Thinking Home First; Are we Failing the Frail?

Fiona Keogan
IEHG Service Improvement Lead
Compelling reasons for changing current model of care

- Changing demographic
- Increasing demand
- Patient, family and carer expectations
- Evidence that hospitalization causes harm - deconditioning, HAIs, falls...
- Current model not fit for purpose - too hospital centric/ not responsive enough
- Cost
- Over professionalisation of care - too many professions/duplication/ gaps
- Education of current graduates not in line with system requirements
- New models of care emerging

- 31% of the Irish older population aged 65 and over were robust,
- 45% were pre-frail and
- 24% were frail.
Service Improvement Approach

**Frailty Value Stream**

- **Value Stream Analysis**
  - Value Stream Analysis
  - Visioning workshop
  - Rapid Improvement Event
  - 30-60-90 day report outs

**Values & Visioning**

- Rapid Improvement Events

**Group level values and visioning events**

**Clinical Leadership**

**A3**

**What Good Looks Like**

**Masterclasses**

**Service Improvement Approach**

- **Value Stream Analysis**
- **Visioning workshop**
- **Rapid Improvement Event**
- **30-60-90 day report outs**
What Good Older Persons Care Looks Like

Healthy active ageing and supporting independence
Living well with simple or stable long-term conditions
Living well with complex comorbidities, dementia and frailty
Rapid support close to home in crisis
Good acute hospital care when (and only when) needed
Good discharge planning and post-discharge support
Good rehabilitation and re-ablement after acute illness or injury
High-quality nursing and residential care for those who truly need it
Choice, control and support towards the end of life

(King’s Fund, 2013)
Acute Frailty Network

IEHG have engaged with the AFN to develop a ‘model line’ to understand what good looks like

10 principles

1. Establish a mechanism for early identification of people with frailty
2. Put in place a multi-disciplinary response that initiates Comprehensive Geriatric Assessment (CGA) within the first hour or 14 hours if overnight
3. Set up a rapid response system for frail older people in acute care settings
4. Adopt a ‘Silver phone’ system
5. Adopt clinical professional standards to reduce unnecessary variation
6. **Strengthen links with services both inside and outside hospital**
7. Put in place appropriate education and training for key staff
8. Develop a measurement mind-set
9. Identify clinical change champions
10. Identify an Executive sponsor and underpin with a robust project management structure
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 household.

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 III – 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.

3. Dalhousie University, Halifax, Canada. Permission granted to copy for research and educational purposes only.
Safe, compassionate care for frail older people using an integrated care pathway

Case finding and assessment

<table>
<thead>
<tr>
<th>Medical</th>
<th>Mental health</th>
<th>Functional capacity</th>
<th>Social circumstances</th>
<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comorbid conditions</td>
<td>Cognition</td>
<td>ADLs</td>
<td>Informal support</td>
<td>Home comfort/facilities</td>
</tr>
<tr>
<td>Disease severity</td>
<td>Mood/anxiety</td>
<td>Gait/balance</td>
<td>Social network/activities</td>
<td>Personal safety</td>
</tr>
<tr>
<td>Medication review</td>
<td>Fears</td>
<td>Activity/exercise status</td>
<td>Eligibility for care resources</td>
<td>Use or potential use of telehealth/telecare</td>
</tr>
<tr>
<td>Nutritional status</td>
<td></td>
<td></td>
<td></td>
<td>Transport facilities</td>
</tr>
<tr>
<td>Problem list</td>
<td></td>
<td></td>
<td></td>
<td>Accessibility of local resources</td>
</tr>
</tbody>
</table>

Comprehensive geriatric assessment

Many frail older people, once identified, will require comprehensive geriatric assessment (CGA) (British Geriatrics Society, 2010). This is defined as a ‘multi-dimensional interdisciplinary diagnostic process of determining a frail older person’s medical, psychological and functional capacity to determine need and integrated plan for treatment and long-term follow-up’. CGA has a very strong evidence base and has been shown to increase patients’ likelihood of being alive and in their own homes at one year and has been associated with a potential cost reduction compared with usual care (Ellis et al, 2011). In terms of Numbers Needed to Treat (NNT), to avoid one long-term care placement, for CGA the number is 20. This is compared with NNT of 120 people who take an aspirin each day to prevent stroke.”
Comprehensive Geriatric Assessment

- Functional Impairment
- Impaired Cognition
- Chronic Disease Burden
- Nutrition
- Walking Speed
- Geriatric Syndromes

Geriatric Assessment
Evidence Based Thinking
Uses of CFS in Clinical and Disposition Decision Making

The Clinical Frailty Scale (CFS) is a quick and simple tool describing degrees of frailty based on symptoms and functional status.

