

Increasing Provider Knowledge of Geriatric Trauma Frailty Assessment: A Quality Improvement  
Project

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Submitted to: Heather Wiggins, DNP, FNP-C, Co-Chair

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### Abstract

Using the Institute for Healthcare Improvement Model as a framework, the knowledge gap of geriatric frailty awareness warrants questioning and standardization in clinical practice. Evidence suggests that early identification of frail geriatric patients is required to anticipate the management of chronic conditions and discuss goals of care, while attending to acute trauma needs as suggested by the American College of Surgeons (ACS) directives for geriatric Trauma Quality Improvement Project (TQIP) Guidelines. The aim of this quality improvement (QI) project was to create an educational presentation on the Rockwood Clinical Frailty Scale (CFS) to improve provider knowledge on geriatric frailty and implement this assessment into the electronic health record (EHR). This QI project was a collaborative effort between a Doctor of Nursing Practice (DNP) student, trauma medical and nursing directors, and clinical informatics between January 2024 and May 2024. Clinical vignettes were administered to obtain pre and post education scores. Paired t-tests revealed statistically significant scores after the CFS education was provided to trauma providers. The author concludes further assessment of resource allocation and its cost effectiveness are needed to accommodate geriatric frailty for future clinical practice.

## **A Quality Improvement Project: Increasing Provider Knowledge of Geriatric Frailty Assessment**

### **Problem Description**

As the U.S. geriatric population grows, trauma centers (TC) are seeing increasing numbers of older trauma patients (American College of Surgeons (ACS), 2019; McDonald et al., 2016). Geriatric patients, defined as patients 60 and older in trauma settings, are more injury-prone due to their living situations and lifestyles (American Association for the Surgery of Trauma, 2023; Aziz et al., 2019; CDC, 2023; Konda et al., 2020). Aging brings physiological limitations, increased vulnerability, and reduced stress tolerance, known as frailty (Shoultz et al., 2019). Literature suggests that geriatric frailty is connected to negative health outcomes such as increased in-hospital complications, longer hospital stays, readmissions, and discharges to skilled nursing facilities for extensive rehabilitative care (Bryant et al., 2019; Carter et al., 2022; Hamidi et al., 2019). The Center for Medicare and Medicaid Services project the overall expenditure for geriatric patients is anticipated to grow by 30% by the year 2025 (Gregg et al., 2020).

The trauma department (TD) where this quality improvement (QI) project took place has seen a rise in geriatric trauma and the complexity of care for this population. Currently, providers lack the knowledge to assess geriatric trauma frailty, leading to non-standardized care. Internal medicine and palliative care usually only start managing chronic conditions 2-3 days post-admission. However, evidence shows that early frailty assessment from time of admission is essential to anticipate chronic condition management and discuss care goals, alongside addressing acute trauma needs (Aziz et al., 2019; Ho et al., 2021; Karamanukyan et al., 2017).

Enhancing provider knowledge of geriatric frailty not only coincides with the ACS directives for the geriatric Trauma Quality Improvement Project (TQIP) but also has the potential to advance comprehensive geriatric care in an inpatient setting (2023).

### **Available Knowledge**

A literature search using PubMed, CINAHL, MEDLINE, and Ovid (2016-2023) identified eleven relevant articles. Search terms included *geriatric trauma, frailty assessment, provider perception, and barriers*. This review evaluates the evidence strength for incorporating frailty assessment into practice. The Johns Hopkins Appendix H Synthesis Process and Recommendations Tool guided the synthesis to support practice changes and promote evidence-based care (Dang et al., 2022).

Apart from incorporation of geriatrician consultation, recommendations for the clinical management plans for frail patients remain lacking (ACS, 2023; Joseph et al., 2023; Karamanukyan et al., 2017; Taylor et al., 2017). Research is limited in assessing provider perception and awareness of the topic. Barriers include the inability to operationalize frailty and its components, lack of specialized geriatric training, and prioritization of immediate acute concerns before further assessments (Karamanukyan et al., 2017; Shoultz et al., 2019; Taylor et al., 2017). In one retrospective qualitative study, frailty was based on clinical judgment according to clinician experiences, however awareness and utilization of assessment tools are insufficient. (Taylor et al., 2017). Moreover, there are limited resources, such as staffing and time, to identify and manage this vulnerable group (Maloney et al., 2023; Shoultz et al., 2019; Taylor et al., 2017). The use of multidisciplinary teams including a geriatrician, rehabilitation specialists, palliative care, social work, nutritionist, and pharmacy for collaborative management

has proven to improve outcomes (ACS, 2023; Bryant et al., 2019; Joseph et al., 2023;). However, cost-effectiveness in utilizing various healthcare specialties remains to be fully evaluated (Taylor et al., 2017; Karamanukyan et al., 2017).

