Canadian Geriatrics Society

COVID-19 AND ETHICAL CRITICAL CARE TRIAGE – UTILIZING THIS PERIOD TO FURTHER KNOWLEDGE TRANSLATION OF FRAILTY AND ICU EVIDENCE DURING A PANDEMIC AND BEYOND

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Abstract

Older Adults appear to have a higher mortality from COVID-19 compared to other members of the population. However, significant heterogeneity exists in outcomes within the older adult population. Hence, it is important to identify those people who may or may not survive their critical illness related to COVID-19, and those people who may or may not survive in the near future even if they recovered from their critical illness. Appropriate critical care use can then be determined and advised, no matter the degree of resource availability. This follows the accepted ethical principles of utility and fairness. The determination can be done following accepted well thought out pathways in association with patient wishes. The Canadian Geriatrics Society (CGS) recently advocated for an approach in assessment similar to the UK sourced "NICE COVID-19 rapid guideline: critical care." This approach is adapted here to aid in the ethical evidence-based triaging of older adults (65 and over) admitted to hospital (Figure 1). This thought process can also be utilized in advance care planning discussions to assist primary care providers in community care of older adults in not only a COVID-19 pandemic environment but also beyond. This serves to facilitate improved knowledge translation of frailty and ICU evidence.

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advocacy, frailty

Case:

An 81-year-old male presents to the ED in hypoactive delirium, temperature 37.6°C, 02 saturation 84%, BP 102mm/68mm, brought in by Emergency Health Services. He lives at home alone, and upon calling his daughter she notes an acute change in mental status. Two weeks prior he was able to ambulate with a single point cane, required some personal care assistance to facilitate safe bathing, assistance with medication reminders, but was able to perform basic meal preparation. There has been no recent out of country travel or known positive COVID-19 contacts. How would one approach discussions around triaging of this patient?

Presentation to ED:

Older adults may not have classic COVID-19 presentations, and hence may inadvertently slip through the normal screening process.[1] Classic fever, cough, and dyspnea may be absent. Atypical presentations are more common, as only 20-30% of COVID-19 positive older adult patients present with true fever. A lower threshold is thought to be important in diagnosing fever (CDC noting fever as 100.4°F or 38°C).[1] Tachypnea, hypoxia (without shortness of breath), delirium, diarrhea, malaise, falls, functional decline, reduced appetite are common features.[2] Keeping these features in mind helps to determine general medical care versus COVID-19 care and prevents healthcare staff exposure.

It is important to apply the Clinical Frailty Scale (CFS – see Figure 2) to all patients 65 and over on presentation to the ED to help establish an evidence-based course of care.[3] This thought process is particularly important in the older adult population as they are the group with the greatest heterogeneity in outcomes. The determination of frailty requires an understanding of the person's function 2 weeks prior to the onset of COVID-19 symptoms and not based on the function at presentation to the ED when acutely ill (for tips on proper use of CFS see Figure 3).

COVID-19 is unique in that as of April 2020 we can only provide organ support, as we currently do not have validated, effective targeted therapeutics. This makes the intensive care management process dependent on the patient's physical and cognitive ability to recover. Patients' vulnerability to stressors and decline in health from illness is defined as frailty.[4] The cytokine storm that is affiliated with COVID-19 especially in critical illness, when inflammatory markers are elevated, is also associated with sarcopenia (muscle wasting).[2,4] Frailty progression and sarcopenia are interconnected and are important physiological processes to consider in discussions on critical care outcomes in older adults.

All information gathered regarding a patient is utilized to base decisions on admission of individual adults to critical care.[5] The likelihood of their recovery, considering the chances that a person will improve from their critical care admission to an outcome that is acceptable to them is the basis behind appropriateness for critical care. Understanding a patient's wishes as to what may be acceptable to them is a key cornerstone in this process, facilitated by tools that already exist in patient-centered care (e.g. www.advancecareplanning.ca).

Triaging to Critical Care:

The Canadian Geriatrics Society COVID-19 Resource Allocation working group has published a statement on the utilization of the clinical frailty scale in triaging (please see https://cgjonline.ca/index.php/cgj/article/view/445/517).[3] The term "ethical triage" is utilized to understand the rationale between applying futility in critical care versus forced rationing of resources. They advocate for an approach akin to the NICE rapid COVID-19 guideline in critical care (Figure 4).

