Frailty: What to Measure? When to Measure? and Does It Add Any Value?

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• Data Safety Monitoring Committee: LJPC

• I am not a geriatrician – nor necessarily an expert in frailty
Objectives

1. Define and review the biologic of the concept of “frailty”

2. Understand the tools to capture frailty and identify a vulnerable population

3. Understanding the impact of frailty on outcomes after acute stress and critical illness
FRAILTY is a multi-dimensional “syndrome” or “state” related to ageing first described in elderly patients.

Characterized by:

Loss of reserve (energy, physical, cognitive, health) and the accumulation of “deficits” (individually reversible but collectively insurmountable).

Consequence:

Heightened vulnerability or “state-at-risk” to adverse outcomes.
Punished inefficiency

Excess + prolonged response: ↑ IL-6, IL-10, TNF, CRP, CXCL-10

Impaired GH (IGFs), sex hormones, DHES + ↑ cortisol

↓ stem cells, T-cell production, B-cell Ab response, phagocytic activity

Implications for ICU settings:
- Response the therapy
- Vulnerability to complications
- Death
- Recovery → disability, impaired function, loss of autonomy
Patterns of Functional Decline at End of Life

Definitions: Sudden death = cardiac arrest or trauma; Terminal illness = cancer; Organ failure = HF/COPD; Frailty: residence in nursing home
Trajectories of Disability in the Last Year of Life

Thomas M. Gill, M.D., Evelyne A. Gahbauer, M.D., M.P.H., Ling Han, M.D., Ph.D., and Heather G. Allore, Ph.D.

n=383 elderly decedents

FRAILTY ~ most common condition leading to death
Cumulative Deficit Model

CSHA captured 92 variables such as symptoms, signs, laboratory values, disease states and disabilities – collectively termed “deficits”

<table>
<thead>
<tr>
<th>Mood problems</th>
<th>Seizures, partial complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeling sad, blue, depressed</td>
<td>Seizures, generalized</td>
</tr>
<tr>
<td>History of depressed mood</td>
<td>Syncope or blackouts</td>
</tr>
<tr>
<td>Tiredness all the time</td>
<td>Headache</td>
</tr>
<tr>
<td>Depression (clinical impression)</td>
<td>Cerebrovascular problems</td>
</tr>
<tr>
<td>Sleep changes</td>
<td>History of stroke</td>
</tr>
<tr>
<td>Restlessness</td>
<td>History of diabetes mellitus</td>
</tr>
<tr>
<td>Memory changes</td>
<td>Arterial hypertension</td>
</tr>
<tr>
<td>Short-term memory impairment</td>
<td>Peripheral pulses</td>
</tr>
<tr>
<td>Long-term memory impairment</td>
<td>Cardiac problems</td>
</tr>
<tr>
<td>Changes in general mental functioning</td>
<td>Myocardial infarction</td>
</tr>
<tr>
<td>Onset of cognitive symptoms</td>
<td>Arrhythmia</td>
</tr>
<tr>
<td>Clouding or delirium</td>
<td>Congestive heart failure</td>
</tr>
<tr>
<td>Paranoid features</td>
<td>Lung problems</td>
</tr>
<tr>
<td>History relevant to cognitive impairment or loss</td>
<td>Respiratory problems</td>
</tr>
<tr>
<td>Family history relevant to cognitive impairment or loss</td>
<td>History of thyroid disease</td>
</tr>
<tr>
<td>Impaired vitalation</td>
<td>Thyroid problems</td>
</tr>
<tr>
<td>Tremor at rest</td>
<td>Skin problems</td>
</tr>
<tr>
<td>Postural tremor</td>
<td>Malignant disease</td>
</tr>
<tr>
<td>Intention tremor</td>
<td>Breast problems</td>
</tr>
<tr>
<td>History of Parkinson’s disease</td>
<td>Abdominal problems</td>
</tr>
<tr>
<td>Family history of degenerative disease</td>
<td>Presence of incontinence</td>
</tr>
<tr>
<td>Other medical history</td>
<td>Presence of incontinence</td>
</tr>
</tbody>
</table>

