


**Appendix A:** Description of semi-structured focus group questions used among 6 experienced RNs to identify barriers and facilitators to using the Clinical Frailty Scale in an acute care setting.

<p><b>Section 1: Introduction</b></p>	<p>Thank you for agreeing to participate in this focus group.</p> <p><i>Introductions of interviewers and participants</i></p> <p>We have implemented a COPD pathway on 6NW, and this pathway includes the Clinical Frailty Scale rating for COPD patients admitted to respiratory. Our aim with this focus group is to explore the use of the frailty ratings specifically, and if you have any suggestions on how the rating process could be made easier or more understandable. This session should take roughly a half hour.</p> <p>Your participation in this focus group is entirely voluntary, and you can ask to leave at any time. We will be recording this session to analyze your responses in more depth after we have concluded the session.</p> <p><i>Ensure no one has any concerns with the use of the recording device.</i></p> <p>We will be using your responses to help draft a survey that we will be distributing to the other nurses on 6NW to explore their opinion. However, your individual responses and opinions will remain anonymous.</p> <p>Do you have any question before we get started?</p>
<p><b>Section 2: Demographic</b></p> <p><i>Our first set of questions will help us gain an understanding of your prior experience.</i></p>	<p>a) How long have you been working on 6NW? <i>Clarify that this is prior to the introduction of the pathway</i></p> <p>b) Does anyone have prior experience in frailty assessments or using the Rockwood Frailty scale other than on 6NW?</p>
<p><b>Section 3: Frailty Scale Use</b></p> <p><i>Our next set of questions will be related to the use of the COPD pathway, specifically the Frailty Scale rating</i></p>	<p>a) How do you find the Rockwood Frailty Scale rating?</p> <p>b) When do you find you are most often rating patients? <i>ie: time of shift, time following admission, etc.</i></p> <p>c) How often do you use the COPD pathway and the Rockwood Frailty scale? i) Do you perform this rating with every COPD admission? If not, why not?</p>
<p><b>Section 4: Barriers</b></p>	<p>a) Have you experienced any barriers to using the frailty scale? <i>ie: unclear directions, busy clinical unit, not enough information</i></p> <p>i) Do you have any specific examples?</p>

	<p>b) What would you say is the most significant barrier? Why?</p> <p>c) Is there anything you wish was clearer or easier to understand with regards to the frailty scale use?</p>
<b>Section 5: Facilitators</b>	<p>a) Is there anything that you have found that makes using the frailty scale easier?</p> <p>b) Do you have any suggestion on how we could make the frailty scale rating process easier?</p> <p><i>Educational programs and workshops can be used to help healthcare workings with the use of rating scales.</i></p> <p>c) What are your thoughts on participating in an educational session on how to use the Rockwood Frailty scale?</p>
<b>Conclusion</b>	<p>Those were the last of our questions. Does anyone have any questions or anything they would like to add before we finish?</p> <p>We want to make sure that we have understood your responses today. Once we have finished our analysis and summary of your responses, we will circulate our summary to all of you, and you will have the opportunity to provide us with feedback and to suggest any corrections or misunderstandings that we have made.</p> <p>I would like to thank you once again for your participation today.</p>

## Appendix B. The Clinical Frailty Scale (CFS) (Rockwood et al. CMAJ 2005)


### 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.


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 **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.


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 **3 Managing Well** – People whose **medical problems are well controlled**, but are **not regularly active** beyond routine walking.


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 **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.

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 **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.

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 **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).

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 **8 Very Severely Frail** – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.

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 **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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**Appendix C.** Questions asked to RN's to identify the barriers and facilitators of using the Clinical Frailty Scale (CFS) to assess frailty for hospitalized patients with COPD.

**What are the barriers to using the frailty scale to rate patients?**

**Please rank the following items, with "1" being the most important barrier and "8" being the least important barrier:**

- No order received to initiate the COPD pathway
- The rating scale is difficult to understand
- High workload (other paperwork, other admissions, etc.)
- The rating scale is not practical
- There is a language barrier present
- The patient is too sick to perform the rating scale
- Lack of collateral information
- It takes too long to use the frailty rating scale
- Other (please state): \_\_\_\_\_

**In your opinion, what would make the frailty rating process easier to do? Please check all that apply.**

- A more flexible time window to complete rating scale (*ie: rate within first 24 hours of admission*)
- Education session(s) on *how* to rate frailty
- Asking patient's family members for additional information
- Rating patients initially upon admission
- Discussing with colleagues to form a consensus on the frailty rating
- Other (please state): \_\_\_\_\_

## Appendix D. Clinical vignettes presented to study participants before and after the educational intervention.

### Case #1

70-year-old gentleman is admitted with an acute exacerbation of COPD. He has a 3-day history of shortness of breath, fever/chills, and cough with yellow sputum production. He has been started on prednisone, azithromycin, and tamiflu as well as straight ventolin and atrovent inhalers.

