-up-and-go test (>10 seconds to stand from a chair, walk 3 metres, turn round and sit down again)
• Grip strength
• Edmonton frail scale
• PRISMA 7 questionnaire
• Clinical frailty scale
• [Hospital Frailty Risk Score]
Clinical Frailty Scale

1 Very Fit – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.

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.

3 Managing Well – People whose medical problems are well controlled, but are not regularly active beyond routine walking.

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.

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.

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.

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).

8 Very Severely Frail – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.

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.

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.
How should you manage it?
What is the management of frailty?

But is CGA practicable for all frail elders on the MAU?
Comprehensive Geriatric Assessment

- Multidisciplinary assessment of physical, psychosocial, functional and environmental factors
- Patient receiving CGA 12 times more likely to be alive and living at home 6 months after intervention NNT 24 (underpowered analysis)
- BUT no evidence of cost effectiveness, may increase costs (Ellis et al, CGA for Older Adults Admitted to Hospital, Cochrane Syst Rev 2017)
- The relationship between frailty and CGA requires further clarification (Parker et al, Frailty Umbrella Review, Age Ageing 2018)
## CGA components

Ellis G et al Cochrane Review of CGA 2017

<table>
<thead>
<tr>
<th>Teams</th>
<th>Comprehensive Assessment</th>
<th>MGT 2.1 swallow</th>
<th>Goal Setting</th>
<th>Assessment foods</th>
<th>Protocols</th>
<th>Wound Environment</th>
<th>Off Follow Up</th>
<th>Consultant Geriatrician</th>
<th>Geriatric Specialist Trainee</th>
<th>Trained Nursing</th>
<th>Social Work</th>
<th>Physiotherapy</th>
<th>Occupational Therapy</th>
<th>Dietetics</th>
<th>Pharmacy</th>
<th>Speech and language</th>
<th>Audiology</th>
<th>Dentistry</th>
<th>Pathology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edmonds 2013</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Hogan 1987</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Kircher 2007</td>
<td>●</td>
<td>○</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>○</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>MceVey 1989</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Naughton 1994</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Reuben 1995</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Thomas 1993</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Winograd 1993</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Applegate 1990</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Asplund 2000</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Barnes 2012</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Boustani 2012</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Cohen 2002</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Collard 1985</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Counsell 2000</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Fretwell 1990</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Goldberg 2013</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Harris 1991</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Kay 1992</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Landefeld 1995</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Nikolaus 1999</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Rubenstein 1984</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Saltvedt 2002</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Somme 2010</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Shamian 1984</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Wald 2011</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>White 1994</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>
CGA components
Ellis G et al Cochrane
Review of CGA 2017

- Comprehensive Assessment
- MDT ≥ 1 weekly
- Goal Setting
- Assessment Tools
- Protocols
- Ward Environment
- OP Follow UP

- Consultant geriatrician
- Geriatric Specialist Trainee
- Trained Nursing
- Social Work
- Physiotherapy
- Occupational Therapy
- Dietetics
- Pharmacy
- Speech and Language
- Audiology
- Dentistry
- Psychology
<table>
<thead>
<tr>
<th>CGA components</th>
<th>Ellis G et al</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cochrane Review of CGA</td>
<td>2017</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Trial</th>
<th>Clinical leadership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applegate 1990</td>
<td>Structured assessment</td>
</tr>
<tr>
<td>White 1994</td>
<td>Multidisciplinary team meetings</td>
</tr>
<tr>
<td>Wald 2011</td>
<td>Goal setting</td>
</tr>
<tr>
<td>Somme 2010</td>
<td>Involving patients and carers in goal setting</td>
</tr>
<tr>
<td>Thomas 1993</td>
<td>Outpatient follow-up</td>
</tr>
<tr>
<td>Saltvedt 2002</td>
<td>Ward environment</td>
</tr>
<tr>
<td>Reuben 1984</td>
<td>Adequate time</td>
</tr>
<tr>
<td>Rubenstein 1984</td>
<td>Speciality knowledge, experience, competence</td>
</tr>
<tr>
<td>Hogan 1987</td>
<td>Tailoring treatment plans to the individual</td>
</tr>
<tr>
<td>Kircher 2007</td>
<td></td>
</tr>
<tr>
<td>Edmans 2013</td>
<td></td>
</tr>
<tr>
<td>Goldberg 2013</td>
<td></td>
</tr>
<tr>
<td>Asplund 2000</td>
<td></td>
</tr>
</tbody>
</table>

Elements of CGA that trialists report are most critical to success.
What about acute frailty units?