Another variance in the research are the tools utilized to assess frailty. Commonly, the utilization of the Injury Severity Score (ISS) is used to assess the gravity of bodily damage but falls short in adequately predicting patient outcomes (Carter et al., 2022; Cords et al., 2021; Hamidi et al., 2019; Joseph et al., 2023; Karamanukyan et al., 2017; McDonald et al., 2016; Tejiram et al., 2021). The ISS fails to consider pre-existing medical conditions, health attitudes, and individual baseline disability (ACS, 2023; Bryant et al., 2019; Karamanukyan et al., 2017). The literature also notes a lack of feasibility, reliability, and validity in clinical frailty assessment tools (Joseph et al., 2023; McDonald et al., 2016; Tejiram et al., 2021). Frailty assessments also widely vary in different settings and by type of clinical staff as they can be conducted by either providers or bedside nurses. There is a lack of unanimous agreement on the most effective tool for identifying frailty and feasibility issues with utilizing these tools in the clinical setting (Cords et al., 2022; Hamidi et al., 2019; McDonald et al., 2016). Moreover, these tools require significant time and patient mobility which is challenging for geriatric trauma patients due to their physical conditions and injuries (Carter et al., 2022; McDonald et al., 2016).

### **Rationale**

Evaluation of the Root Cause Analysis (RCA) (See Appendix A) identified varying provider competency, prioritization of acute injuries, and increasing geriatric injuries as contributors to the lack of standardized frailty assessment in clinical practice. Using the information procured by the RCA, an educational seminar on clinical frailty assessment was created and implemented

into clinical practice. The project utilized the IHI Model for Improvement (MFI) framework; it was selected for its evaluation ability, ease of applicability, and interdisciplinary use (IHI, n.d.).

The Clinical Frailty Scale (CFS) is a validated and convenient tool used by clinicians. It assesses patients' clinical history and assigns a score ranging from 1 (indicating very fit) to 9 (indicating terminally ill) (Rockwood et al., 2005). In comparison to the more extensive trauma screening tools, the CFS holds strong predictive value for hospital complications, mortality, and readmissions. Furthermore, it remains a valid, reliable, and practical tool that can be administered in less than a minute (Cords, et al., 2021; Hamidi et al., 2019; LeBlanc et al., 2022).

### **Specific Aims**

This TD will implement the Plan-Do-Study-Act (PDSA) to improve trauma provider knowledge on geriatric frailty using the Rockwood CFS, as recommended by the ACS (Rockwood et al., 2005). Specific aims include improvement of CFS knowledge via post education scores of at least 75% and above by March 2024, training at least 75% of trauma providers by March, and adoption of CFS into the patient electronic health record (EHR) by April 2024.

### **Context**

The TD services a level II trauma, Magnet facility in an urbanized area in Southern California. The department is comprised of clinicians (nine nurse practitioners, one physician's assistant, and ten trauma surgeons), one nurse manager, one medical director, one nursing director, a clinical nurse specialist, and a variety of ancillary office staff (i.e. registrars, nurse investigators, and office secretary). The trauma team is a clinical subcomponent of the TD consisting of a nurse practitioner or physician's assistant and one surgeon. Daily, this trauma

team responds to all trauma activations of on average 15-20 patients, while also managing the care of 10-30 admitted patients.

Patient demographics vary widely regarding injury type, insurance status, socioeconomic status, varying cultural groups, and ages. Currently, the frequency of trauma activations and injury severity differs daily with most geriatric traumas resulting from mechanical falls. Trauma consultations, also known as activations, are commonly initiated by ED physicians while few are initiated by a hospitalist for admitted patients.

### **Interventions**

A QI team was assembled to include both the nursing and medical trauma directors, nurse manager, and a nurse practitioner (NP)/DNP student. Nursing and Medical Trauma directors assisted with staff buy-in and allowed for real-time feedback throughout the PDSA cycle. The nurse manager aided in resource management and allotment of time during staff meetings. Permission was obtained to utilize the CFS in clinical practice (Appendix G). The NP/DNP student led the project, created, and implemented an educational seminar on the CFS for trauma providers. The student also developed pre- and post-education questionnaires with five clinical vignettes to assess providers' frailty assessment skills (See Appendix D). These five clinical vignettes were distributed before the educational presentation to evaluate baseline data. The same clinical vignettes were given after the presentation to assess for provider competency of frailty screening. A pretest survey identifying provider attributes was conducted for descriptive analysis (LeBlanc et al., 2022).