The complications from COVID-19 can include hepatic, renal, neurologic and cardiac injury.[6] With this, the risk of developing geriatric syndromes of delirium, loss of mobility, incontinence, and functional dependence are concerning. The CFS has been studied to address prognostication in various environments. The use of a score of CFS 5 in ICU (as opposed to Frailty Phenotype (FP)) has been shown to indicate a significant difference in mortality in hospital and 6 months later between older adults with CFS ≥5 and CFS <5.[7] As can be seen in the link below, survival in a non-ICU setting is reduced in the CFS ≥5 categories (see www.cmaj.ca/content/173/5/489/tab-figures-data).[8]

Survival 1 year after ICU admission was further looked at in a Canadian cohort of patients, studying in-hospital mortality, adverse outcomes, readmissions, health related quality of life, and functional dependence (see www.cmaj.ca/content/186/2/E95/tab-figures-data).[9] A systematic review and meta-analysis also concluded that frailty (e.g. CFS ≥5) in adults admitted to ICU is associated with higher hospital mortality (RR 1.71), long-term mortality (RR 1.53), and these patients are less likely to be discharged home (RR 0.59).[10]

NICE has developed a COVID-19 rapid guideline: critical care document, suggesting the use of a decision tool (see www.nice.org.uk/guidance/ng159/resources/critical-care-admission-algorithm-pdf-8708948893) to determine if critical care is "considered appropriate".[5] This is currently accepted practice in the UK, and the CGS COVID-19 Resource Allocation working group has suggested that an approach similar to the NICE pathway be utilized in Canada to aid in the determination of critical care appropriateness for older adults with COVID-19 (Figure 4).[3] Determining who is "considered appropriate" requires informed, evidence-based decision making, evaluation of patient beliefs, and understanding of possible outcomes, expectations, and time course. To facilitate this, point of care information has been applied to the "NICE COVID-19 rapid guideline: critical care in adults" to facilitate knowledge translation (Figure 1).

A separate group of UK clinicians with the NHS developed another tool, albeit it is not NHS policy and has not been accepted by national associations.[11] The tool utilizes age, frailty and underlying conditions. Some criticize its use as a blanket tool, and in a sense double counting age as inherently frailty does also increase with age. It also includes male gender as a negative factor, where men also are at higher risk for the underlying conditions. Hence, its use solely without clinical judgment is not advised and a significant amount of concern over its use has been expressed in recent twitter discussions. Hence, the current article does not include that tool.

Finally, there are some researchers looking at severity of illness and metrics that indicate need for critical care (e.g. admission O2 saturation <88%, D-Dimer >2500, Ferritin >2500, CRP >200). These will be unlikely to be the sole basis upon which to make triaging determinations but they can assist in informing patient discussions on critical care utilization and outcomes.

Further to this, when resources become limited and healthcare systems overwhelmed, triage determination may involve additional factors. Ethicists currently are creating frameworks to address this. However, becoming adept in properly applying the CFS through pathways like the "NICE rapid guideline COVID-19 critical care" tool is an important step in ethical, evidence-based, patient centered decision making and appropriate triage.

This thought process can also be utilized in advanced care planning discussions to assist primary care providers in community care of older adults amid a COVID-19 pandemic and beyond. Tools to assist with this include www.advancecareplanning.ca. As the knowledge of frailty and critical care perpetuates, the next frontier beyond COVID-19 will be better equipped in evidence informed, patient-centered care of older adults with and without frailty.

Conclusions

Key Points include:

1. The Canadian Geriatrics Society (CGS) advocates for an approach akin to the UK sourced NICE rapid guideline. The "NICE COVID-19 rapid guideline: critical care in adults" is adapted here to aid in the ethical evidence-based triaging of older adults (65 and over) admitted to hospital (See Figure 1).
2. Determine frailty based on the Clinical Frailty Scale (CFS) 9-point scale, insuring the CFS is employed properly (see Figure 3).[8,12]
3. Utilize the best quality evidence and patient wishes to guide patient discussions regarding use of ICU resources. Critical care outcomes and frailty have been studied, an example being a recent systematic review and meta-analysis by Muscedere et al ICM 2017 indicating higher hospital mortality, long-term mortality, and reduced likelihood of discharge home. COVID-19 is associated with longer ICU stay, no current effective therapeutic as of April 2020 (hence only able to provide organ support), and isolation measures – all of which are associated with geriatric syndromes like delirium, sarcopenia, incontinence, and functional decline in the older adult.
4. Frailty and critical care outcomes can guide advance care discussions during the course of hospitalization, such as survivorship expectation, as well as considering time-limited trials.
5. A similar approach can be used to guide hypothetical examples during advance care planning discussions in community care. Utilizing this time to advance knowledge translation of frailty and critical care evidence is advantageous as it serves to benefit future healthcare. The next frontier beyond COVID-19 will be better equipped in evidence-informed, patient-centered care of older adults with and without frailty.