On examination, his vital signs are: Temp: 38.3 degrees C, HR 110, BP, 110/60 and SpO<sub>2</sub> of 91% on 4L via nasal cannula. The patient is in mild respiratory distress with increased work of breathing and accessory muscle use. There are diffuse expiratory wheezes are heard throughout all lung fields.

At his baseline, he does not complain of any shortness of breath, cough or sputum production. He has a past medical history of COPD and hypertension. He is an ex-smoker who quit 10 years ago after a 30-pack year history. He golfs during the summer, and he is able to walk to the grocery store 2 blocks away with absolutely no complaints of breathlessness.

**Frailty Rating:** \_\_\_\_\_

### Case #2

76-year-old gentleman is admitted with an acute exacerbation of COPD. He has had a 3-day history of cough and increased sputum production of thick yellow sputum. He has been started on prednisone, doxycycline and regular inhalers.

Upon initial assessment, his vital signs are BP 154/84, HR 114, RR 30, Temp 37.9 degrees C, and SpO<sub>2</sub> 90% on 1L of oxygen by nasal cannula. Decreased breath sounds with a mild expiratory wheeze are noted throughout all lung fields on auscultation.

He suffers from COPD, hypertension, impaired mobility, and mild cognitive impairment. He is prescribed 15 medications a day, although he admits that he often forgets to take some of them. He lives alone in a 5th floor one-bedroom apartment 5-storey apartment building with no elevators. In the last month, he has received regular visits from a close relative to help him with heavy housework, and to transport him to appointments. He also needs support with shopping and meal preparation. In the last two weeks, he started receiving 'meals on wheels' to ensure adequate nutrition.

**Frailty Rating:** \_\_\_\_\_

### Case #3

64-year-old lady with very severe COPD and frequent exacerbations presents to the emergency department with an acute exacerbation, caused by influenza. She is treated with antibiotics, tamiflu, bronchodilators and prednisone. She did not receive her influenza vaccine this year as the vaccine just became available this week. She quit smoking 6 months ago, and her only medical history is hypertension.

On examination in hospital, she is using 5L of oxygen by nasal prongs for saturations of 94%, HR is 110 beats per minute, BP is 136/90, RR is 20, and Temp is 38.5 degrees C. She appears underweight, and visibly short of breath with use of accessory muscles. She is currently able to speak in short sentences but has to stop intermittently to catch her breath.

At her baseline, she lives at home with her elderly husband who also has some health problems. She uses a 4-wheel-walker for ambulation outside the home. They have hired a service for regular housekeeping, and she also receives regular personal care via a home care service for assistance with bathing. She is able to dress and feed herself. In the last 1 year she has limited her outings due to shortness of breath, and is considering a move to assisted living with her husband in the near future.

**Frailty Rating:** \_\_\_\_\_

### Case #4

68-year-old gentleman, admitted with a diagnosis of an acute exacerbation of COPD. He has had a cough of thick yellow-green sputum for the past 3 days, as well as increased shortness of breath. He has been started on levofloxacin, prednisone, and scheduled ventolin and atrovent.

On examination, he appears irritable and anxious. There is note of decreased breath sounds, expiratory wheezes, and coarse crackles in both lower lobes anteriorly and posteriorly. His vital signs are BP 162/84, HR 124, RR 36, Temp 38.9 degrees C, and SpO2 88% on room air.

He has a past medical history of COPD, hypertension and type 2 diabetes. He has had pneumonia yearly for the past 3 years. He is a two-pack-a-day smoker for 38 years who quit 2 years ago.

At baseline, he complains of sleeping poorly and states that in the past two weeks, he has been feeling tired most of the time. He takes a short walk around the block every day. He lives alone, and is able to perform house cleaning, shopping, dressing, and bathing well. He can also manage his finances independently.

**Frailty Rating:** \_\_\_\_\_

#### Case #5

74-year-old gentleman admitted with a COPD exacerbation. He has a 2-day history of worsening shortness of breath despite increasing his home oxygen. He was found to be more drowsy than usual by his family this morning. He has not responded to initial treatment with ventolin, atrovent and prednisone in the emergency department, and his family states that he has been too drowsy to communicate for the past hour.

On examination, he appears uncomfortable, and grimaces occasionally. He has a decreased level of consciousness and his only verbal response is groaning. Vital signs are as follows Temp: 36.3 degrees C, HR: 80, BP: 100/60 and SpO2 of 93% on 100% non-rebreather mask. There are decreased breath sounds are noted on lung auscultation.

At his baseline, he has had shortness of breath with minimal activity, and he has been spending most of the day in bed for the past 2 months. This is the patient's 4<sup>th</sup> admission this year for a COPD exacerbation. On his last admission, he stated that he would not want to receive CPR, defibrillation, intubation, or any BiPAP in the event of respiratory failure.