<table>
<thead>
<tr>
<th>Category</th>
<th>CFS score</th>
<th>Clinical considerations</th>
<th>Disposition considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robust</td>
<td>1-3</td>
<td>Usual care pathway, including specialist care referrals if indicated</td>
<td>Driven primarily by primary presenting problem</td>
</tr>
<tr>
<td>Mild frailty</td>
<td>4-6</td>
<td>Screen for presence of geriatric syndromes, refer onwards if identified</td>
<td>Consider case management in discharge planning to reduce the risk of readmission</td>
</tr>
<tr>
<td>Moderate to severe frailty</td>
<td>7-9</td>
<td>Geriatric syndromes highly prevalent, ensure holistic care available, end-of-life scenarios common</td>
<td>Services able to deliver Comprehensive Geriatric Assessment (in hospital or at home)</td>
</tr>
</tbody>
</table>
### Why Identify Frailty?

1. It is an excellent predictor of outcome

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Outcome</th>
<th>Adjusted OR/RR/HR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiology</td>
<td>30 day mortality post ACS</td>
<td>2.17 (1.28 to 3.67)</td>
</tr>
<tr>
<td>Critical care</td>
<td>Physical recovery 12m after ICU</td>
<td>0.32 (0.19 to 0.56)</td>
</tr>
<tr>
<td>General surgery</td>
<td>Post-operative morbidity</td>
<td>2.06 (1.18 to 3.60)</td>
</tr>
<tr>
<td>General surgery</td>
<td>30 day post-operative mortality</td>
<td>4.00 (1.10 to 15.20)</td>
</tr>
<tr>
<td>Geriatric medicine</td>
<td>Inpatient delirium</td>
<td>8.50 (4.80 to 14.80)</td>
</tr>
<tr>
<td>Oncology</td>
<td>Chemotherapy intolerance</td>
<td>4.86 (2.19 to 10.78)</td>
</tr>
<tr>
<td>Primary care</td>
<td>Falls</td>
<td>1.23 (0.99 to 1.54)</td>
</tr>
<tr>
<td></td>
<td>Disability</td>
<td>1.79 (1.47 to 2.17)</td>
</tr>
<tr>
<td></td>
<td>Nursing home admission</td>
<td>2.60 (1.36 to 4.96)</td>
</tr>
<tr>
<td></td>
<td>Hospitalisation</td>
<td>1.27 (1.11 to 1.46)</td>
</tr>
<tr>
<td></td>
<td>Mortality</td>
<td>1.63 (1.27 to 2.08)</td>
</tr>
<tr>
<td>Renal medicine</td>
<td>Mortality in ESRD patients on dialysis</td>
<td>2.24 (1.60 to 3.15)</td>
</tr>
<tr>
<td>Respiratory medicine</td>
<td>90 day readmission after COPD exac</td>
<td>1.43 (1.13 to 1.80)</td>
</tr>
</tbody>
</table>
Why Identify Frailty?

2. Predicts Response to therapeutic Interventions

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive geriatric assessment of older people</td>
<td>14% reduction in nursing home admission</td>
</tr>
<tr>
<td>Comprehensive geriatric assessment of ‘frail’ older people</td>
<td>10% reduction in hospital admissions</td>
</tr>
<tr>
<td>Community-based post discharge care</td>
<td>13% reduction in nursing home admission</td>
</tr>
<tr>
<td></td>
<td>10% reduction in hospital admission</td>
</tr>
<tr>
<td>Group-based education (supported self-management)</td>
<td>40% more likely to be living at home</td>
</tr>
<tr>
<td>Falls prevention</td>
<td>8% reduction in falls</td>
</tr>
<tr>
<td>Exercise interventions</td>
<td>Improved function</td>
</tr>
</tbody>
</table>

Beswick Lancet 2008
Frailty as a Predictor of Surgical Outcomes in Older Patients

Martin A Makary, MD, MPH, FACS, Dorry L Segev, MD, PhD, FACS, Peter J Pronovost, MD, PhD, Dora Syin, MD, Karen Bandeen-Roche, PhD, Purvi Patel, MD, MPH, Ryan Takenaga, MD, Lara Devgan, MD, MPH, Christine G Holzmueller, BLA, Jing Tian, MS, Linda P Fried, MD, MPH

BACKGROUND: Preoperative risk assessment is important yet inexact in older patients because physiologic reserves are difficult to measure. Frailty is thought to estimate physiologic reserves, although its use has not been evaluated in surgical patients. We designed a study to determine if frailty predicts surgical complications and enhances current perioperative risk models.