A 10 minute PowerPoint presentation on frailty was performed during the monthly staff meeting. The focus of the presentation was to educate providers and staff on the Rockwood

Clinical Frailty Scale as described in the *ACS TQIP Geriatric Trauma Management Guidelines* (2023) (Rockwood et al., 2005). This presentation was also emailed to all trauma provider staff as a resource guide. It included the background information for the project, the current practice, regional and national resources, and its impact on patient outcomes and future standardized procedures.

Upon completion of the educational presentation, providers were to complete the CFS and document its score into the electronic assessment note as a part of their Tertiary Survey (TS). Primary survey is the initial and rapid assessment of the patient including airway, breathing, circulatory, issues while secondary survey assesses disabilities and exposure. Within twenty-four hours of admission, the TS were conducted to assess missed injuries and other disabilities possibly undetected. The survey instrument was based upon comprehensive review of the literature including the *ACS TQIP Geriatric Trauma Management Guidelines* (2023). The intervention included a 5-question post-education quiz to assess knowledge comprehension and application of the geriatric frailty scale (See Appendix D).

### **Measures**

The primary outcome measure for this project included increased knowledge reflected by quantitative measures in pre and post-education surveys. This was demonstrated by at least 75% of providers scoring at least 75% or higher in the post-education testing. Process measures included the percent of provider participants who attended the educational presentation and percent of completed surveys in March 2024. Other measures included the number of provider participants for the educational presentation, the number of completed surveys over two weeks after the educational presentation, and the number of screenings documented into the EHR.



**Data Collection and Management Plan**

Data collection was performed by the DNP student. Data included the total number of providers versus participants of the educational presentation and the number of completed pre and post surveys. Structured questionnaires with five fictional clinical vignettes were collected and compared for agreement on appropriate frailty scores. Data analysis was extrapolated from surveys from April 2024 through May 2024. Data was documented within a Health Insurance Portability and Accountability Act (HIPAA) compliant, Microsoft Excel format and then converted into run charts. These run charts were reviewed with the Trauma directors to evaluate and monitor progress. Analysis aided in determining if the intervention was successful.

**Analysis**

Descriptive statistics were performed on provider demographics of age, gender, years in profession, and educational background to analyze qualitative data. For the five clinical vignette quiz, a paired t-test was used to compare the percentage of agreement before and after the educational intervention.

**Ethical Considerations**

This education-based intervention project involved healthcare professionals completing pre- and post-education surveys on geriatric frailty, without patient interaction. The project was reviewed by medical and nursing Trauma directors where the QI project took place and the Institutional Review Board at OHSU. Participants were informed via email, with voluntary and withdrawable survey participation. Responses were anonymous, with demographic data (i.e. gender, role, and years of experience) collected and stored securely. HIPAA did not apply as there was no patient interaction or data use.

### Project Timeline

The project timeline started April 2024 and ran through May 2024. The tasks and dates are detailed in Appendix B.

### Results

The project was implemented from April 22, 2024 to May 1, 2024. Data was collected after the educational seminar, compiled in an Excel spreadsheet, displayed on a run chart, and analyzed using a paired t-test. A run chart was performed with a median of 1 (Appendix E). Unfortunately, limited data points did not demonstrate a trend or a shift. Surveys were completed by three trauma surgeons and nine nurse practitioners out of twenty trauma providers in total.

A paired t-test was conducted to compare the frailty scores before and after the educational seminar. The results indicated a statistically significant decrease in scoring difference, with a mean difference of -0.68 (95% CI: -0.51 to -0.86). Results of the paired- t test show a statistically significant difference between pre and post education scores (Mean= 0.80, SD= 0.28). This indicates that the educational seminar contributed to an improvement in provider frailty assessment scores.

During this PDSA cycle, providers were limited to frailty screenings for patients 60 years and older who were admitted to the hospital for a minimum of 24 hours. At the end of the PDSA cycle, the team briefly met to discuss modifications to the screening process and potential methods for improving comfort in assessing frailty correctly. Providers were given the opportunity to ask questions about where to document their scores and about the frailty scoring descriptions in detail. With the assistance of clinical informatics, a dot phrase was

created to briefly describe each frailty score with its corresponding numeric value. This dot phrase was embedded in the assessment note of a TS.