Frailty Index (FI) = # deficits / total variables

Frailty represents the “cumulative effects of individual deficits”
Reinforces the concept of “physiologic/homeostatic reserve” and “biological gradation”

FI strongly correlated with risk of death and institutionalization

Jones et al J Am Ger Soc 2004
### Physical Phenotype Model

<table>
<thead>
<tr>
<th>Frailty Characteristics</th>
<th>CHS Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shrinking, weight loss (unintentional), sarcopenia</td>
<td>&gt;10 lb lost unintentionally in prior 1 year</td>
</tr>
<tr>
<td>Weakness</td>
<td>Grip strength: lowest 20% (by sex, BMI)</td>
</tr>
<tr>
<td>Poor endurance, exhaustion, slowness</td>
<td>“exhaustion” (self-reported); walking time/15 ft: slowest 20% (by sex, height)</td>
</tr>
<tr>
<td>Low activity</td>
<td>Kcal/week: lowest 20% (males &lt;383 Kcal/wk; females &lt;270 Kcal/wk)</td>
</tr>
</tbody>
</table>

1. **Shrinking**: weight loss, unintentional, of ≥10 lbs in prior year
2. **Weakness**: grip strength in lowest 20% at baseline (age/BMI)
3. **Poor endurance/energy**: self report of exhaustion (CES-D scale)
4. **Slowness**: slowest 20% at baseline for time to walk 15 ft (sex/height)
5. **Low physical activity**: lowest quintile of physical activity (gender)

Frail ≥ 3
Vulnerable 1-2
Not Frail 0
## Domains to Define, Measure and Operationalize

<table>
<thead>
<tr>
<th>Domain</th>
<th>Operational Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Health Status</strong></td>
<td>Hospitalizations, global assessment of functioning scale, self-rated health</td>
</tr>
<tr>
<td><strong>Physical Function</strong></td>
<td>BADL, IADL, functional independence measure (FIM)</td>
</tr>
<tr>
<td><strong>Cognitive Function</strong></td>
<td>MMSE, Montreal Cognitive assessment, clock drawing test</td>
</tr>
<tr>
<td><strong>Mobility</strong></td>
<td>Short physical performance battery, gait speed, TGUG, chair rise, mobility aid</td>
</tr>
<tr>
<td><strong>Strength</strong></td>
<td>Grip strength, stair climb, subjective assessment of weakness</td>
</tr>
<tr>
<td><strong>Energy</strong></td>
<td>Fatigue severity scale, subjective assessment of exhaustion or fatigue</td>
</tr>
<tr>
<td><strong>Nutritional Status</strong></td>
<td>BMI, weight, albumin/prealbumin, mini-nutritional assessment, weight loss</td>
</tr>
<tr>
<td><strong>Skeletal Muscle Mass</strong></td>
<td>Anthropometry, bioelectrical impedance, MRI/CT/ultrasound</td>
</tr>
<tr>
<td><strong>Mood</strong></td>
<td>Geriatric depression scale, HADS, self-reported depression/anxiety</td>
</tr>
<tr>
<td><strong>Social relations/support</strong></td>
<td>Availability of social resources, subjective assessment of loneliness or isolation</td>
</tr>
<tr>
<td><strong>Laboratory Markers</strong></td>
<td>Inflammatory mediators (IL-6, IL-1, TNF, CRP), oxidized LDL, creatinine</td>
</tr>
</tbody>
</table>
Methods to Screen and “Diagnose” Frailty

