HipFest Sept 2023

Dementia & Rehab: should we bother?

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Summary

- Dementia has a major impact on ALL outcomes after hip fracture
- Not all dementia patients are equal
- Dementia interacts with physical frailty, whanau support and residence to affect outcome
- Selectivity is reasonable, a blanket ban is NOT.

The impact of fractures

- Mrs C.W.
- Kyphosis from her late 60's
  - Pain, sleep
  - Activities: cooking, sewing, shopping
  - Social isolation, self-esteem
- Hip # aged 84: good recovery
- Hip # aged 91: passed away (pneumonia)

Mrs C.W.'s First Hip Fracture

- Fell off kitchen stool (?FF)
- Really shoddy perioperative care
- Limited rehab
  - BUT
- Returned to full independence after 3/12
- Lived alone in own home for 5 years

Mrs C.W.'s Second Hip Fracture

- Rolled out of bed, FLOF
- Fairly good periop. care by modern standards, listed for rehab post-op
  - BUT
- Did not mobilise post-op; delirium
- Passed away after 10/7 - pneumonia

What affected her outcome?

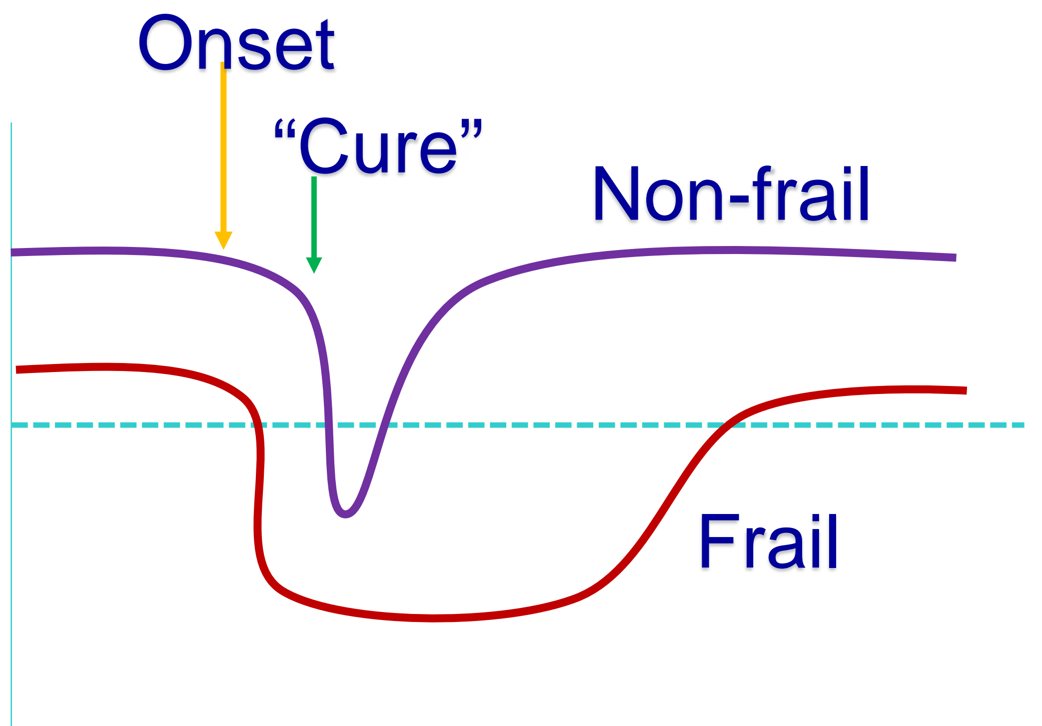
	First	Second
Age	84	91
Mobility	Stick	2W2S Frame
Dementia	Normal cog	Moderate
Residence	Own home	Rest Home
Comorbidity	Minimal	Resp, frailty

What do we mean by Frailty?