### **Demographics**

A total of eighteen out of twenty providers attended the educational seminar via in person and through video conferencing. A total of twelve providers completed the survey; 9 NPs and 3 trauma surgeons. Trauma surgeons had reported 10-20 years of experience. Two NPs reported having < 2 years of experience, five NPs reported 2- 5 years of experience, one NP had 10-20 years of experience, and one NP had over 20 years of experience (Appendix F).

### **Discussion**

#### **Summary**

This project implemented an educational seminar for trauma providers to improve their knowledge of assessing geriatric frailty. Ninety percent of trauma providers attended the educational seminar with sixty percent completing the pre and post-education surveys. Statistically, there is evidence to prove a significant difference in pre and post-education surveys after education was provided. Strengths of this project included quantifying frailty with clear descriptions in adjunct with clinical experience rather than judgment alone.

#### **Interpretation**

The intended outcome of this project was to increase provider knowledge reflected by quantitative data from pre and post surveys. While the PDSA failed to demonstrate pattern shifts or trends due to limited data points, there was an increase in provider knowledge and utilization of the CFS. Through paired t-test, there was statistical evidence to show improvement in frailty assessment scores after education was provided. Moreover, feedback highlighted

positive participant engagement with the material demonstrating that education can be successful in integration and improvement of trauma clinical practice.

The number of Advanced Practice Provider (APP) respondents compared to trauma surgeons was also significant. There were nine out of ten APPs who completed the pre and post education surveys compared to the three out of ten trauma surgeons. In clinical practice for this TD, it is often the NP/PA who collects information from the patient and documents TS assessments. The low number of trauma surgeon participating could have been reflective of time constraints from scheduling, operating room cases, or perceived lack of need to participate.

In review of pre-education scores, NPs with less experience seemed to rate frailty higher in the clinical vignettes compared to those with more clinical experience. This could be a result of preconceived notions on what frail patients may appear to look like and limited trauma experience. Congruent with the literature, clinicians more heavily rely on their experience to define and identify frail patients rather than valid and reliable tools. Many respondents indicated they rely on clinical judgment alone. While this intuitive and analytical approach is valued in the trauma setting, it is limited by insufficient frailty knowledge. Factors affecting frailty knowledge include time, stress, and varied clinical experience (Moloney et al., 2023; Taylor et al., 2017).

### **Limitations**

The participants who completed pre and post education surveys may not have adequately represented the trauma provider team as most of the frailty screenings are performed and delegated to APPs. Professional experience among the team members could

also affect the impact of their pre-education scores given frailty is often based on clinical judgment. An additional limitation was the inability to communicate with patients who remained intubated and not yet identified by police or social work. Frailty assessments could not occur in these patients given the inability to know their baseline cognition and activity level. Lastly, because of the low sample size, it is difficult to interpret the impact of the intervention for generalizability.

### **Conclusion**

Assessing for geriatric frailty improves healthcare outcomes by identifying older adults at higher risk for adverse events; such as falls, hospitalization, and mortality. This quality improvement project served as a starting point for the trauma team to highly consider frailty into patient outcomes and prognosis. Adapting frailty screening aims to categorize risk for future resource allocation. Further research is warranted to investigate the efficacy of these resources for significantly frail trauma patients.

