Frailty and Sarcopenia ...
... and falls ...
... and cognitive impairment

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Frailty and Sarcopenia

falls

NSW Health
Northern Sydney Local Health District
How do they contribute to falls?

* functional capacity is adversely affected
* muscle loss, weight loss, weakness, tiredness, slow gait, lack of physical activity, cognitive impairment
* adults aged ≥65 years demonstrate a frailty prevalence rate between 5.8% and 35%
* and a pre-frailty rate between 18.8% and 50.9%
* pre-frail stage adults are also high falls risk
* frail older adults are likely to experience recurrent falls
* frail older adults are more likely to have multiple #s
* even without physical injury, falls →↑fear of falling
* fall prevalence is higher in females

Trombetti et al. 2018; Bromfield et al. 2017; Cheng and Chang 2017; Kruschke 2017; Gale et al. 2016; Clynes et al. 2015; Joseph et al. 2015; Fhon et al. 2013
Why do falls risk assessments?

- falls are the most frequently occurring adverse event in hospitals
- 82.2% of falls occur in patients aged ≥65 years
- 31% result in physical injury, including death
- age is NOT the biggest risk factor ...
- cognitive impairment – delirium, dementia, brain injury, intellectual disability
- followed by frailty, then: age, mobility, medications, sensory deficits, medical conditions (risk factors in italics are not necessarily age related)
- falls risk is EIGHT times higher in cognitively impaired patients
- falls are the primary cause of hospitalisation in patients with cognitive impairment

Matarese & Ivziku 2016; Ungar et al. 2016; Joseph et al. 2015; Matarese et al. 2015
“The predictive capacity of a falls risk screening tool to identify patients at risk is a crucial aspect of any screening tool, since this determines its effectiveness and clinical use.”

- FRAT – Falls Risk Assessment Tool – Ontario
- Clinician override
- FRAMP – Falls Risk Assessment and Management Plan

Matarese & Ivziku 2016
# Ontario Modified STRATIFY (Sydney Scoring) Falls Risk Screen

**Clooney, George**  
MRN: 177-75-79  
DOB: 05/06/1961  
AGE: 55 Years  
MC: 9999999999

## History of Falls
- Did the patient present to hospital with a fall or have they fallen since admission?  
  - Yes  
  - No
- If not, has the patient fallen within the last 6 months?  
  - Yes  
  - No

## Mental Status
- Is the patient confused (i.e. unable to make purposeful decisions, disorganised thinking and memory impairment)?  
  - Yes  
  - No
- Is the patient disorientated (i.e. lacking awareness, being mistaken about time, place or person)?  
  - Yes  
  - No
- Is the patient agitated (i.e. fearful affect, frequent movement and anxious)?  
  - Yes  
  - No

## Vision
- Does the patient require eyeglasses continually?  
  - Yes  
  - No
- Does the patient report blurred vision?  
  - Yes  
  - No

## Toileting
- Does the patient have glaucoma, cataracts or macular degeneration?  
  - Yes  
  - No

### Transfer Score (TS)

<table>
<thead>
<tr>
<th>Score</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Independent - use of aids is independent is allowed.</td>
</tr>
<tr>
<td>1</td>
<td>Minor help - one person easily or needs supervision for safety.</td>
</tr>
<tr>
<td>2</td>
<td>Major help - one strong skilled helper or two normal people; physical - can sit.</td>
</tr>
<tr>
<td>3</td>
<td>Unable - no sitting balance; mechanical lift</td>
</tr>
</tbody>
</table>

### Mobility Score (MS)

<table>
<thead>
<tr>
<th>Score</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Independent (but may use any aid e.g. walking stick).</td>
</tr>
<tr>
<td>1</td>
<td>Walks with help of one person (verbal or physical).</td>
</tr>
<tr>
<td>2</td>
<td>Wheelchair independent including corners etc.</td>
</tr>
<tr>
<td>3</td>
<td>Immobile</td>
</tr>
</tbody>
</table>

### Total TS + MS Score

If value total between 0-2 then score = 0  
If values total between 3-7 then score = 7

### TOTAL OMS Score

Score > or = 9 HIGH RISK OF FALLS  
If any falls risk factors are identified implement actions as required.

## Clinical Judgement
- High Risk of Falls

## Medications

If one or more of the below medications are taken please refer to medical officer for review.

- Antipsychotics
- Antidepressants
- Sedatives/Hypnotics
- Opioids

**Provide patient/family/carers with information about Falls Prevention**
double-sided A4 sheet (barcoded)
Catalogue number NS08427B for ordering
If you **think** that your patients are **at risk of falls**, then they probably are.

Falls risk screens and assessments will help you to individualise care plans.
Falls
to be continued
in Case Study ...
Cognitive impairment refers to deficits in any single or combination of cognitive or intellectual functions

* orientation, attention, concentration, language, judgement, planning, impulse control, praxis or visuospatial tasks

* delirium, dementia, intellectual disability, brain trauma, stroke
There are multiple causes of cognitive impairment, mainly:

- delirium
- dementia
- severe illness
- mental illness (eg depression)
- alcohol and substance abuse disorders (both intoxication and withdrawal)
- medications
- intellectual disability
- traumatic brain or anoxic injury and stroke
Cognitive assessment tools

- AMTS – Abbreviated Mental Test Score
- CDT – Clock Drawing Test
- FAB – Frontal Assessment Battery
- Folstein’s MMSE – Mini Mental State Exam
- MoCA – Montreal Cognitive Assessment
- RUDAS – Rowland Universal Dementia Assessment Scale
- SIS – Six Item Screener
- CAM – Cognitive Assessment Method
Before the assessment