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Items</th>
<th>Example</th>
<th>Evaluated in ICU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frailty Index (FI)</td>
<td>Deficit accumulation</td>
<td>30-70</td>
<td>CSHA FI (70 items)</td>
<td>YES</td>
</tr>
<tr>
<td>Physical phenotype</td>
<td>≥ 3 physical features</td>
<td>3-5</td>
<td>Fried (CHS) criteria</td>
<td>YES</td>
</tr>
<tr>
<td>Physical performance</td>
<td>Single measure</td>
<td>1</td>
<td>Gait speed, grip strength, chair stand</td>
<td>NO</td>
</tr>
<tr>
<td>measures</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Judgement-Based tools</td>
<td>Global subjective assessment</td>
<td>1</td>
<td>Clinical Frailty Scale</td>
<td>YES</td>
</tr>
<tr>
<td>Multidimensional tools</td>
<td>Battery of assessments</td>
<td>5-20</td>
<td>EFS, FRAIL, CAF, Groningen Frailty Indicator</td>
<td>NO</td>
</tr>
<tr>
<td>Sarcopenia</td>
<td>Imaging to assess skeletal</td>
<td>1</td>
<td>CT scan psoas or rectus femoris</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>muscle</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Gold Standard: Comprehensive Geriatric Assessment (CGA)
Mortality in Relation to Frailty in Patients Admitted to a Specialized Geriatric Intensive Care Unit

- Single “geriatric” ICU in China (mean age 82 yr)
- Novel FI based on 52 variables (23 chronic + 31 acute)
- All patients who died had FI > 0.46
- All patients who survived 30-days had FI <0.22

Each 1% ↑ in FI associated with 11% ↑ in 30-day mortality (OR 1.11; 95% CI, 1.07-1.15)
# Frailty as a Predictor of Surgical Outcomes in Older Patients

<table>
<thead>
<tr>
<th>n=594</th>
<th>Non-Frail (58.2%)</th>
<th>Intermediate (31.3%)</th>
<th>Frail* (10.4%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (yr)</strong></td>
<td>71 (67-94)</td>
<td>75 (65-92)</td>
<td>76 (65-94)</td>
</tr>
<tr>
<td><strong>Female Sex (%)</strong></td>
<td>67.6</td>
<td>52.7</td>
<td>41.9</td>
</tr>
<tr>
<td><strong>Post-operative complications</strong></td>
<td>1.0</td>
<td>2.06 (1.2-3.6)</td>
<td>2.54 (1.1-5.8)</td>
</tr>
<tr>
<td><strong>Length of stay</strong></td>
<td>1.0</td>
<td>1.49 (1.2-1.8)</td>
<td>1.69 (1.3-2.2)</td>
</tr>
<tr>
<td><strong>Institutionalized</strong></td>
<td>1.0</td>
<td>3.2 (1.0-9.9)</td>
<td>20.5 (5.5-76)</td>
</tr>
</tbody>
</table>

* FRAILTY defined by the physical phenotype criteria proposed by Fried

[Source: Makary et al JACS 2010]
Prevalence and impact of frailty on mortality in elderly ICU patients: a prospective, multicenter, observational study

n=196

- FP < 3
- FP ≥ 3

- CFS < 5
- CFS ≥ 5

Mortality (%) vs. Time:
- ICU: p=0.015, p=0.15, p=0.22
- Hospital: p=0.04, p=0.003, p=0.002
- 6 months: p=0.04, p=0.003, p=0.002

Le Maguet et al ICM 2014
Gait Speed and Operative Mortality in Older Adults Following Cardiac Surgery

Prospective multicenter cohort study of 15,717 patients undergoing cardiac surgery (STS Adult Cardiac Surgery Database)

Slowest tertile (<0.83 m/s) OR 3.2 (95% CI, 2.3-4.3) for 30-day all-cause mortality
A global clinical measure of fitness and frailty in elderly people

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 (sitting, standing) with dressing.

7. Severely Frail – Completely dependent on others 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 remember their past life events well. They can do personal care with help. In severe dementia, they cannot do personal care without help.

3. © 2002-2009 Canadian Medical Association. All rights reserved. Geriatric Research Unit, Dalhousie University, Halifax, NS. This document is permitted to copy for research and educational purposes only.