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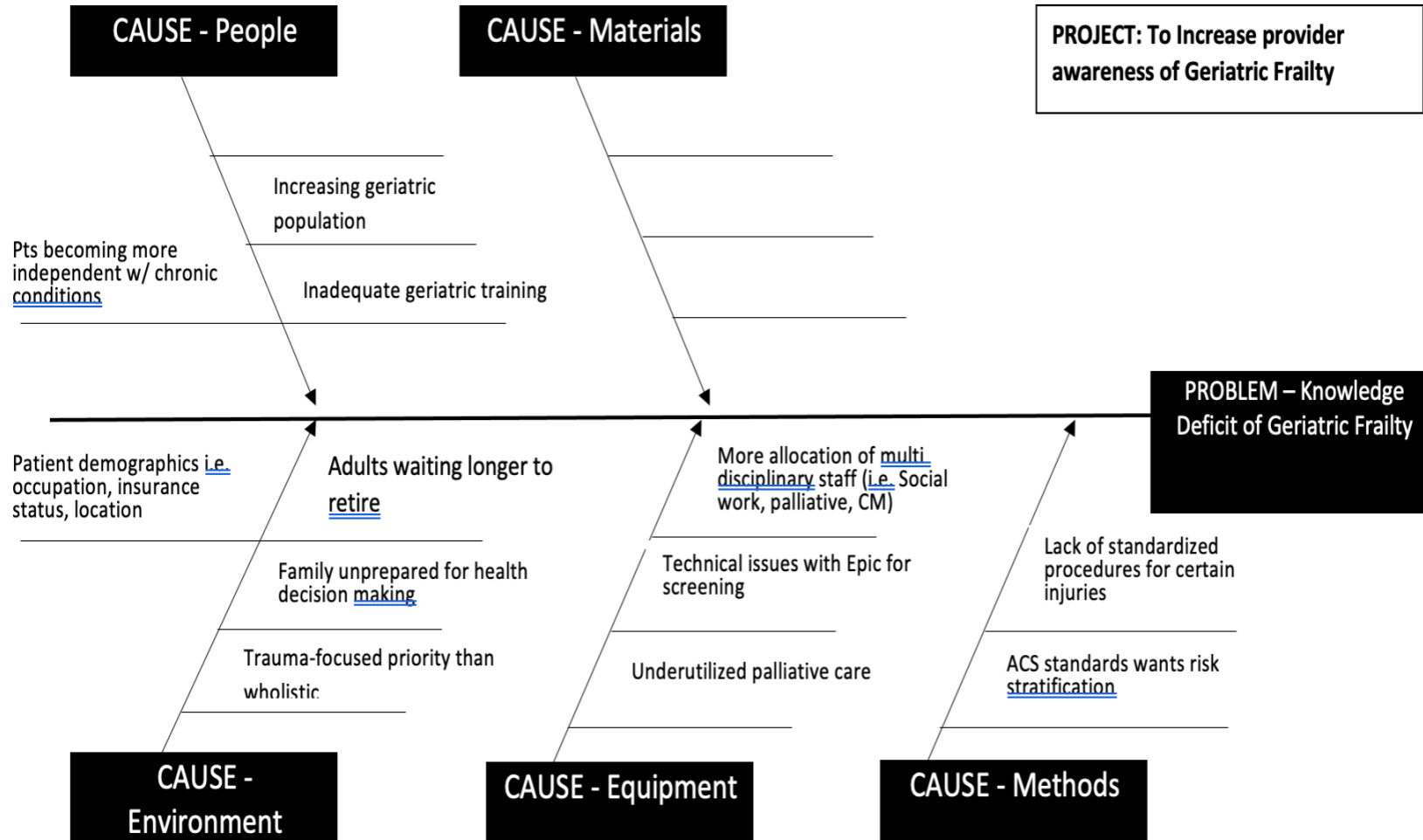
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Appendix A. Root Cause Analysis

Root Cause Analysis

Janice Villegas



Appendix B. Project Timeline

	01/24	02/24	03/24	04/24	05/24
Finalize project design and approach (703A)	X				
Complete IRB determination or approval (703A)		X			
Complete approval from trauma medical and nursing director			X		
PDSA Cycle 1 (703B)				X	
Final data analysis (703B)					X
Write sections 13-17 of final paper (703B)					X
Prepare for project dissemination (703B)					X

## Appendix C. Clinical Letter of Support

Letter of Support from Clinical Agency

Date: March 1, 2024

To Whom It May Concern:

This letter confirms that I, Edna Transon, allow Janice Villegas (OHSU Doctor of Nursing Practice Student) access to complete his/her DNP Final Project at our clinical site. The project will take place from approximately January 8, 2024 to May 2, 2024.

This letter summarizes the core elements of the project proposal, already reviewed by the DNP Project Preceptor and clinical liaison (if applicable):

