Supplemental Online Content

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This supplemental material has been provided by the authors to give readers additional information about their work.

eTable 1: Bias Assessment – Comparison of Frailty Stratification between Included and Excluded Patients for Multivariable Analysis

Characteristic	Included Patients (n = 22,494)	Excluded Patients (n = 4,818)	*P* value
Distribution of Age			
Age 18-40 years	5,056 (22.5)	1,227 (25.5)	0.126
Age 40-60 years	12,186 (54.2)	2,595 (53.9)	
Age 60-80 years	5,084 (22.6)	957 (19.9)	
Age 80+ years	168 (0.7)	39 (0.8)	
Distribution of Frailty			
Robust (mFI = 0)	12,311 (54.7)	2,779 (57.7)	0.404
Pre-Frail (mFI = 1)	6,811 (30.3)	1,393 (28.9)	
Frail (mFI = 2)	2,549 (11.3)	474 (9.8)	
Severely Frail (mFI ≥ 3)	824 (3.7)	173 (3.6)	

Values presented as n (%) for categorical data (compared by chi-square test). Excluded Patients lacked documentation of race. Statistical significance evaluated at $p < 0.05$.

eTable 2: Sensitivity Analysis – Significant Associations of Frailty with Clinical Outcome

Clinical Outcome	Model 1	OR (95% CI)	*P* value	Model 2	OR (95% CI)	*P* value	Model 3	OR (95% CI)	*P* value
In-Hospital Mortality									
	Age	1.01 (0.94, 1.07)	0.873	Age	1.02 (0.96, 1.08)	0.542	Age	1.03 (0.61, 1.73)	0.918
	Female	0.55 (0.18, 1.72)	0.307	Female	0.58 (0.18, 1.82)	0.347	Female	0.50 (0.02, 10.30)	0.652
	Non-White Race	3.04 (1.00, 9.26)	0.050	Non-White Race	2.80 (0.90, 8.73)	0.075	Non-White Race	2.44 (0.17, 34.39)	0.508
	mFI	6.27 (1.23, 31.96)	**0.027***	**mFI** (reference: Severely Frail (mFI ≥ 3)		**0.001***	**mFI**	2.28 (1.68, 3.11)	**< 0.001***
				Robust (mFI = 0)	0.04 (0.01, 0.24)				
				Pre-Frail (mFI = 1)	0.14 (0.04, 0.49)				
				Frail (mFI = 2)	0.38 (0.09, 1.67)				
Routine Discharge									
	Age	1.02 (1.01, 1.03)	**< 0.001***	**Age**	1.02 (1.01, 1.03)	**< 0.001***	Age	1.04 (0.98, 1.11)	0.192
	Female	0.75 (0.64, 0.88)	**< 0.001***	**Female**	0.74 (0.63, 0.87)	**< 0.001***	Female	0.78 (0.55, 1.11)	0.173
	Non-White Race	0.61 (0.50, 0.74)	**< 0.001***	**Non-White Race**	0.62 (0.51, 0.75)	**< 0.001***	**Non-White Race**	0.54 (0.39, 0.75)	**< 0.001***
	mFI	0.47 (0.40, 0.55)	**< 0.001***	**mFI** (reference: Severely Frail (mFI ≥ 3)		**< 0.001***	**mFI-11**	0.60 (0.55, 0.67)	**< 0.001***
				Robust (mFI = 0)	4.65 (3.30, 6.54)				

				Pre-Frail (mFI = 1)	2.62 (1.89, 3.62)				
				Frail (mFI = 2)	1.71 (1.20, 2.43)				
Hospital Length of Stay (> 75th Percentile, 6 days)									
	Age	1.00 (0.99, 1.01)	0.238	Age	1.01 (1.00, 1.01)	0.062	Age	0.98 (0.92, 1.03)	0.393
	Female	1.03 (0.89, 1.20)	0.679	Female	1.04 (0.89, 1.20)	0.587	Female	1.06 (0.77, 1.47)	0.714
	Non-White Race	1.72 (1.43, 2.07)	**< 0.001***	**Non-White Race**	1.69 (1.41, 2.04)	**< 0.001***	**Non-White Race**	2.03 (1.53, 2.71)	**< 0.001***
	mFI	2.07 (1.75, 2.45)	**< 0.001***	**mFI** (reference: Severely Frail (mFI ≥ 3)		**< 0.001***	**mFI**	1.48 (1.35, 1.62)	**< 0.001***
				Robust (mFI = 0)	0.25 (0.18, 0.35)				
				Pre-Frail (mFI = 1)	0.45 (0.32, 0.63)				
				Frail (mFI = 2)	0.62 (0.43, 0.90)				

Significant associations of age (continuous parameter), female sex, non-White race, and mFI-11 with clinical outcome evaluated using complex samples multivariable logistic regression models. Model 1 – mFI as binary parameter (robust (mFI = 0) in comparison to frail (mFI ≥ 1)). Model 2 – mFI as categorical parameter (robust (mFI = 0), pre-frail (mFI = 1), frail (mFI = 2), and severely frail (mFI ≥ 3)). Model 3 – propensity score matching assessment of mFI as continuous parameter to account residual confounding by age (matching parameters included age, female sex, and race for frailty as a binary variable defined previously). Values reported as odds ratios (OR) with 95% confidence intervals (CI). *Denotes statistical significance following Bonferroni correction for multiple comparisons.

eTable 3: Significant Associations of Frailty with Clinical Outcome – Additional Assessment of Racial Categories

Clinical Outcome	Parameters	OR (95% CI)	*P* value
In-Hospital Mortality			
	Age	1.01 (0.96, 1.08)	0.538
	Female	1.81 (0.56, 5.85)	0.327
	mFI	2.33 (1.69, 3.22)	**< 0.001***
	Race (reference: Other)		**< 0.001***
	White	0.39 (0.05, 3.13)	
	Black	1.65 (0.14, 19.23)	
	Hispanic	1.15 (0.10, 13.51)	
	Asian or Pacific Islander	1.09 (0.07, 17.86)	
	Native American	-	
Routine Discharge			
	Age	1.02 (1.01, 1.03)	**< 0.001***
	Female	0.74 (0.63, 0.87)	**< 0.001***
	mFI	0.61 (0.55, 0.66)	**< 0.001***
	Race (reference: Other)		**0.002***
	White	0.55 (0.39, 0.77)	
	Black	0.82 (0.52, 1.30)	
	Hispanic	0.90 (0.58, 1.40)	
	Asian or Pacific Islander	0.90 (0.56, 1.43)	
	Native American	0.44 (0.11, 1,85)	
Hospital Length of Stay (> 75th Percentile, 6 days)			
	Age	1.01 (0.99, 1.02)	0.110
	Female	1.04 (0.89, 1.21)	0.631
	mFI	1.54 (1.41, 1.68)	**< 0.001***
	Race (reference: Other)		0.374
	White	0.70 (0.47, 1.04)	
	Black	0.92 (0.56, 1.51)	
	Hispanic	1.42 (0.90, 2.25)	
	Asian or Pacific Islander	1.34 (0.83, 2.29)	

	Native American	0.99 (0.28, 3.53)	

Significant associations of age (continuous parameter), female sex, race (categorical variable - White, Black, Hispanic, Asian or Pacific Islander, Native America, and Other Race), and mFI-11 (continuous parameter) with clinical outcome evaluated using complex samples multivariable logistic regression models. Values reported as odds ratios (OR) with 95% confidence intervals (CI). *Denotes statistical significance following Bonferroni correction for multiple comparisons.