

INTRODUCTION

- Survival to discharge following in-hospital cardiac arrest decreases dramatically in the elderly, who often have associated comorbidities and frailty, compared to the general population.
- Frailty, a syndrome of impaired physical function and reduced physiological reserve, is associated with mortality, hospitalization, and physical dependence. Recently it has also been associated with decreased survival to discharge following in-hospital cardiac arrest.
- Cardiopulmonary resuscitation (CPR), although a lifesaving procedure for some following cardiac arrest, may be a futile procedure for others, and arguably harmful by depriving individuals a peaceful and dignified death.
- During do-not-resuscitate (DNR) discussions with patients at risk of cardiac arrest, a lack of evidence and tools to determine whether CPR is futile, impedes the ability of clinicians to inform patients about realistic outcomes.
- Presently, the scoring tools to predict survival to discharge following in-hospital cardiac arrest are complex and impractical, as they depend on acute factors of illness, which can change rapidly through the course of the illness.
- Currently, there is limited research about the association between frailty and survival to discharge following in-hospital cardiac arrest in Canada.

OBJECTIVES

- The objective of this study is to determine the sensitivity and specificity of the Clinical Frailty Scale (CFS) score with respect to CPR survival for hospitalized patients over age 60 in Regina, Saskatchewan.
- This study will also aim to examine whether frailty is associated with poor hospital outcomes and identify a threshold CFS score in which CPR is futile in Regina, Saskatchewan.

METHODS

A retrospective chart review of patients who underwent CPR was conducted to determine whether the sensitivity and specificity of a CFS score on CPR survival can be reproduced in Regina, Saskatchewan. This is based on a study published in June 2020 in "Age and Ageing" that showed in patients over age 60 who had a bedside CFS score ≥ 5 , none survived CPR to hospital discharge¹.

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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- A retrospective chart review of the Code Blue Database maintained at the Regina General Hospital and Pasqua Hospital was conducted to identify eligible patients with the following inclusion criteria:
 - Over age 60
 - Hospitalized/admitted patients to Regina General Hospital or Pasqua Hospital
 - CPR performed on patient in-hospital
- Code blue records of the most recent 200 charts were reviewed with the following exclusion criteria:
 - Alternative code blue diagnosis (ex. hypoglycemia, syncope, etc.)
 - No documented or incomplete physiotherapy assessment
- Demographic characteristics were extracted by removing any identifying features.
- Frailty score was retrospectively determined using variables extracted from physiotherapy assessments which provide information on the functioning of Activities of Daily Living, Instrumental Activities of Daily Living, as well as mobility assistance devices.
- A multidisciplinary team consisting of a physiotherapist, nurse, physician, patient and family partner, and medical student independently reviewed eligible patients to provide a CFS score, and to test interrater reliability of the CFS score.



METHODS CONT'D

- Demographic characteristics will be summarized using descriptive statistics.
- Sensitivity and specificity of CFS scores >4 as a predictor of CPR survivorship will be calculated.
- Interrater reliability of the score will be evaluated using an interclass correlation coefficient.

ANTICIPATED RESULTS

- Frail patients will have a lower likelihood of surviving CPR to hospital discharge following in-hospital cardiac arrest.
- In patients over age 60 who have a bedside CFS score of ≥ 5 , none will survive CPR to hospital discharge following in-hospital cardiac arrest.
- Interrater reliability will be high, as the CFS is a simple bedside assessment that can be easily calculated.

IMPACT

- The results of this study will assist clinicians in clinical decision making and patient discussions.
- Clinicians can use the frailty score as a guide when making clinical decisions regarding whether CPR will be futile.
- During discussions with patients about end-of-life care, the frailty score can be used to inform and guide patients about the realistic outcomes of resuscitation.

REFERENCES

- Ibitoye SE, Rawlinson S, Cavanagh A, Phillips V, Shipway DJ. Frailty status predicts futility of cardiopulmonary resuscitation in older adults. Age and ageing. 2021 Jan;50(1):147-52.

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