**Frailty Rating:** \_\_\_\_\_

#### Case #6

71 year-old year old lady living at home alone who is admitted for an acute exacerbation of COPD. She presented to the emergency department with a 2 day history of cough with increased thick yellow sputum, fevers and night sweats and extreme shortness of breath which prevented her from carrying out her routine daily activities.

On examination, the patient is on 7L of oxygen via nasal prongs saturating at 93% with a respiratory rate of 25-32. She has expiratory wheezing throughout both lung fields with coarse crackles in her right and left lower lobes. Her BP is 98/56, HR is 130 and Temp is 38.9 degrees C.

Her past medical history is significant for COPD, atrial fibrillation, hypertension, and dyslipidemia.

She has smoked a pack and a half since the age of 20 and continues to smoke today. She has an active social life and goes to bingo with her friends 3 times a week. She can ambulate independently and manage her own personal care, but lately has found herself more fatigued with her regular activities. She has 2 sons living in Ottawa and grandchildren who visit her regularly.

**Frailty Rating:** \_\_\_\_\_

#### Case #7

62-year old lady admitted with a COPD exacerbation. She has had a 1-day history of worsening shortness of breath and worsening cough with green sputum production.

On examination, her vital signs are as follows: Temp: 37.2 degrees C, HR: 90, BP: 120/75, and SpO2 of 90% on 1L oxygen via nasal cannula. On lung auscultation, there is expiratory wheezing heard throughout all lung fields.

She has a past medical history of coronary artery disease, hypertension, diabetes, osteoporosis and osteoarthritis.

At baseline, she has shortness of breath while dressing and needs help with bathing. She lives with her daughter and son-in law, who do all of the meal preparation, grocery shopping, and house cleaning. She has not left the house the past month due to excessive breathlessness and hip pain. She has required help dressing the past month due to excessive breathlessness.

**Frailty Rating:** \_\_\_\_\_

**Case #8**

82-year-old lady admitted for pneumonia and COPD exacerbation. She has had a five day history of worsening shortness of breath and cough as well as a two days history of fever and chills. She has been started on prednisone, ceftriaxone, azithromycin and regular inhalers with improvement in her breathlessness and oxygen requirements.

The patient appears uncomfortable, with increased work of breathing. Decreased breath sounds, expiratory wheezes, and coarse crackles are heard in both lower lobes. Her vital signs are BP 102/64, HR 52, RR 22, Temp 38.9 degrees C, and SpO2 of 91% on 5L of supplemental oxygen.

At her baseline, her past medical history is significant for COPD, hypertension, metastatic colon cancer, and type 2 diabetes. She lives in a retirement home where she had a fall 3 weeks ago. She is completely dependent for her activities of daily living including bathing, dressing, and feeding, and the healthcare personnel at the retirement home administer her medications.

**Frailty Rating:** \_\_\_\_\_

**Case #9**

An 87 year-old gentleman from a long term care facility is admitted to the respiratory ward for an acute COPD exacerbation. His past medical history is significant for Alzheimer's dementia, recurrent mechanical falls, three heart attacks with open heart surgery 20 years ago, and hypertension. He smoked 1 pack a day for 50 years. He has multiple admissions for falls every year, and during the last year he was admitted twice with pneumosepsis and COPD exacerbation.

On examination, patient is on 6L of oxygen via nasal mustache saturating at 92% with a respiratory rate of 24-27. He has both inspiratory and expiratory wheezing throughout both lung fields with coarse crackles in his right lower lobe, and decreased air entry in his left lower lobe. His BP is 102/56, HR is 110 and Temp is 38.5 degrees C.

His son who visits him 3 times per week in long term care states that his father has become more sedentary recently, where previously he was more willing to take short walks in the hallway with his 4 wheel walker. He now uses a wheelchair more frequently. He also reports that his father appears to be often short of breath and nurses have been giving him his puffers more frequently.

**Frailty Rating:** \_\_\_\_\_

**Case #10**

70-year-old gentleman with history of COPD presents to hospital with cough, fever, wheezing, and shortness of breath. He is diagnosed with a COPD exacerbation and started on inhaled bronchodilators, prednisone, and levaquin. His medical history also includes coronary artery disease and hypertension. He is an active smoker, smoking half a pack per day.

On examination, SpO2 is 94% on 2L of oxygen by nasal prongs, BP is 145/85, HR 95 and regular, RR 18, and Temp is 36.5 degrees C. He does not appear distressed at rest in the hospital bed.

He lives at home alone, and is able to manage his household activities by himself, including housework, grocery shopping, and finances. However, after a day of household errands he is tired and requires rest. He participates in an exercise class for seniors twice per week but notes that he is more short of breath than his peers during heavier exercise.

**Frailty Rating:** \_\_\_\_\_