

# FRAIL-NH Simplifies Frailty Screening

Carey Cowles

In a comparison study of two frailty screening tools, the FRAIL-NH was shown to quickly screen residents at the bedside and to predict adverse outcomes, according to a speaker at the AMDA – the Society for Post-Acute and Long-Term Care Medicine Annual Conference in Orlando, FL.

Ellen W. Kaehr, MD, assistant professor of geriatric medicine at St. Louis University School of Medicine and a colleague wanted to demonstrate the need for an accurate, easily performed frailty screening tool specific to long-term care. They created the FRAIL-NH, named after its screening checklist (Fatigue, Resistance, Ambulation, Incontinence, Loss of weight, Nutritional approach, and Help with dressing) to address this need.

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She noted the limitations of other screening methods, including the Fried Criteria — which includes a 15-foot walk test that might be difficult for long-term care residents — and the Frailty Index.

“The Frailty Index is helpful to predict outcomes in the community, and it’s been studied in the nursing home, but it’s a 70-point checklist, which makes it cumbersome,” Dr. Kaehr said. “Based on strengths and weaknesses of existing

screening tools for frailty in the LTC population, we created the FRAIL-NH. We compared it to the Frailty Index because we considered it the gold standard.”

Dr. Kaehr performed a 6-month retrospective chart review from June to December 2014 using data from the MDS 3.0 and paper charts from 270 patients, 75 or older, who had lived in two LTC facilities in St. Louis for least 2 months. Most residents were female, and about 45% were older than 85. Comorbidities included dementia, any type (74.4%), Alzheimer’s dementia (31.1%), diabetes mellitus (24.1%), psychotic disorder (23%), and congestive heart failure (20.4%).

“Each letter in the [FRAIL-NH] is a variable,” Dr. Kaehr said. “We scored 0 points for no deficit, 1 point for moderate deficit, and 2 points for the maximum deficit.” She totaled up points and assigned patients to categories: nonfrail, prefrail, or frail. The primary outcome measures included falls, hospitalization, and death/hospice enrollment. They then compared their scoring with the Frailty Index and its 26 variables. “We overlapped some of the variables that overlapped on the FRAIL-NH, and pulled out the high-value variables that make a nursing home patient frail,” Dr. Kaehr said.

During the study, 83 patients had a fall, 53 went to the hospital, and 48 either died or enrolled in hospice. Dr. Kaehr performed a logistics regression analysis to determine how the FRAIL-NH predicted these outcomes:

- **Falls.** Being characterized as prefrail showed an increased risk of falls (OR, 2.6;  $P = .011$ ) vs. a nonfrail patient.

- **Hospitalization.** No significant predictors were found.
- **Mortality and hospice enrollment.** Being characterized as frail resulted in a nearly a fourfold increased risk (OR, 3.96;  $P = .007$ ), whereas being characterized as prefrail or frail resulted in an average odds ratio of 3.36 ( $P = .016$ ).

When the researchers combined the results from both screening tools, being characterized as prefrail by the FRAIL-NH resulted in an increased risk of falls (OR 2.42,  $P = .027$ ), whereas the Frailty Index showed no increased risk in this group. The researchers found no change in hospitalizations using either tool. However, being characterized as frail by the FRAIL-NH increased the risk of death and hospice enrollment.

“When we do the combined analysis we didn’t see the Frailty Index as a predictor of mortality,” Dr. Kaehr said, but the FRAIL-NH showed individuals characterized as frail had a threefold increased risk of death and hospice enrollment (OR, 3.35,  $P = .044$ ).

“We found that the prefrail group was at increased risk for falls; our hypothesis was that the prefrail group was likely more mobile and the frail patient may be wheelchair or bed bound. But it’s also exciting that this is a potential use for the tool, and the [prefrail] group is a potential intervention group,” Dr. Kaehr said.

“The FRAIL-NH has some potential to help us predict poor health outcomes. It’s much less cumbersome to collect, you can do it at the bedside if you wish — you might have to speak with the nursing staff to help with some of the variables — and it had similar predictive validity as the Frailty Index,” she said.



Craig Huey Photography

Dr. Kaehr suggested the FRAIL-NH could be used to intervene earlier in residents with frailty and then take action to reverse the condition.

She said more research should focus on different populations on a larger scale as well as investigate aggressive balance training as a way to decrease the fall risk in the prefrail group.

“Also even more interesting — part of the definition of frailty is that it’s reversible,” Dr. Kaehr said. “Our frail patients in the nursing home are at the severe end of the frailty spectrum, so [we should] try to intervene [earlier] and see if we can improve those health outcomes.” Nutritional and exercise interventions have been shown to improve frailty in some individuals. 

Carey Cowles is the managing editor of *Caring for the Ages*.

Frailty Index	
<ul style="list-style-type: none"> <li>• Congestive Heart Failure</li> <li>• Cerebrovascular Accident</li> <li>• Dementia, not specified type</li> <li>• Atrial Fibrillation</li> <li>• Depression defined as a PHQ score greater <math>\geq 5</math></li> <li>• Arthritis</li> <li>• Hip Fracture</li> <li>• Pressure Sores</li> <li>• Urinary Incontinence</li> <li>• Polypharmacy, on <math>\geq 6</math> medications</li> <li>• Physical help with dressing</li> <li>• Fatigue, per self-report or staff observation, included in PHQ-9</li> <li>• No spouse</li> <li>• Weight Loss</li> </ul>	<ul style="list-style-type: none"> <li>• Mobility Impairment</li> <li>• Anything other than a regular diet</li> <li>• Bowel Incontinence</li> <li>• Cancer</li> <li>• Renal Disease</li> <li>• Pneumonia</li> <li>• Urinary Tract Infection</li> <li>• Wound Infection</li> <li>• Diabetes Mellitus</li> <li>• Malnutrition</li> <li>• Psychotic Disorder</li> <li>• Respiratory Failure</li> </ul> <p><b>Scoring</b></p> <ul style="list-style-type: none"> <li>• Nonfrail-0.0-0.2</li> <li>• Prefrail 0.21-0.29</li> <li>• Frail <math>\geq 0.3</math></li> </ul>

FRAIL-NH			
	0	1	2
Fatigue	No	Yes	PHQ-9 $\geq 10$
Resistance	Independent Transfer	Set Up	Physical Help
Ambulation	Independent	Walker	Not Able/WC
Incontinence	None	Bladder	Bowel
Loss of Weight	None	yes	xxxx
Nutritional Approach	Regular Diet	Mechanically Altered	Feeding Tube
Help with Dressing	Independent	Set Up	Physical Help
Total			0-13
<b>Nonfrail (0-5), Prefrail (6-7), Frail (<math>\geq 8</math>)</b>			
<small>Kaehr E, Visvanathan R, Malmstrom TK, Morley JE. Frailty in Nursing Homes: The FRAIL-NH Scale. <i>J Am Med Dir Assoc</i> 2015;16(2):87.</small>			