CFS score and mathematically derived FI highly correlated (Pearson 0.80, p<0.01)

Table 2: Cox proportional hazard ratios (HR) for time until death and until the requirement for institutional care

<table>
<thead>
<tr>
<th>Factor</th>
<th>Death, HR (95% CI)</th>
<th>Entry into institution, HR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1.08 (1.07–1.08)</td>
<td>1.15 (1.10–1.13)</td>
</tr>
<tr>
<td>Sex</td>
<td>0.83 (0.78–0.89)</td>
<td>1.38 (1.21–1.58)</td>
</tr>
<tr>
<td>Education level*</td>
<td>0.98 (0.97–0.99)</td>
<td>0.98 (0.97–0.99)</td>
</tr>
<tr>
<td>Modified Mini-Mental State Examination</td>
<td>0.84 (0.82–0.86)</td>
<td>0.65 (0.60–0.70)</td>
</tr>
<tr>
<td>Cumulative Illness Rating Scale</td>
<td>1.14 (1.11–1.17)</td>
<td>1.22 (1.16–1.27)</td>
</tr>
<tr>
<td>CSHA measuring tools</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rules-based definition of frailty</td>
<td>1.17 (1.13–1.20)</td>
<td>1.27 (1.19–1.35)</td>
</tr>
<tr>
<td>Frailty Index</td>
<td>1.26 (1.24–1.29)</td>
<td>1.56 (1.48–1.65)</td>
</tr>
<tr>
<td>Function Scale</td>
<td>1.16 (1.13–1.20)</td>
<td>1.29 (1.20–1.39)</td>
</tr>
<tr>
<td>Clinical Frailty Scale</td>
<td>1.30 (1.27–1.33)</td>
<td>1.46 (1.39–1.53)</td>
</tr>
</tbody>
</table>

Available at: http://geriatricresearch.medicine.dal.ca/clinical_frailty_scale.htm

Rockwood et al CMAJ 2005
A global clinical measure of fitness and frailty in elderly people

Survival

Institutionalization

For each 1-category ↑ in CFS score ~ 21.2% ↑ death and 23.9% ↑ institutionalization
Frailty is associated with postoperative complications in older adults with medical problems

Monidipa Dasgupta, Darryl B. Rolfson, Paul Stoolee, Michael J. Borrie, Mark Speechley

Post-operative Complications

Prospective cohort (n=125); aged > 70 yr; pre-op clinic; referred for elective non-cardiac surgery

Age-adjusted OR complications 5.02 (95% CI, 1.5-16.3)
Frailty, core muscle size, and mortality in patients undergoing open abdominal aortic aneurysm repair

n=262

Psoas core muscle size (i.e. sarcopenia) by pre-op CT ~ objective surrogate for FRAILTY

Lee et al J Vasc Surg 2011
Frailty – The “What” and “When”

Rapid Case Finding

- CFS
- Fl (eFl)
- Gait Speed

Define Frailty Components

- Multi-dimensional assessment (i.e. EFS)

Address Components

- Informed decision-making

ICU admission → Identify Contributors → Precision Recovery

Adapted from D. Rolfson
Patients admitted to ICU 
\( n = 2180 \)

Excluded \( n = 821 \)
- Age < 50 yr \( n = 639 \)
- Moribund, or stay < 24 h \( n = 182 \)

Potentially eligible patients 
\( n = 1359 \)

Excluded \( n = 938 \)
- Missed/no consent/excluded for other reasons \( n = 840 \)
- Prior admission to ICU during index hospital admission \( n = 61 \)
- Prior inclusion in study \( n = 37 \)

Enrolled in study 
\( n = 421 \)

Assessed at 6 and 12 mo for vital status 
\( n = 421 \)