Figures:

Figure 1. UK NICE COVID-19 rapid guideline critical care adapted to include evidence to inform discussions on goals of care and ethical triage.[5]

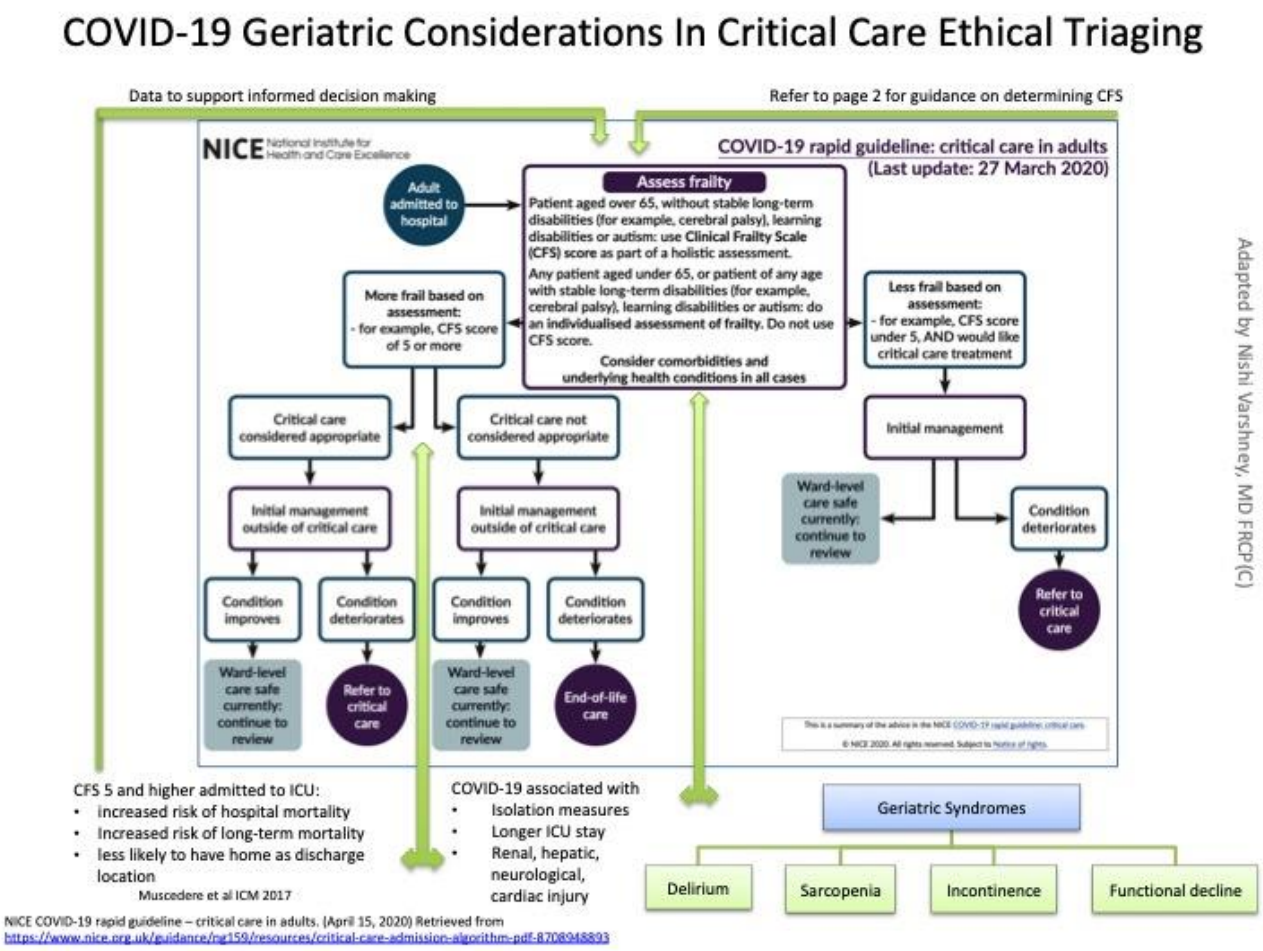
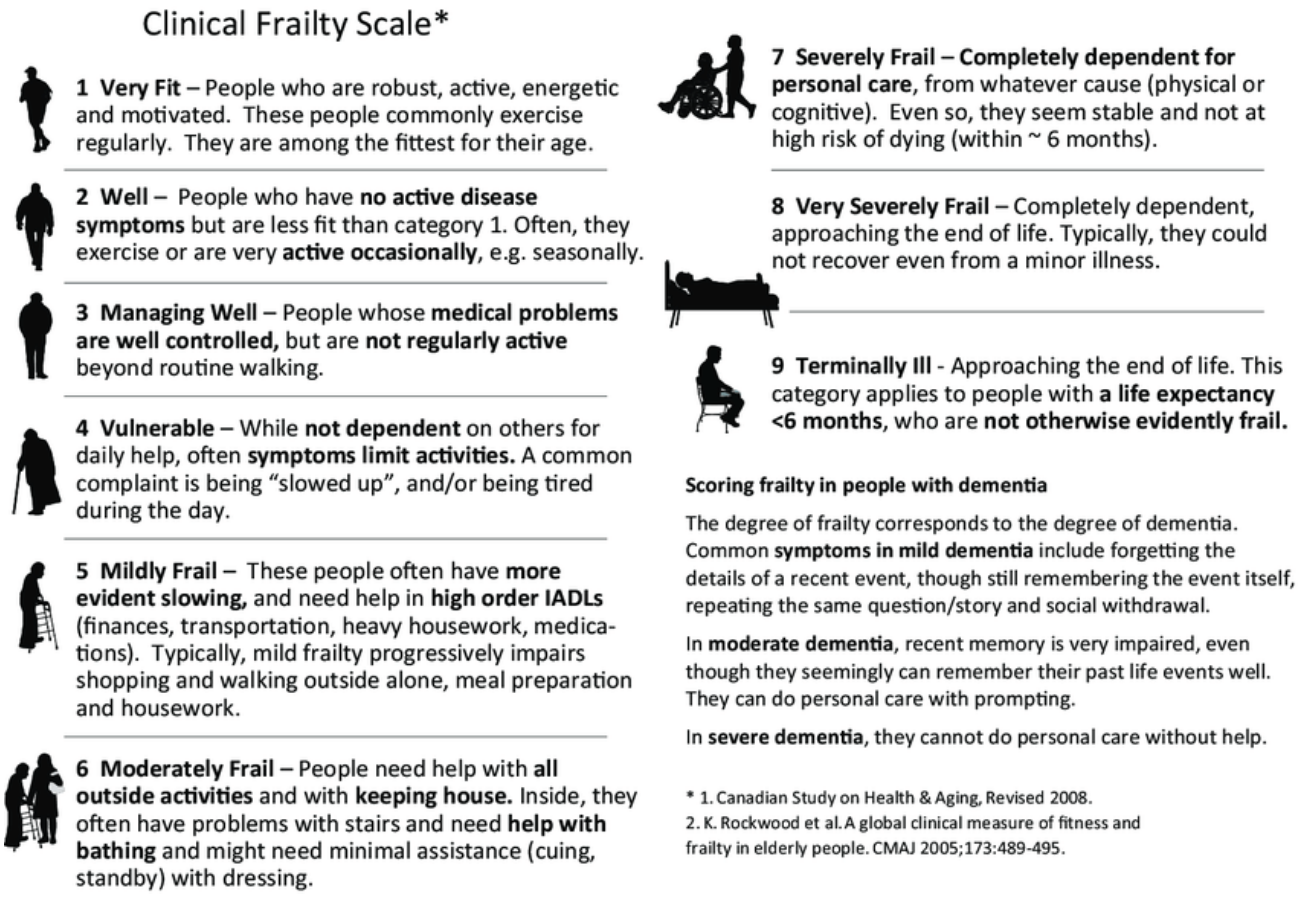


Figure 2. The Clinical Frailty Scale, 9-point scale.[8]



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.