Ideal conditions for assessment:

* quiet space/room
* no distractions
* privacy
* patient’s ability to understand, read and write English (this determines the type of test and the need for an interpreter)
* nurse’s familiarity and proficiency with the tool/s
* refer to Guideline – GE2015_011 Cognitive Impairment (Delirium, Mental Disorders, Intellectual Disability, Dementia) Clinical Practice Guidelines for Care of Young People and Adults in Hospital in NSLHD
Performing the assessment

- ensure the patient is comfortable
- do not rush the patient
- provide adequate time for the patient to answer the question or perform the task
- do not be judgmental
- maintain a calm and gentle demeanour
- do not raise your voice
Falls Assessment
and Cognitive Assessment

case study
Annabelle Black
Mrs AB – history

* aged 83
* co-morbidities – HTN, CCF, AF, sarcopaenia, CABG x 3 in 2010, OA, OP, R THR 2012
* lives alone, very independent and active, no history of falls, no diagnosis of dementia
* wears glasses and hearing aids
* presented post trip and fall at home – L #radius and ulna requiring surgical intervention
* multiple medications
Mrs AB – medications

- spironolactone 12.5mg mane (K+ sparing diuretic)
- telmisartan 40mg bd (angiotensin II receptor agonist/antihypertensive)
- sotalol 80mg bd (β blocker/antiarrhythmic)
- apixaban 5mg bd (anticoagulant/antithrombotic)
- isosorbide mononitrate 60mg mane (antianginal)
- lercanidipine 20mg nocte (CCB/antihypertensive)
- alendronate 70mg weekly in mane
- calcium 600mg nocte
- vitamin D 15µg nocte
- piroxicam 20mg mane (NSAID/analgesia)
- ibuprofen 400mg tds
- paracetamol 1g prn
Mrs AB – ED handover

* 0900
* disorientated and very drowsy
* 5mg IMI morphine for pain
* obs – BP 110/80, HR 120, RR 22, temp 38°C, O₂ sats 98% on 2L NP, pain 7/10, AVPU – V, BGL 11
* awaiting blood results
* NaCl 0.9% 100mL/hour
* HNPU – for UA
* NBM – surgery booked for later in the day
Mrs AB – admission to ward

* 0940
* awake and appears alert
* no glasses or hearing aids in situ
* weight 41.5kgs, height 152cm
* obs – BP 105/60, HR 120, RR 22, temp 38.5°C, $O_2$ sats 98%
on 2L NP, pain 8/10, AVPU – A, BGL 11
* UA – leucocytes +++, RBCs +++++, protein +, nitrites +++
* what forms do we fill out?
Mrs AB – paperwork

- **Waterlow** – what is her risk for pressure injury?
- **MST** – is she malnourished?
- **Ontario** – what is her falls risk?
- **FRAMP** – when do we fill this out?
- **DRAT** - what is her risk of delirium?
- **SIS** – does she have cognitive impairment?
- **CCC** - when do we fill this out, and why?
Impact of ageing on nutrition

Potential Impacts of Ageing on Nutrition

- Dental health
- Loss of appetite
- Several disease processes
- Swallowing difficulties
- Polypharmacy
- Reduced balance and strength
- Loss of smell
- Poorer absorption of nutrients
- Communication
- Loss of taste
- Decline in mobility
- Dementia
- Increased dependence
Mrs AB – that evening

* 1840
* taken to OT for ORIF at 1400
* returned to ward at 1830
* IDC in situ draining cloudy urine
* IVT NaCl 0.9% 125mL/hr
* IV antibiotics
* PCA with fentanyl
* very drowsy
* obs – BP 100/70, HR 72, RR 12, temp 36.4°C, O₂ sats 96% on 2L NP, pain 2/10, AVPU – V, BGL 8
* what forms do we fill out?
Think about the previous forms

Has anything changed?
How?
* iatrogenic event – invasive surgery
* additional medications, including opioids
* IDC inserted
* very drowsy
* HR and RR significantly lower
* $O_2$ sats dropped on same level $O_2$

- Waterlow (including MST)
- Ontario
- FRAMP
- DRAT
- SIS
- CCC
* taken to OT for ORIF at 1400 and returned to ward at 1830
* IDC in situ draining cloudy urine (earlier UA showed UTI – awaiting cultures and sensitivity)
* IVT NaCl 0.9% 125mL/hr
* IV antibiotics six hourly, next dose due at midnight
* PCA with fentanyl, using well
* very drowsy – likely due to effects of fentanyl
* obs – little variance from earlier
Mrs AB – observations

* 2340
* calling out
* disorientated
* agitated
* pulled out IVC
* c/o pain (unable to give a score)
* states she wants to urinate
* repeatedly asks, “Where’s Judy?”
What now?

... and what next?
[in trial] example of

Delirium Flowchart
What came first?

- hypoxia
- hypotension
- hypoglycaemia
- electrolyte imbalance
- medication
- infection
- urinary retention
- constipation/faecal impaction
- pain
- substance withdrawal

post-operative delirium or delirium due to infection?
Mrs AB – ongoing care

* attempt to reorient – time and place
* do not argue or raise your voice
* explain IDC
* explain why Judy is not there and when she will be
* offer warm drink
* monitor and treat pain
* encourage Judy to come in and stay (carer recliner chair, blanket, pillow, meals)
* ask Judy to bring in familiar items (photos, pastimes eg puzzle book/magazines, favourite blanket/pillow etc)
* refer to CCC