- **Project Site(s):** Long Beach Memorial Medical Center, 2801 Atlantic Ave. Long Beach, Ca 90806
- **Project Plan:**
  - Identified Clinical Problem: Knowledge Deficit for Geriatric Trauma Frailty
  - Rationale: Using the IHI Model for Improvement as a framework, the knowledge gap of geriatric frailty awareness warrants questioning of current practice. Evidence suggests that early identification of frail geriatric patients is required to anticipate the management of chronic conditions and discuss goals of care, while attending to acute trauma needs as suggested by the American College of Surgeons directives for geriatric TQIP guidelines.
  - Specific Aims: The aim is to adopt, implement, and evaluate provider-based geriatric frailty educational seminar and increase provider knowledge by 75%.
  - Methods/Interventions/Measures: The NP/DNP student will serve as the project lead and will create and implement an educational seminar to teach fellow trauma providers the Rockwood Clinical Frailty Scale. The DNP student will also create pre and post survey questionnaires via paper handout to evaluate geriatric trauma knowledge prior to and after the educational presentation.
  - Data Management: A clinical vignette survey will be utilized and revised to accommodate for geriatric frailty knowledge. It will incorporate principles from current literature and the latest ACS directive to assess appropriate geriatric frailty scoring. Data will be documented within a HIPAA compliant, Microsoft Excel format and then converted into run charts. These run charts will be reviewed with the Trauma directors monthly to evaluate and monitor progress.
  - Site(s) Support: Meeting space within the Trauma Department to conduct the educational seminar, advanced staff notification of project implementation via email, assist in distribution of pre and post questionnaires

During the project implementation and evaluation, Janice Villegas will provide regular updates and communicate any necessary changes to the DNP Project Preceptor.

Our organization looks forward to working with this student to complete their DNP project. If we have any concerns related to this project, we will contact Janice Villegas and Heather Wiggins (student's DNP Project Chairperson).

Regards,

DNP Project Preceptor (Name, Job Title, Email, Phone): Edna Transon, Trauma Program Manager,  
ETranson@MemorialCare.org, (562) 706-9363

  
Signature

  
Date Signed

Appendix D. Geriatric Trauma Education Survey with Clinical Vignettes

<b>Demographics</b>	<i>Please circle one.</i>				
Age:	< 25 years	25-39 years	40-54 years	55-70 years	> 70 years
Gender:	Male	Female	Decline to Answer	Non-binary	
Practice Role:	RN	NP	PA	MD	DO
Years in Practice:	< 2 years	2-5 years	5-10 years	10-20 years	> 20 years
Education:	Certificate	Associate	Bachelors	Masters	Doctorate

**Clinical Vignettes**

*Determine the clinical frailty score.*

1. 70-year-old gentleman is admitted s/p MVA. He has a past medical history of chronic obstructive pulmonary disease with home oxygen, coronary artery disease, and left hip arthroplasty for which he ambulates with a cane. Initial workup revealed stable subarachnoid hemorrhage without neurologic deficits and bilateral pulmonary contusions. On examination, his vital signs are: Temp: 36.5°C, HR 115, BP, 110/60 and SpO2 of 91% on 4L via nasal cannula. GCS 15. The patient is in mild respiratory distress with increased work of breathing and accessory muscle use. At his baseline, he does not complain of any shortness of breath or dyspnea on exertion. He is an ex-smoker who quit 5 years ago after a 30-pack year history. He golfs during the summer and takes nightly walks with his cane.

Very Fit	Fit	Managing Well	Very Mild Frailty	Mild Frailty	Moderate Frailty	Severe Frailty	Very Severe Frailty	Terminally Ill
1	2	3	4	5	6	7	8	9

2. A 71 year-old year old female is admitted s/p ground level fall. She presented to the emergency department after falling over her front wheeled walker and hitting her head. She has a past medical history of coronary artery disease, atrial fibrillation on Eliquis, severe osteoarthritis, and moderate cognitive disorder. Though independent, she lives with her daughter who is her main caretaker for medication compliance and some ADLs. Initial workup revealed a right forehead laceration, subdural hematoma, and pubic rami fractures. Her vitals are: Temp 37.0°C, HR 92, BP 118/75, and 4/10 head pain. GCS 14.

Very Fit	Fit	Managing Well	Very Mild Frailty	Mild Frailty	Moderate Frailty	Severe Frailty	Very Severe Frailty	Terminally Ill
1	2	3	4	5	6	7	8	9

3. A previously healthy 78-year-old gentleman, was at home when he slipped and fell down a flight of stairs in his assisted living facility. He landed on his left side and was unable to get up due to severe pain in his left hip and shoulder. He reports feeling dizzy and disoriented after the fall. He is usually very active as he runs 3 miles nearly daily. He has a past medical history of hypertension, osteoarthritis, and mild hearing impairment. Initial workup revealed left proximal femur fracture and left humeral head fracture. His vitals are: BP 102/64, HR 52, RR 22, Temp 38.9 degrees C, and SpO2 of 91%. GCS 15.