Frailty independently predicts postoperative complications, length of stay, and discharge to a skilled or assisted-living facility in older surgical patients and enhances conventional risk models. Assessing frailty using a standardized definition can help patients and physicians make more informed decisions. (J Am Coll Surg 2010;210:901–908. © 2010 by the American College of Surgeons)

RESULTS: Preoperative frailty was associated with an increased risk for postoperative complications (intermediately frail: odds ratio [OR] 2.06; 95% CI 1.18–3.60; frail: OR 2.54; 95% CI 1.12–5.77), length of stay (intermediately frail: incidence rate ratio 1.49; 95% CI 1.24–1.80; frail: incidence rate ratio 1.69; 95% CI 1.28–2.23), and discharge to a skilled or assisted-living facility after previously living at home (intermediately frail: OR 3.16; 95% CI 1.0–9.99; frail: OR 20.48; 95% CI 5.54–75.68). Frailty improved predictive power (p < 0.01) of each risk index (ie, American Society of Anesthesiologists, Lee, and Eagle scores).

CONCLUSIONS: Frailty independently predicts postoperative complications, length of stay, and discharge to a skilled or assisted-living facility in older surgical patients and enhances conventional risk models. Assessing frailty using a standardized definition can help patients and physicians make more informed decisions. (J Am Coll Surg 2010;210:901–908. © 2010 by the American College of Surgeons)
What good looks like

Are we ‘Finding the Frail’?
What are we doing about it?
What should we be doing about it?

Which components are reversible?
CGA should be read like an ECG (Rockwood)

Is it safe to keep in hospital?

The Effect of an In-Hospital Comprehensive Geriatric Assessment on Short-Term Mortality During Orthogeriatrician Hip Fracture Program—Which Patients Benefit the Most?

Geriatric Orthopaedic Surgery & Rehabilitation;2017
1445 patients ≥75 yrs. Outcome was mortality at 1 month after hip fracture associated with receiving versus not receiving CGA. Results: Of the patients receiving CGA compared to those who did not, 8.5% versus 12.0% had died within 1 month of the hip fracture (P=.028).
Proposed Competencies in Geriatric Patient Care

**Pre-Operative**
- Atypical presentations
  - Assess risk - frailty
- Medication management
  - Complex/chronic illness
- Cognitive disorders
- Informed consent

**Operation**
- Medication management
  - Advance directives
  - Complex chronic illness

**Hospital Course**
- Medication management
- Delirium management
  - Treat chronic illness
  - Patient safety
  - Palliative care / end-of-life
  - Transitions of care

**After Discharge Care**

Risk stratifying the geriatric patient requires assessment of vulnerability unique to older adults.
Accumulation of Geriatric “Deficits”

- Normal Albumin
- Low Burden Chronic Disease
- No Geriatric Syndromes
- Normal Gait Speed

Risk Scale

- Impaired Cognition
- Functional Impairment

AVERAGE OUTCOMES

POOR OUTCOMES
Simple Signs & Tools

Timed Up-and-Go

10 feet
Frailty Identification and Outcome Post Surgery

- Clinical outcomes
  - Decreased length of stay
  - Decreased readmission rate
  - Decreased complications
  - Decreased mortality


# Geriatric Assessment and Post-Op Outcomes

<table>
<thead>
<tr>
<th>Study</th>
<th>Function</th>
<th>Cognition</th>
<th>Disease Burden</th>
<th>Nutrition</th>
<th>Walking Speed</th>
<th>Geriatric Syndrome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dasgupta et al (2009)</td>
<td>✔</td>
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<td>✔</td>
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<tr>
<td>Kristjannsson et al (2010)</td>
<td>✔</td>
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<td>Makary et al (2010)</td>
<td>✔</td>
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<td>✔</td>
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<tr>
<td>Lee et al (2010)</td>
<td>✔</td>
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<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>Saxton et al (2011)</td>
<td>✔</td>
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<td>✔</td>
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</tbody>
</table>
**Delirium**

Routine screening?

Delirium is an acute, fluctuating change in mental status, with inattention and altered levels of consciousness.