Frailty (CFS > 4) \( \sim 32.8\% \)
(95% CI, 28.3-37.5)
<table>
<thead>
<tr>
<th>Outcome</th>
<th>Frail</th>
<th>Not frail</th>
<th>Association, OR (95% CI) or difference in medians (p value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adverse event‡</td>
<td>54 (39.1%)</td>
<td>83 (29.3%)</td>
<td>1.54 (1.01–2.37)</td>
</tr>
<tr>
<td>Death</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In ICU</td>
<td>16 (11.6%)</td>
<td>27 (9.5%)</td>
<td>1.37 (0.72–2.62)</td>
</tr>
<tr>
<td>In hospital</td>
<td>44 (31.9%)</td>
<td>45 (15.9%)</td>
<td>1.81 (1.09–3.01)</td>
</tr>
<tr>
<td>Duration of stay, d, median (IQR)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In ICU</td>
<td>7 (4–13)</td>
<td>6 (3–10)</td>
<td>1 d (0.02)</td>
</tr>
<tr>
<td>In hospital</td>
<td>30 (10–64)</td>
<td>18 (10–40)</td>
<td>12 d (0.02)</td>
</tr>
<tr>
<td>Discharge disposition§</td>
<td>n = 91</td>
<td>n = 235</td>
<td></td>
</tr>
<tr>
<td>Home, living independently</td>
<td>20 (22.0%)</td>
<td>104 (44.3%)</td>
<td>0.35 (0.20–0.61)</td>
</tr>
<tr>
<td>Home, living with help</td>
<td>33 (36.3%)</td>
<td>58 (24.7%)</td>
<td>1.67 (1.00–2.81)</td>
</tr>
<tr>
<td>Other¶</td>
<td>38 (41.8%)</td>
<td>73 (31.1%)</td>
<td>1.51 (0.92–2.48)</td>
</tr>
<tr>
<td>Discharged newly dependent**</td>
<td>24 (70.6%)</td>
<td>96 (51.6%)</td>
<td>2.25 (1.03–4.89)</td>
</tr>
<tr>
<td>Hospital readmission§</td>
<td>51 (56.0%)</td>
<td>92 (39.1%)</td>
<td>1.98 (1.22–3.23)</td>
</tr>
</tbody>
</table>

↑ vulnerability
↑ risk for death
↑ time for recovery
↑ functional impairment
Survival 1-year after ICU Admission

- Clinical Frailty Scale score:
  - 1-3
  - 4
  - 5
  - 6-8

- Follow-up from ICU admission, d

- Probability of survival

- Log-rank, p < 0.001

- Hazard ratio (HR) for different frailty scores:
  - Unadjusted
    - 1-3: 1.00 (ref)
    - 4: 2.01 (1.25-3.24)
    - 5: 2.88 (1.65-5.02)
    - 6-8: 3.76 (2.33-6.07)
  - Model 1
    - 1: 1.00 (ref)
    - 4: 2.03 (1.26-3.28)
    - 5: 3.00 (1.71-5.22)
    - 6-8: 3.52 (2.16-5.73)
  - Model 2
    - 1-3: 1.00 (ref)
    - 4: 1.90 (1.18-3.07)
    - 5: 2.69 (1.53-4.71)
    - 6-8: 3.08 (1.88-5.06)
  - Model 3
    - 1-3: 1.00 (ref)
    - 4: 1.86 (1.15-3.01)
    - 5: 2.37 (1.19-4.17)
    - 6-8: 2.84 (1.73-4.66)
  - Model 4
    - 1-3: 1.00 (ref)
    - 4: 1.90 (1.18-3.07)
    - 5: 2.50 (1.42-4.41)
    - 6-8: 3.06 (1.87-5.01)
  - Model 5
    - 1-3: 1.00 (ref)
    - 4: 1.86 (1.15-3.00)
    - 5: 2.31 (1.30-4.10)
    - 6-8: 2.77 (1.67-4.58)

Bagshaw et al CMAJ 2014
Secondary Analysis of BRAIN/MIND ICU Studies

Prevalence of frailty 30% (n=307) (50% age < 65 years)
↑ CFS score associated with ↑ mortality, ↑ disability in IADL and worse physical (not mental) HRQL
CFS scores not associated with disability in BADL or cognition
CFS Implementation: Preliminary Data

- 9,080 unique admissions to 15 Alberta ICUs between Jan 1 – Sept 9 2016
- All patients screened for frailty with CFS (28.7% missing)
- Prevalence ~ 17.5% (frail)
- Undertaking further validation work and dissemination performance reports
Frailty Measure eCritical (CIS) Implementation Pilot
1. Better informed triage decisions ~
   - Regarding to suitability and likely benefit for ICU support

