

# Self-rated health as a proxy for frailty in older adults at emergency departments

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## 1. Background

- Frailty is associated with functional dependency post discharge, mortality, readmissions and longer hospital stay.
- There are many screening tools to measure risk and level of frailty.
- However in the busy ED environment clinicians are restricted to measure objectively the parameters of existing frailty tools.
- A practical instrument is required for use in the ED which can be applied rapidly, does not rely on complex indicators and is easily administered.

### Self-rated health question

Compared with people of the same age would you say your health is:  
**Poor, Fair, Good, Very Good or Excellent**

## 4. Results

Within the cohort, 899 (88%) of patients (51.4% female) with mean and median age 80 years had data at baseline and follow-up. A total of 383 (42.6%) reported a Fair/Poor self-rated health on admission, 416 (46.3%) were recorded as having at least one chronic condition and 304 (33.8%) of patients required the need for community support at three-months post hospital discharge.

Univariate association of Self-Rated Health and Frailty on admission

	Odds Ratio	95% CI	P Value
Fair/PoorSRH	3.82	2.89-5.06	<0.0001

\*Fair/Poor self-rated health was significantly associated with frailty on admission (OR 3.82, 94%CI 2.89-5.06)

Multivariate analysis of Self-Rated Health and Frailty on admission

	Odds Ratio	95% CI	P Value
85+yrs	5.75	3.81-8.69	<0.0001
75-84yrs	2.05	1.39-3.01	<0.0001
Female	2.02	1.48-2.75	<0.0001
Fair/PoorSRH	4.02	2.92-5.52	<0.0001
≥1 Chronic Disease	2.39	1.75-3.28	<0.0001

\*Fair/Poor self-rated health had a strong and statistically significant association with baseline frailty (OR 4.02, 95%CI 2.92-5.52 p<0.0001) after adjusting for age group, sex and the presence of 1 or more chronic conditions.

Multivariate analysis of self-rated health on admission and community services at follow-up

	Odds Ratio	95% CI	P Value
85+yrs	2.76	1.89-4.03	<0.0001
75-84yrs	1.42	0.98-2.06	<0.067
Female	1.71	1.27-2.29	<0.0001
Fair/PoorSRH	1.79	1.33-2.42	<0.0001
≥1 Chronic Disease	1.00	0.74-1.36	<0.981

\*Self-rated health on admission was also an independent predictor of needing community services at follow-up (OR 1.79, 95%CI 1.33-2.42 p<0.0001)


## 2. Objectives

- To determine if self-rated health could be used as a proxy for frailty on admission to hospital and as a high risk flag for people who will need community support post hospital discharge.


## 3. Methods

- Nested cohort study of consecutive older adults ≥65 years admitted via ED in four large Sydney teaching hospitals during business with nurse-measured Clinical Frailty Scale and Self-reported health applied on admission and repeated frailty assessment applied over the phone at three months post hospital discharge.
- SPSS was used to determine associations adjusting for age, sex, socio-economic status (SES) and the presence of ≥1 comorbidities. SES was removed from final model as it was not statistically significant.


### 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.

\* 1. Canadian Study on Health & Aging, Revised 2008.  
2. K. Rockwood et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:489-495.  
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## 5. Conclusions

- Poor-fair self-rated health on admission to hospital is significantly associated with poor outcome. The global question may be useful as a proxy for frailty where comprehensive frailty measures cannot be fully administered due to the very environment of the emergency department.
- Poor-fair self rated health could be used as a red flag for clinicians to anticipate the need for further screening/referrals to community support services and the primary health care team for older adults who present to the emergency department.
- Further research on the external validity of self-reported health is needed