



Predictors of Functional Decline among Older Intensive Care Unit (ICU) Survivors

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The work being presented today is supported by a Paul B. Beeson Emerging Leaders in Aging Research Career Development Award (K76AG057023) and is being conducted at the Yale Claude D. Pepper Older Americans Independence Center (P30AG021342).

Predictors of Functional Decline among Older ICU Survivors



The problem: ICU clinicians and researchers have no way to identify which patients are at greatest risk of functional decline after an ICU stay

Our niche: Our prior work has demonstrated the importance of pre-ICU factors in determining post-ICU outcomes

Study objective: To identify predictors of functional decline among older ICU survivors and develop a prediction tool for post-ICU disability

National Health and Aging Trends Study (NHATS) participants 2011-2015 (N=12,427)

Linked to CMS files and identified ICU admissions

Functional status before and after ICU determined from NHATS data (score: ADLs + mobility, range 7-28)

Analytic sample = 513 older ICU survivors

- Functional decline: \uparrow post-ICU disability of ≥ 2 points
- Evaluated 19 potential predictors using backwards selection \rightarrow multivariable logistic regression model
- Tested discrimination & calibration

239 (46.6%) of the 513 ICU survivors met criteria for post-ICU functional decline

Predictors of post-ICU functional decline among older ICU survivors (N=513)*

Predictors	N (%) or mean \pm SD	Odds ratio (95% CI)
Age (years)	79.8 \pm 7.2	1.04 (1.01, 1.07)
Probable dementia	142 (27.7)	1.84 (1.16, 2.91)
Exhaustion	220 (42.9)	1.89 (1.24, 2.87)
Slowness	213 (41.5)	2.10 (1.33, 3.30)
Hearing impairment	87 (17.0)	2.08 (1.21, 3.60)
Vision impairment	60 (11.7)	1.71 (0.90, 3.27)
Pre-ICU disability	11.6 \pm 5.3	0.87 (0.82, 0.91)
ICU length of stay	6.2 \pm 5.6	1.11 (1.07, 1.16)

*The model demonstrated good discrimination (C-statistic 72%) & calibration

Next steps:

- External validation in the PEP cohort (Yale Pepper Center)
- Build tool and convert to app for use with Mobile Heartbeat in ICU
- Pilot study in Yale MICU