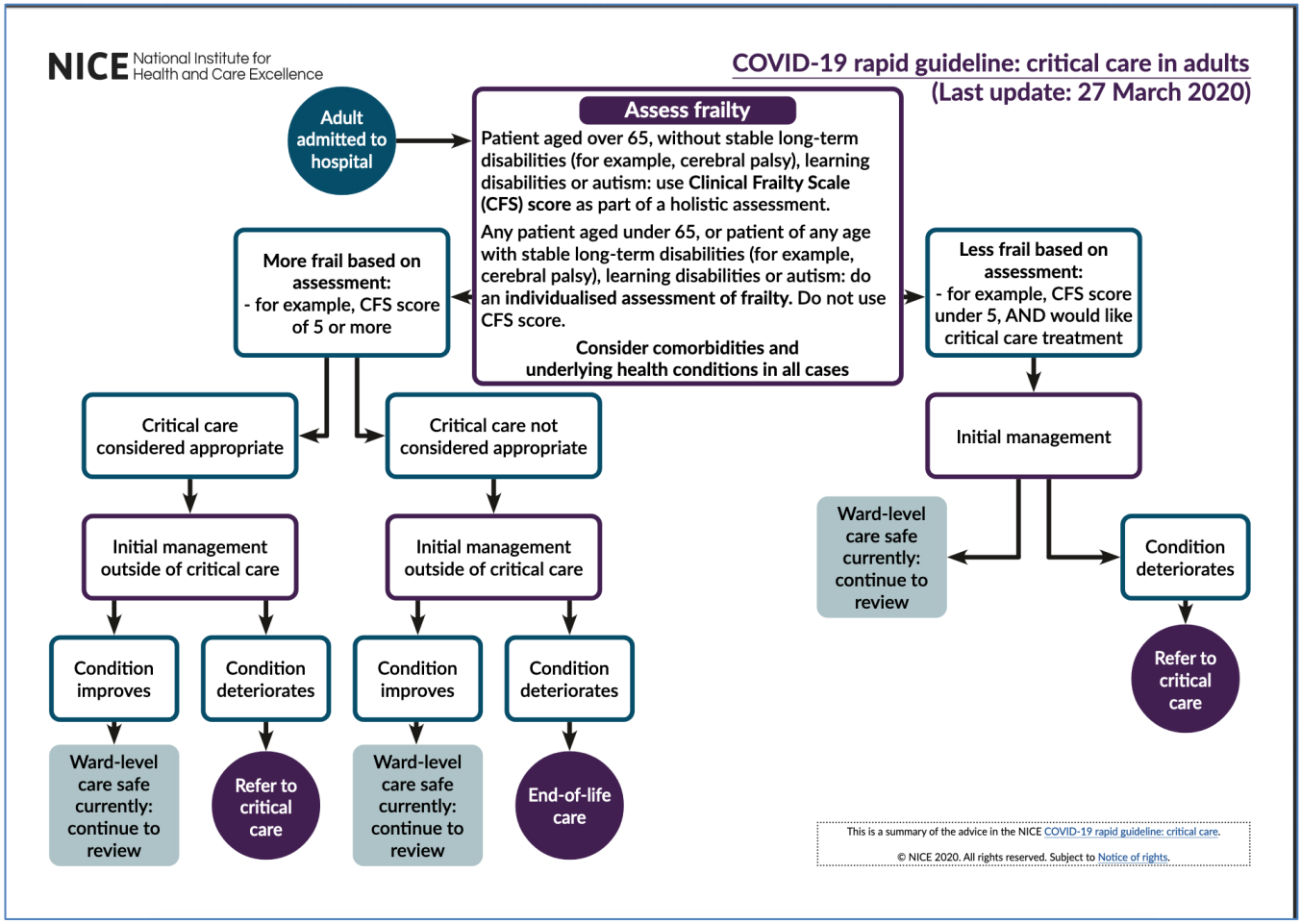
In **moderate dementia**, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

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.

Figure 3. Top 9 tips to aid in use of the Clinical Frailty Scale.[12]

Figure 4. UK NICE COVID-19 rapid guideline: critical care in adults.[5]



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