Very Fit	Fit	Managing Well	Very Mild Frailty	Mild Frailty	Moderate Frailty	Severe Frailty	Very Severe Frailty	Terminally Ill
1	2	3	4	5	6	7	8	9

4. A 66-year-old female, was involved in a workplace accident at a manufacturing facility. While operating a piece of heavy machinery, her left index finger was caught in the equipment's moving parts. She has no prior medical history. She lives with her domestic partner who claims they live both active lifestyles bicycling often. Vital signs: BP 120/80 mm Hg, HR 85 bpm, RR 18 bpm, temperature 36.9°C. Initial workup revealed a left index distal phalangeal fracture with tendon injury. GCS 15.

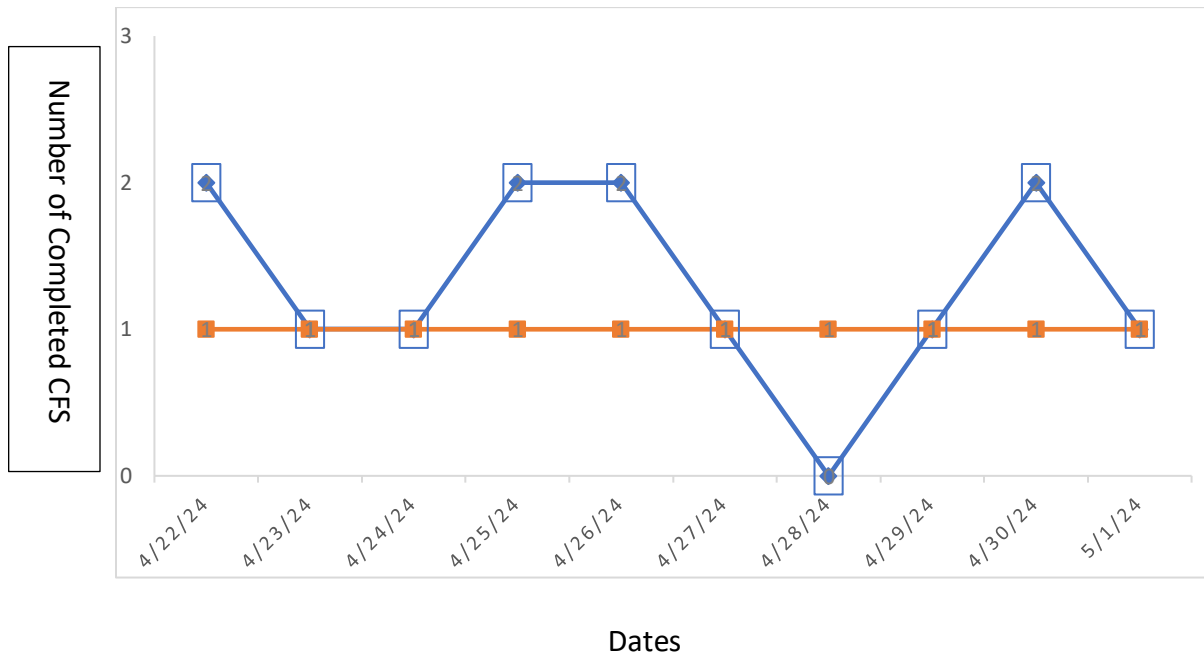
Very Fit	Fit	Managing Well	Very Mild Frailty	Mild Frailty	Moderate Frailty	Severe Frailty	Very Severe Frailty	Terminally Ill
1	2	3	4	5	6	7	8	9

5. A 85-year-old male attacked in his home and fell out of his wheelchair during a break-in by an unknown assailant. His past medical history is significant for dementia, COPD, hypertension, metastatic colon cancer, and type 2 diabetes. He lives in a retirement home where he had a fall 3 weeks ago. He is completely dependent for his activities of daily living including bathing, dressing, and feeding, and the healthcare personnel at the retirement home administer his medications. On examination, patient is on 6L of oxygen via nasal cannula saturating at 92% with a RR of 24-27. He has decreased air entry in his left lower lobe. His BP is 102/56, HR is 110, RR 26, and Temp is 38.5°C. Initial workup revealed paraspinous edema in C4-C7 and left anterior rib fractures. GCS 11.