**Why is delirium important?**

- Most common post-operative complication in the elderly.
- Closely related to adverse outcomes.
- Potentially preventable, and there is room to improve treatment.

40% incidence in Hip fracture

AGS (2002) 50:850

**Risk Factors**

- Cognitive Impairment
- Sleep Deprivation
- Immobility
- Visual Impairment
- Hearing Impairment
- Dehydration

What Good Care Looks Like?

**Risk Factors:**
- Older age
- Dementia
- Functional Impairment
- Co-Morbidities
- Malnutrition

**Supportive Measures:**
- Re-Orientation
- Sleep Enhancement
- Vision/Hearing Protocol
- Remove Foley
- Medication Choices

**Screen High Risk Patients in Pre-Operative Clinic**

**Evaluation for an Identifiable Cause:**
- Electrolyte imbalance
- Hypoglycemia
- Hypoxemia
- Sepsis
- Substance Withdrawal
- Review Medications

**Identifiable Cause:**
- Treat Appropriately

**Multi-Component Treatment Plan**

**Pharmacologic Treatment:**
1. ICU
   - Haldoperidol 1-2mg IV
   - Repeat every 20 min until resolution of agitation
   - Taper over several days
2. Surgical Ward
   - Haldoperidol 1mg PO/IM/IV
   - Maintenance dose 0.25-0.5mg Q4hrs
   - Taper over several days

**OPERATION**

**POST-OP DELIRIUM**
Table 3 Frailty Index from Comprehensive Geriatric Assessment in patients with hip fracture [63]. Values are mean (SD) or proportion.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Low ( Fl \leq 0.25 )</th>
<th>Intermediate ( Fl 0.25–0.4 )</th>
<th>High ( Fl &gt; 0.4 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age; years</td>
<td>74 (12)</td>
<td>82 (10)</td>
<td>86 (9)</td>
</tr>
<tr>
<td>Length of stay; days</td>
<td>21 (17)</td>
<td>36 (23)</td>
<td>68 (39)</td>
</tr>
<tr>
<td>Discharged home within 30 day</td>
<td>80%</td>
<td>41%</td>
<td>6%</td>
</tr>
<tr>
<td>Inpatient mortality</td>
<td>0</td>
<td>5.2%</td>
<td>28.1%</td>
</tr>
</tbody>
</table>
Emergency Admissions from Home: What can we learn?

n=760

82% adm from home
22% d/c directly home

Rehab
34%

Home
22%

Nursing Home
14%

Convalescence
14%

6%
Nursing Home
(new LTC)

Died
5%

Missed opportunity for others?
Outcome?

Is there daily rehab?
Focus on frailty?
How long was LOS in NH?
At what functional status pre-adm?
How many could have gone home directly with outreach?
What was the outcome?
Conversion to LTC/ Mortality/ home/ readmission?

Missed opportunity to reverse this?
Pre-admission frailty?
Adherence to pathway standards? Time to a bed (11% in 4 hrs)/ Seen by Geriatrician? (50% not)

Who are they?
68% female
73% high functional mobility pre-admission
69% able to shop independently pre-adm
Average age 75 yrs
Median LOS 12 days
What determines ‘good’ health?

The word "health" refers to a state of complete emotional and physical well-being.

1. A meaningful purpose in life
2. A decent place to live
3. Strong human relationships

Public policy and social norms

However...

Maslow argued that safety and survival remain our primary and foundational goals— not least when our options or capacity are impaired / limited...

Health & Safety = manifestation of these goals

People readily demonstrate a willingness to sacrifice safety and sometimes survival for the sake of something beyond themselves... family, country, justice, ...regardless of age

Hierarchy of needs are individual and change over time
Thinking Home First

“Older people placed in a controlled and supervised institutional existence, a medically designed answer to unfixable problems, a life designed to be SAFE but empty of anything they care about”
I am furious because I did not expect it, thinking I had led such a healthy life. I am also furious because I am going to lose about three months of my life while I recover, before I can swim and sunbathe and do all the normal things I love doing. At my age, losing three months is like losing a whopping chunk of whatever is left to live.
Resilience in Later Life - resisting challenges and bouncing back

- Mobility/Physical
- Psychological
- Cognitive
- Social/Cultural
- Financial
- Environmental
Crowded emergency departments

- Dangerous
- Correlates with increased length of stay

Patients waiting over 12 hours for a bed have a 2.35 increase in their hospital length of stay.