"Loss of ability to maintain homeostasis under challenge"

- In other words, it takes less of a push to knock you down
- Can be any kind of "push", can be any kind of "down"
- Not all old people are frail
- Not all frail people are old.

The impact of frailty on illness



In frail people

- Starts faster
- Lasts longer
- Recovers more slowly
- Incomplete recovery

Delirium

- Usually short term, usually reversible impairment of cognitive function
  - Memory
  - Attention
  - Visual hallucinations/illusions
  - Agitation
- Highest risk: dementia, previous delirium

Checklist for Delirium

- **PINCHES ME**
  - Pain
  - INfection
  - Constipation
  - Hydration
  - Environment
  - Stroke
  - Medication
  - Electrolytes

Impact of dementia on #NOF care

- HIGH risk of delirium
- Resistance to post-op medical care
- Forgetting restrictions: WB, hip precautions
- Impaired understanding of rehab process
- Loss of carry-over of rehab activities
- Reduced adaptability on functional tasks

Time for some actual data…

- Australasian Rehabilitation Outcomes Centre
- Case-control design, Queensland 2014-19
- Cases were "Patients reported as having dementia impacting their rehabilitation program"
- 1900 cases of 20900 post-#NOF rehab episodes
- 1:1 match on age, residence, FIM motor
- Outcomes: FIM change, "FIM efficiency", LOS, destination

Loh YL, Wicks J, Alexander T. Aging Med 2023; 6:132. DOI 10.1002/agm2.12251

Whole Group comparison

	Case	Control
Age	85.2	82.0
Own Home	80.5%	90.2%
Prior care need	80%	46%
Admit FIM motor	34	46
Admit FIM cog	17.6	28

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Case-control outcomes

At discharge	Case	Control	p
FIM motor	54	64.5	<0.0001
FIM Cog	20	30	<0.001
FIM gain	26.2%	44.0%	<0.0001
Rehab LOS	21	23	<0.001
FIM Efficiency	6.5	8.9	<0.0001
To own home	51.8%	65.2%	<0.001
Carer need (own home)	85%	61%	<0.001

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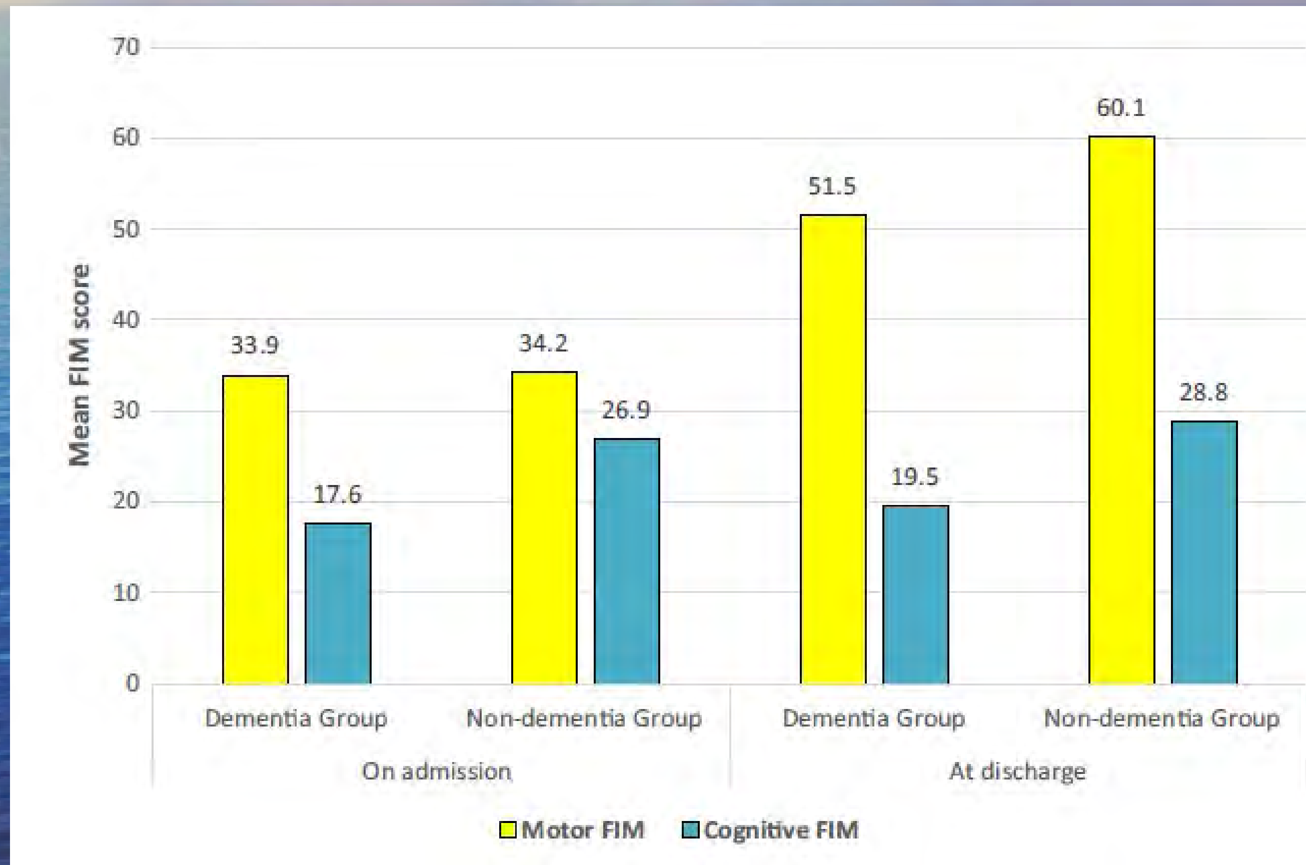
Case-control outcomes