2. Guide and inform patient-centered decision-making ~
   - Regarding scope/duration of ICU support (i.e., time-limited trials)
   - Regarding establishing/revisiting goals of care
   - Regarding managing post-ICU survivorship expectations and experience (i.e., impact on HRQL, new disability, institutionalization, rehospitalization)
Acute Skeletal Muscle Wasting in Critical Illness

63 critically ill mechanically ventilated patients (age 54.7; APACHE II 23.5)

**A** Change in rectus femoris (RF) cross-sectional area (CSA) over 10 d

-17.7%

**B** Measures of muscle wasting in patients assessed by all 3 measures on both day 1 and day 7 (n=28)
Timing of onset and burden of persistent critical illness in Australia and New Zealand: a retrospective, population-based, observational study

At ~ 10 days after ICU admission, acuity did not predict mortality better than antecedent characteristics (age, sex, comorbid disease) (variable transition point by case-mix and acuity)

Prevalence only 5.0% but accounted for 32.8% of ICU-bed days and only 46.5% returned home

Transition to “persistent critical illness”
Choosing Wisely
An initiative of the ABIM Foundation

Critical Care Societies Collaborative - Critical Care

Five Things Physicians and Patients Should Question

Don’t continue life support for patients at high risk for death or severely impaired functional recovery without offering patients and their families the alternative of care focused entirely on comfort.

Patients and their families often value the avoidance of prolonged dependence on life support. However, many of these patients receive aggressive life-sustaining therapies, in part due to clinicians’ failures to elicit patients’ values and goals, and to provide patient-centered recommendations. Routinely engaging high-risk patients and their surrogate decision makers in discussions about the option of foregoing life-sustaining therapies may promote patients’ and families’ values, improve the quality of dying and reduce family distress and bereavement. Even among patients pursuing life-sustaining therapy, initiating palliative care simultaneously with ongoing disease-focused therapy may be beneficial.


http://www.sccm.org/News/Pages/Choosing-Wisely.aspx
And...How Else May It Add Value?

3. Transitions of care ~
   - Priorities/specialized needs for transition from ICU to ward setting
   - Priorities/specialized needs for hospital to community (i.e., CGA)

4. Interventions (recognizing vulnerability)~
   - Focused on maximizing physical recovery (i.e., minimizing avoidable disability)
   - Focused on cognitive, psycho-social, and emotional recovery
   - Focused on care-giver burden/experience
   - Focused strategy towards palliation
Frailty – An Integrated Model

Rapid Case Finding
- CFS
- Gait Speed
- Fl (eFl)

Define Frailty Components
- Multi-dimensional assessment (i.e. EFS)

Address Components
- Informed decision-making

ICU admission → ICU Transition → Community Transition
The feasibility of measuring frailty to predict disability and mortality in older medical intensive care unit survivors

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- Prospective cohort study of ICU survivors aged \( \geq 65 \) years (\( n=22 \))
- Frailty assessed 4 day prior to hospital discharge using Physical Frailty Phenotype
- Prevalence 82\% (\( n=18 \))
- Frailty associated with increased (unadjusted) rate of disability (1-month) and death (6-mon)
- Showed feasibility of “ward-based” assessment
Summary

• **Frailty** is a multi-dimensional syndrome contributing to vulnerability to adverse events:
  • can be measured in critically ill patients
  • is associated with ↑ risk adverse events, death, re-hospitalization
  • is associated with ↓ HRQL, new disability and ↑ functional dependence
  • identifies a vulnerable population

• **Frailty Assessment**
  • at ICU admission should focus on “case-finding” for near-term prognostication, guiding clinical care and decision-making and
  • **after** ICU should start to focus more comprehensive assessments, care transitions and specialist referral
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Questions?

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But maybe you can – consider how fit one is at age 60 years and that:

You are unlikely to be more fit at 80 years than you are at 60 years

You never see it coming (frailty)