Essential drugs are delayed when an emergency department is crowded

- Retrospective analysis of 694 patients with community acquired pneumonia
- Delayed delivery of antibiotics in 4 hours
- ED not crowded – 31%
- ED overcrowded – 72%

1. Means (95% CIs) of inpatient length of stay and excess* inpatient length of stay

<table>
<thead>
<tr>
<th>Emergency department length of stay</th>
<th>≤4 hours</th>
<th>4–8 hours</th>
<th>8–12 hours</th>
<th>&gt;12 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPLOS (days)†</td>
<td>3.73 (3.53–3.93)</td>
<td>5.65 (5.48–5.82)</td>
<td>6.60 (6.31–6.89)</td>
<td>7.20 (6.91–7.49)</td>
</tr>
<tr>
<td>IPLOS – SALOS* (days)†</td>
<td>0.39 (0.21–0.57)</td>
<td>1.30 (1.15–1.45)</td>
<td>1.96 (1.71–2.21)</td>
<td>2.35 (2.08–2.62)</td>
</tr>
</tbody>
</table>

* Excess inpatient length of stay is defined as inpatient length of stay exceeding the state average length of stay for the diagnosis-related group (IPLOS – SALOS). IPLOS = Inpatient length of stay. SALOS = State average inpatient length of stay (specific diagnosis-related group). ** p < 0.001 for difference, on analyses of variance (ANOVA).

• 10 days in hospital (acute or community) leads to the equivalent of 10 years ageing in the muscles of people over 80

Gill et al (2004) studied the association between bed rest and functional decline over 18 months. They found a relationship between the amount of time spent in bed rest and the magnitude of functional decline in instrumental activities of daily living, mobility, physical activity, and social activity.

Patient Stories=Culture

Fractured wrist..
Emergency admission, incontinence, agitation...
convalescence...

Constipation....
10 day admission...
Convalescence

Emergency admission from respite with UTI
? LTC on day 2

Was it reversible?
Was it preventable?

CO-DESIGN
CHANGE
IMPACT
TARGET
DISCUSS
COLLECT
## Local Metrics That Matter
The data that tells the story

<table>
<thead>
<tr>
<th>Category</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient experience</td>
<td>Support to self-manage long-term conditions (LTCs)</td>
</tr>
<tr>
<td>Patient experience</td>
<td>listening with care and concern</td>
</tr>
<tr>
<td>Harm reduction</td>
<td>Pressure ulcer incidence</td>
</tr>
<tr>
<td>Harm reduction</td>
<td>Harm from medication errors</td>
</tr>
<tr>
<td>Quality of life</td>
<td>Discharge rates to usual place of residence</td>
</tr>
<tr>
<td>Quality of life</td>
<td>Proportion of patients with fragility fractures recovering to their previous levels of mobility/walking ability at 120 days</td>
</tr>
<tr>
<td>Systems supporting older people</td>
<td>Emergency readmissions: 30 and 90 day</td>
</tr>
<tr>
<td>Systems supporting older people</td>
<td>Length of stay: key LTCs, without dementia</td>
</tr>
<tr>
<td>SUS</td>
<td>Cost of emergency readmissions in over 65s</td>
</tr>
<tr>
<td>SUS</td>
<td>Cost of excess bed days</td>
</tr>
</tbody>
</table>
Essential components of successful implementation

• Communication and education - frailty identification and management

• **Clinical leadership**

• Senior management support and engagement

• Measurement - simple, meaningful data

• Social momentum - win hearts and minds, share stories, identify and link with like-minded people

• Local ownership of improvement work

• **Frontline staff ‘safety’**

• Patient feedback and participation

• Creating shared purpose - getting others to do it because they want to

• Working as a team of teams - a system

Leaders accept responsibility not only for their individual ‘part’ of the work, but also for the collective ‘whole’

Marshall Ganz
Next Steps..

- Frailty first responders standard work and competencies
- Shared data across sites- Frailty identifier and severity, stratified problem lists, shared documentation following the person
- Shared learning and experiences across hospitals and CHOs
- Standard work for reducing LOS, long stays
- Outreach and in-reach
- Generalisation and specialisation
- End of life pathways
- Testing, testing...
- Orthopaedics??

System Changes Required
- Integrated models of funding
- Flexible workforce, across boundaries, traditional roles, 7 days
- New education and training
‘You have your way. I have my way. As for the right way, the correct way, and the only way, it does not exist.’

Friedrich Nietzsche

Thank You