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Study Conclusions

- Patients with dementia who sustain a fractured hip **benefit from inpatient rehabilitation**, although their clinical outcomes are **not as good** as those without dementia.
- FIM change and FIM efficiency were lower in the dementia group. Length of stay for patients with dementia was shorter due to earlier recognition for the need for placement in either an RACF or at home with carer support.
- The need for placement in an RACF or carer support in a private residence was significantly greater in the dementia group.

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Does rehab affect outcome in patients with dementia?

- Ontario Institute for Clinical Evaluative Sciences
- Health administrative databases
- Cohort design
- Compared no rehab with 3 rehab settings
- 11000 patients with dementia and hip fracture
- Outcomes: admission to ARC, mortality

Seitz DP et al, JAGS 2016. 64:47-54. DOI 10.1111/jgs.13881

Patient cohort

- First hip fracture 2003-2011 in Ontario
- Diagnosis of dementia in preceding 5 years
- Community resident before fracture
  - 40% received no rehab
  - 20% Complex Community Care (HLC with some physio)
  - 10.3% rehab at home: median 6 contacts in 3/12
  - 27.4% in-patient rehab
- Choice driven by availability more than morbidity

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Admission to LT-ARC

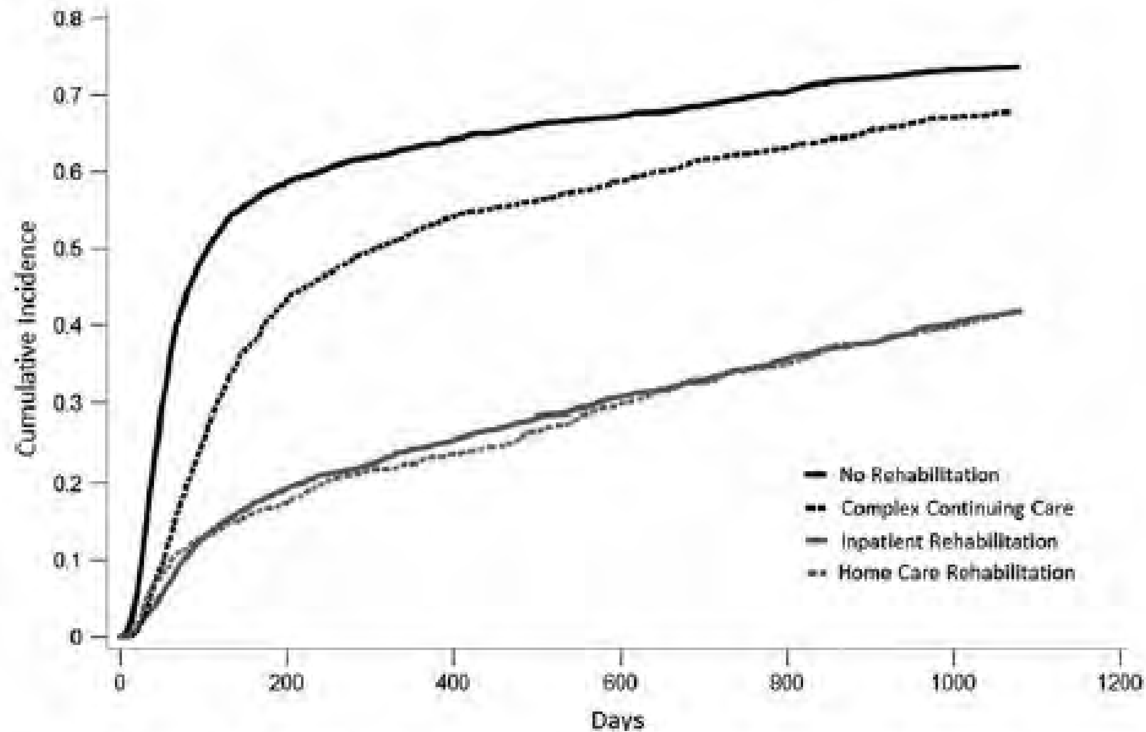

Figure 1. Cumulative incidence function curves of time to long-term care admission associated with setting of postoperative rehabilitation.