- A controlled evaluation of CGA in the emergency department: the 'Emergency Frailty Unit' (Conroy et al Age Ageing 2014)
- Pre/post observational study
- Intervention: Geriatrician in the ED 8-6 7/7
- **All** age groups (>16 years)
  - Lower ED conversion rates
  - Lower readmission rates
  - Longer LoS and occupied bed days
  - ......But *most* marked in 85+ age group

- Sweden: Patients in an acute CGA unit were less likely to present with decline in HRQoL after 3 months (Ekerstad et al Clin Interven Aging 2016)
What about acute medical frailty units?

- Acute Medical Unit Comprehensive Geriatric Assessment Intervention Study; AMIGOS (Gladman et al HTA Library 2016)
- Interface geriatrician
- No benefits over usual care
- Not cost-effective (Tanajewski et al PLOS One 2015)
What should we do?
A pragmatic approach to acute frailty
How to add value in acute medicine: A reality check

• Older people with complex co-morbidities, polypharmacy and social circumstances have always been with us
• More than there were, and more will come
• They deserve high quality care
• £1 in every £4 spent on secondary healthcare is in this group
• Full CGA is time consuming and impractical for large numbers of older people in a busy acute setting
  – In 3 days on Newcastle ACU, 49 >50s seen, only 2 scored 1 on CFS, 76% scored 3-5, mean 4
• Pick parts of the whole that contribute to CGA with best evidence base/clinical/system-wide utility
How to add value in acute medicine: Organisation of services

- Main triumphs of the frailty movement are profile and resource
  - *Use them!*
- Recognition
- Needs rather than age based
- Organise staff and services
  - Teams dedicated to case finding and proactive care with close links to Older People’s Medicine and Community Services
- Avoidance of pyjamas and gowns, sit in chairs not lie in bed, rapid mobilisation and provision of early physiotherapy, OT, pharmacy support
- Ditch deliriumogenic environments
  - Orientation, lighting, noise, flooring, toilets and seating
- Initiate CGA
  - Documentation
- Signpost to others to complete it
Frailty syndromes not frailty units.....1
(The Silver Book 2012)

- **Falls**
  - Distinguish between syncopal (e.g. cardiac, polypharmacy), or non-syncopal (gait and balance, vision, proprioception, vestibular and environmental hazards all to be assessed).

- **Immobility**
  - ‘Off legs’ can hide many diagnoses ranging from cord compression to end-stage dementia. A comprehensive assessment is needed to focus on the urgent and important issues to be addressed.
Frailty syndromes not frailty units.....2

• **Delirium and dementia**
  - Closely inter-related but each requires clinically distinct management – collateral history is key. Detect a recent change in cognition; it is common for delirium to be super-imposed on pre-existing dementia. Delirium can be hyperactive, hypoactive or mixed

• **Polypharmacy**
  - Adverse drug events lead to increased hospital stay, morbidity and mortality. Consider a medication review focusing on identifying inappropriate prescribing, as well as drug omissions (e.g. STOPP/START). Consider also medicines reconciliation
Guides to support deprescribing

- O’Mahony et al STOPP/START criteria
  - V2 Age Ageing 2014
- www.polypharmacy.scot.nhs.uk/
- NICE 2014. Managing medicines in care homes
- https://www.york.ac.uk/media/crd/effectiveness-matters-aug-2017-polypharmacypdf
- https://www.nice.org.uk/guidance/ng56
Frailty syndromes not frailty units.....3

- **Incontinence**
  An unusual acute presentation, but a marker of frailty and a risk factor for adverse outcomes. More common is abuse of urine dipstick testing leading to erroneous diagnosis of infection, inappropriate antibiotics and increased risk of complications such as Clostridial diarrhoea.

- **End of life care**
  Mortality rates for frail older people in the year following discharge from hospital are high, which presents an ideal opportunity to consider advance care planning – at minimum DNA CPR but also Emergency Health Care Planning in tandem with carers and primary care.
Conclusion

• Recognise
  – Need, patient group, existing services

• Capitalise
  – Resources
  – Good will

• Organise
  – Staff, environment, referral pathways

• Energise
  – Non-acute colleagues, other disciplines, trust management, commissioners
Conclusion

- Frailty services not frailty units
  - NHSI mandate for acute frailty service 70hr/week
    - Metric 2: CFS 7 or above “screened for geriatric syndromes in 1hr”
    - (NHSI “Same Day Acute Frailty Services” 2018)
  - Education – all staff
  - Not restricting to the moderately and severely frail contra NHSI
  - Risk of stopping people with frailty needs getting high-quality frailty care because of being on the wrong side of an arbitrary score or age bracket
  - Signposting for onward care, including eg strength and balance training, community physiotherapy, OA Psych etc

- Help facilitate out of hospital services to complement in-patient care