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### CQI Project Utilizing Pre-transplant Frailty Assessment to Improve Transplant Outcomes

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# Preliminary report: CQI Project Utilizing Pre-transplant Frailty Assessment to Improve Transplant Outcomes

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## Background

Frailty has long been recognized as a risk factor for prolonged hospitalization and discharge to skilled nursing facilities post general surgery in elderly patients.<sup>1</sup> It has been shown that pre-operative rehabilitation programs can reduce length of stay and improve functionality post cardiothoracic surgery.<sup>2</sup> In kidney transplant recipients, frailty is associated with 94% increased risk of delayed graft function<sup>3</sup> and 61% increased risk of early hospital readmission.<sup>4</sup> In our center's post-transplant population, we identified frailty as one of the factors that led to early mortality (within one-year post-transplantation) in two of our elderly patients.

## Methods

In August of 2019, we initiated a CQI project in which pre-kidney transplant patients would undergo a frailty assessment as part of their pre-transplant evaluation. Initial screening was done using the FRAIL scale.<sup>5</sup> Re-evaluation of this frailty assessment was done in November of 2019 and it was determined that patients who met frailty criteria using the Frail scale should have further assessment of frailty using the Fried phenotype assessment.<sup>6</sup> The patient would then be referred to physical therapy and the components of the Fried phenotype assessment as well as the score they received on their Fried phenotype assessment would be shared with the physical therapists. Upon completion of physical therapy, patients would then undergo another Fried phenotype assessment to determine if there was improvement in their score post intervention. This information will then be used to determine whether the patient can be listed for a kidney transplant. We are currently working on a Fried phenotype assessment for patients who are wheelchair bound as they are unable to perform the entire assessment with the current scale.

## FRAIL Scale

Question	Yes/No
Fatigue (Are you fatigued?)	NO <input type="checkbox"/> YES (1pt) <input type="checkbox"/>
Resistance (can you climb a single flight of stairs?)	NO (1pt) <input type="checkbox"/> YES <input type="checkbox"/>
Ambulation (Can you walk one block?)	NO (1pt) <input type="checkbox"/> YES <input type="checkbox"/>
Illnesses' (more than five over 1 year)	NO <input type="checkbox"/> YES (1pt) <input type="checkbox"/>
Loss of weight (more than 5%) over the last one year without trying.	NO <input type="checkbox"/> YES (1pt) <input type="checkbox"/>
Total Points	
Was patient referred to Physical Therapy?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Fried total score	

### Key

Not Frail: 0 · Intermediate: 1-2 · Frail:  $\geq 3$  All patients who score 3 or greater need Fried completed and referral to physical therapy before moving forward with either evaluation or if listed must be status 7.

## Fried Frailty Index

- Consists of five components which include:
  - Weight loss
  - Physical endurance/energy
  - Physical activity
  - Hand grip strength measurement
  - Walking speed (get up and go test)
- A score of 5 is consistent with mild frailty, 6 moderate and 7 severe frailty

## Results

Since the initiation of this initiative on 08/01/2019 through 02/20/2020, 166 total patients undergoing pre-transplant evaluation have undergone frailty assessments. The majority of patients scored a zero on the initial Frail scale assessment with the scale ranging from zero to five. Patient's with a three or higher (5.42%) were considered frail and of those, 66.7% have been referred to physical therapy to increase strength and mobility. Of the ones who have had a Fried phenotype assessment done prior to PT referral, the majority scored a 5. At this time, none of the patients has yet completed physical therapy intervention.

## Future Directions

For those patients who are able to proceed with transplantation after intervention and improvement in frailty assessment, we will review their length of stay, readmission rate within the first 30 days post-transplantation, patient mortality within one year and graft function at one year. We will review this data in our transplant quality assessment and improvement meetings.

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