Very Fit	Fit	Managing Well	Very Mild Frailty	Mild Frailty	Moderate Frailty	Severe Frailty	Very Severe Frailty	Terminally Ill
1	2	3	4	5	6	7	8	9

Clinical vignettes adjusted from B Leblanc, A., Diab, N., Backman, C., Huang, S., Pulfer, T., Chin, M., Kobewka, D. M., Mclsaac, D. I., Lawson, J., Forster, A. J., & Mulpuru, S. (2022). Development and assessment of an educational intervention to improve the recognition of frailty on an acute care respiratory ward. *BMJ Open Quality*, 11(3), e001935. <https://doi.org/10.1136/bmjog-2022-001935> from Rockwood, K., Song, X., MacKnight, C., & Bergman, H. (2005). A global clinical measure of fitness and frailty in elderly people. *Canadian Medical Association Journal*, 173(5), 489–495. <https://doi.org/10.1503/cmaj.050051>

Appendix E. Run Chart Data





Appendix F. Trauma Provider Demographics

Characteristics	
Gender	
Male	3 (25%)
Female	9 (75%)
Age	
25-39	7 (58.3%)
40-54	5 (41.7%)
Practice Role	
NP	9 (75%)
MD/DO	3 (25%)
Years in Practice	
< 2	2 (16.7%)
2 to 5	5 (41.7%)
5 to 10	0
10 to 20	4 (33.3%)
> 20 years	1 (8.3%)

Appendix G. CFS Permission Agreement

## Clinical Frailty Scale Permission Request

Response was added on 31/05/2024 2:28am.

### Clinical Frailty Scale (CFS) Request Form

Request ID	2405301
First name:	Janice
Last name:	Villegas
Job title:	Nurse Practitioner
Department:	Trauma
Institution/Organization:	[REDACTED]
Type of organization:	<input checked="" type="checkbox"/> Not-for-profit
Email:	[REDACTED]
Mailing address:	[REDACTED]
City:	[REDACTED]
Province/State:	Ca
Country:	United States of America
Postal code/Zip code:	[REDACTED]

### Select Which Tool(s)

Which Clinical Frailty Scale tool(s) are you interested to use?	<input checked="" type="checkbox"/> Clinical Frailty Scale
---	--

### Intended Use

How do you intend to use the Clinical Frailty Scale? Please select all that apply	<input checked="" type="checkbox"/> Use in routine clinical care
Will the Clinical Frailty Scale (CFS) be incorporated into an Electronic Medical Record (EMR)?	<input checked="" type="checkbox"/> Yes
Is EMR run by an external vendor? (e.g., EPIC, Meditech)	<input checked="" type="checkbox"/> Yes
Name of EMR vendor	EPIC

**Modification**

Do you plan to make any modification to the Clinical Frailty Scale (CFS) and/or its affiliated tools?  No

**Commercial Development**

Are you planning any commercial development that would incorporate the Clinical Frailty Scale and/or its affiliated tools?  No

This would include, for example, embedding the tool in an app or in a product that is behind a paywall.

**Translations**

Do you plan to use the Clinical Frailty Scale in a language other than English?  No

**Disclaimer**

The Clinical Frailty Scale (CFS), developed by Dr. Kenneth Rockwood, may only be used, reproduced and/or distributed in the provided formats, for educational purposes, and for non-commercially funded research and/or quality assurance projects. The CFS must be administered free of charge to patients and/or study participants. A formal Licensing Agreement is required for research that is funded by a commercial entity or pharma and, in some cases, for use in routine clinical care. In the case that an electronic medical records (EMR) company is involved, permissions to use the CFS will be limited to the scope of use by the undersigned and will not extend to the EMR company outside of that use. The copyright holder reserves the right to prospectively follow-up at any time to determine whether use of the CFS meets the conditions described herein, and may revoke permissions if warranted. Reselling of the CFS or other commercial development without a license agreement is prohibited by the copyright. The undersigned, their delegates, and affiliated organizations agree that they will not claim ownership rights to the CFS, or any derivative thereof, including translations, compilations, sequels, or series. The CFS will not be modified unless explicit permission is granted.

You have indicated that your healthcare facility, institute, authority, or organization ("organization") will incorporate the Clinical Frailty Scale into an electronic medical record (EMR) system. Please note that if you are working with an external EMR vendor - that is, if your EMR is developed and/or maintained by a contracted entity that is separate from (external to) the healthcare organization named in the request form - permission for use of the Clinical Frailty Scale will remain exclusively with the named healthcare organization and does not transfer to the EMR vendor outside their work with the named organization.

**Signature**

Please sign to certify that all the provided information is correct, and you have read and understood the above statement.

