

REVIEW OF EVIDENCE BASE
FOR ADVANCE CARE PLANNING IN THE COMMUNITY
MARCH 2020

It is important to note that this guidance is based on what treatment options have successful outcomes for patients who are frail and currently living in the community. This is not a rationing document. It includes evidence from before and during the COVID pandemic.

Cardiopulmonary Resuscitation Outcomes in Hospital

The most recent cardiac arrest audit on hospital inpatients showed a survival rate to discharge of 18.8% overall, but only 11.4% for patients over 80 years. There was no complete follow up in neurological status or quality of life. Patients who survived had a shockable rhythm at the outset of the arrest (Nolan et al 2014). This is an improvement in outcome from the BRESUS study which showed less than 5% survival to discharge in the 1990s. This is likely to be partly due to improvement in resuscitation services in hospitals but also due to wider application of DNAR CPR to patients who are unlikely to survive the intervention.

Admission Outcomes in Patients with Advanced Frailty (Physical and Mental)

The Clinical Frailty Scale (CFS) was developed and validated in Canada as a tool for improving management of patients with perceived ill health (Rockwood 2005). It has been used to improve and direct services for the older population to improve their experience of health care system and their outcomes. It has also proved useful as a prognostic indicator as to who will benefit from which interventions.

Currently there are 400,000 care home residents in the UK (Age UK 2019). Individuals with a CFS of 7, 8 and 9 are extremely dependent and will probably be in the last year of their life. They are very unlikely to survive after interventions such as CPR or intensive care support. It is also unlikely that, if they become very unwell with another acute illness such as bronchopneumonia or COVID 19, they will survive the episode and should have supportive treatment, ideally in the community (NICE 2020).

Individuals with a CFS of 5 and 6 are susceptible to any small insult to their health and can decompensate quickly. Critical care data suggests that they will not benefit from artificial ventilation and life support, if they become very unwell from either general illness or COVID 19. However, they may have recover, with support in a secondary setting if they do not become critically ill and should be offered this option as is normal practice.

Individuals with a CFS 1 to 4 are generally independent with good physiological reserve. They would benefit from all interventions in secondary care including ITU and CPR unless they decline it. Importantly this is not age related.

Specific Studies related to Frailty - pre COVID pandemic

It is important that individuals and their health care providers feel confident that decisions made about levels of care are based on evidence, not just a reaction to acute circumstances. Therefore, detailed below are studies that were conducted before 2019

1. Emergency Surgical Outcomes in Frail Patients

Frailty is associated with a significantly increased risk of post-operative mortality and morbidity, irrespective of age. Additionally, increasing frailty score is more independently associated with increased level of care on discharge, and more predictive than admission care level. Frailty scoring should therefore be integrated into routine practice to aid decision-making with older surgical patients.

In traumatic spinal injury, increasing frailty using the modified Frailty Index (mFI) in patients under 76 years independently predicted mortality, length of stay and adverse events. Over 76 years the mFI it was not an independent predictor but needed to be taken in conjunction with age and total motor score on admission.

2. Elective Surgery Outcomes

In the USA a large scale study (14,530 patients) showed a high frailty score was associated with significant morbidity, mortality and readmission across elective surgery of many different fields of surgery. An earlier review in the UK found that pre-operative frailty was predicts post-operative mortality, complications and length of stay on older patients (mean age 75-87)

3. Emergency medical admissions in frail older patients in the UK

CFS grade	Length of stay	Readmission rate	In-patient mortality	Care intentions	Service referrals	Post-discharge support
1	4	4%	2%	Detect and manage geriatric syndromes e.g. delirium	General internal medicine	Self-care
2	5	7%	2%			
3	7	11%	2%			
4	8	13%	3%			
5	10	15%	4%			
6	12	15%	6%			
7	13	14%	11%	Think about palliative vs. restorative care	Geriatric medicine	Transitional care
8	12	10%	24%			
9	10	13%	31%			

The table for the Acute Frailty Network in the UK shows that high mortality and readmission rate for patients with CFS 7,8 and 9. Importantly if between 10 and 14% are readmitted in 30 days they will have the same high mortality rates.

Critical Care Outcomes pre 2019

The only study which included patients with a CFS of above 5 shows the mortality rate in ICU and at 30 days to be

Author, year	Setting	Sample size	Age	Frailty	ICU mortality	30-day mortality	Predictors of poor outcomes
Zampieri, 2018	Brazilian ICUs	24,494	Mean 75.7	MFI ¹ non-frail (=0), pre-frail (MFI=1-2); frail (MFI ≥ 3)			In-hospital mortality 28.8%; in a multivariate analysis, frailty OR 2.4 for in-hospital mortality
Darvall, 2019 ¹²	Australian/ New Zealand ICUs	6203	>80	CFS≥5			In-hospital mortality 17.6% v 8.2%, OR 1.87
Guidet, 2020 ¹³	European ICUs	3920	Median 84	CFS median 4 (3-6)	72.5%	61.2%	Age Hazard Ratio 1.02/year; SOFA 1.15/point; CFS 1.1/point
Muessig, 2018	German ICUs	308	Median 84	CFS≥5	22.4%	42.4%	CFS OR 1.4 for 30-day mortality (multivariate analysis)
Langlais, 2018 ¹⁴	French ICU	189	Mean 74	CFS≥5			CFS OR for in-hospital mortality 1.3
Fronczek, 2018	Polish ICUs	170	>80	CFS≥5	47.6%	40.4%	SOFA score (OR=1.16), emergency admission (OR=5.1) and frailty (OR=2.3) increased the risk of ICU death
Zeng, 2015 ¹⁵	Chinese specialized geriatric ICU	155	Mean 82.7	Frailty Index			Each 1% increase in FI was associated with an 11% increase in the 30-day mortality risk adjusting for age, sex, and prognostic scores
Shears, 2017 ¹⁶	Canadian ICUs	150	Mean 63.8	CFS			CFS OR 1.2 for ICU, OR 1.19 for hospital mortality
Silva-Obregon, 2020 ¹⁷	Spanish ICU	53	Mean 78		37.7%	52.8%	CFS≥5 Hazard Ratio 4 for one year survival after adjustment for sociodemographics, comorbidities, severity scores, treatment intensity and complications

excessively high. Hence, the cut off CFS for the COVID pandemic is 5 for patients over 65 years published 31.3.2020 (See appendix 2).

Covid data from Italy and china to be added or not ??

Conclusions

Covid 19 has focused attention on which patients will benefit from care in hospital or in the community. However, there is a body of evidence gathered before the pandemic that shows increasing frailty is associated with poor outcomes due to lack of physiological reserve in those individuals. Particularly patients scoring 7-9 on the CFS, a well validated scoring system. Advanced Care Planning for this population should ideally have been completed previously, but in an overstretched health care system that has not always been possible. In any conversations taking place now and over the next few months, it is important that patients and their relatives are included in all conversations. Also, that they receive correct information based on evidence, so they can understand why certain treatments such as CPR, ITU or sometimes secondary care may not be in their best interests.

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Appendix 1

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.
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Appendix 2

NICE National Institute for Health and Care Excellence

COVID-19 rapid guideline: critical care in adults
(Last update: 27 March 2020)