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Mortality

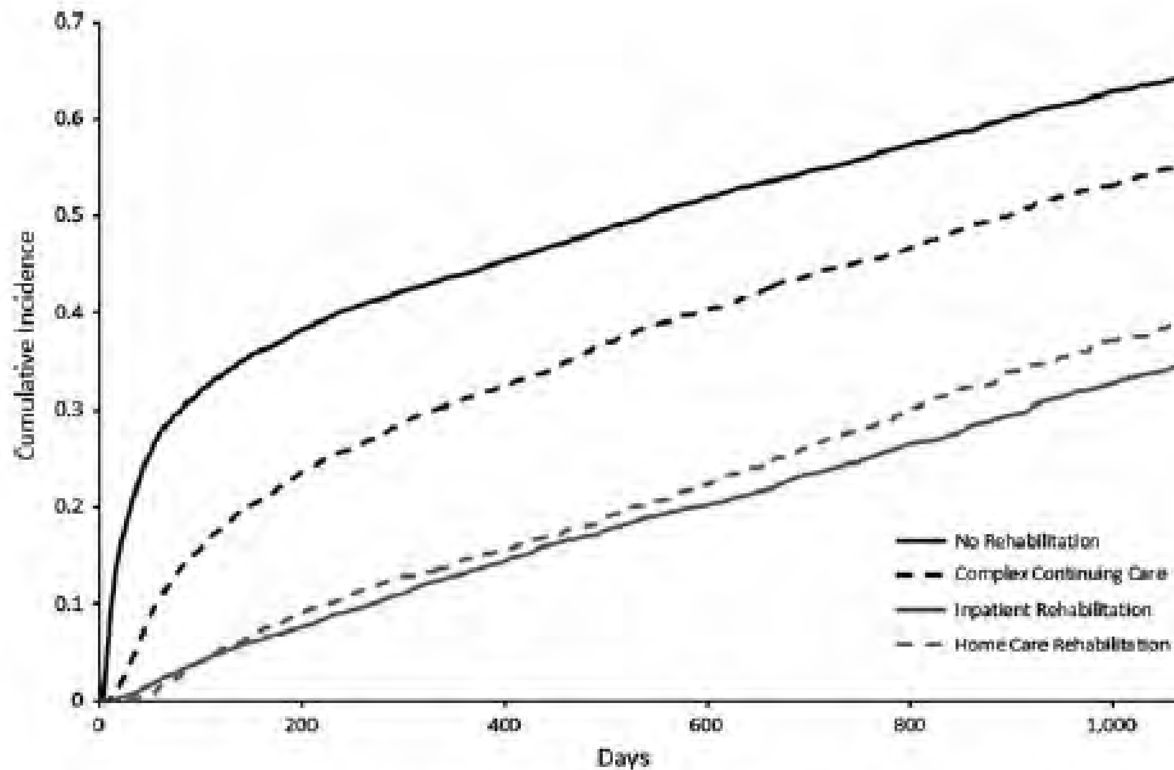

Figure 2. Kaplan–Meier survival analysis of cumulative incidence of mortality after hip fracture surgery according to postoperative rehabilitation setting.

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Discussion

- Limited clinical role in rehab decision
- Probably still some active not-for-rehab choices
  - Over-estimates effect size
- Included mainly mild-mod dementia
- Ethnicity, rurality, socioeconomic status
- BIG equity issues on my reading, mainly through lack of access to IP rehab in rural settings

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So should we be bothering? NO

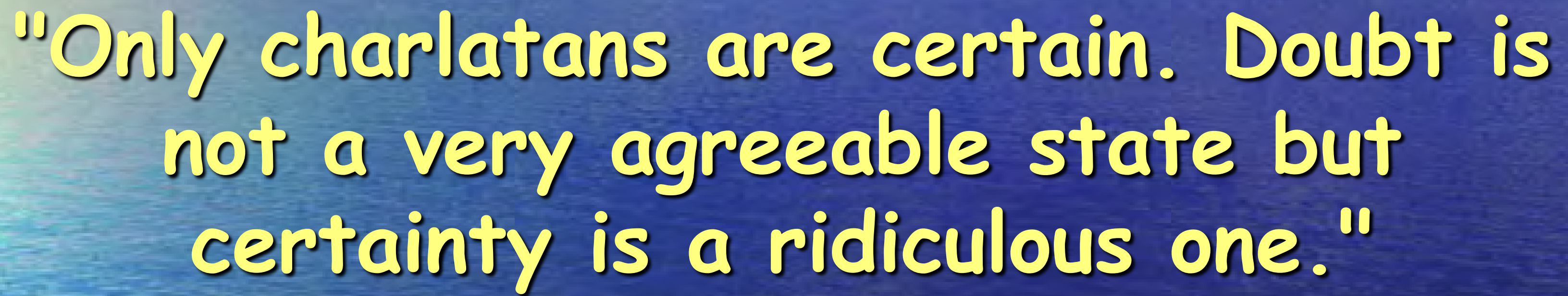
- People with dementia gain less from post-#NOF rehab than those without
- FIM efficiency is surrogate for cost per QALY
- Health services are stretched
- We can’t do everything for everyone
- Efficient use of resources is part of our job
- Post-#NOF pneumonia isn’t the worst way to go

So should we be bothering? YES

- Outcomes are pretty dire for people with dementia who DON'T have rehab post-#NOF
- Rehab efficiency isn't THAT much worse
- Our first responsibility as clinicians is to the patient in front of us
- Cost per QALY is likely still better than many other accepted healthcare interventions
- Rehab reduces ARC admission and further fracture

Conclusions

- Treatment decisions should be patient-specific
- Holistic, multiprofessional assessment of prior quality of life and rehab potential
- Include patient and whanau in discussion, BUT
- Whether to offer rehab is a ***clinical decision***
- Early goal setting, timeline and stop criteria



Voltaire