

Supplemental Index

Appendix A: Distribution of category 1 and 3 ICU days for 36 patients who had a combination of category assignments during ICU hospitalization

	Category 1	Category 3
1	0.50	0.50
2	0.50	0.50
3	0.50	0.50
4	0.50	0.50
5	0.50	0.50
6	0.52	0.48
7	0.52	0.48
8	0.54	0.46
9	0.60	0.40
10	0.65	0.35
11	0.67	0.33
12	0.67	0.33
13	0.67	0.33
14	0.67	0.33
15	0.67	0.33
16	0.67	0.33
17	0.67	0.33
18	0.67	0.33
19	0.67	0.33
20	0.68	0.32
21	0.70	0.30
22	0.71	0.29
23	0.71	0.29
24	0.71	0.29
25	0.75	0.25
26	0.75	0.25
27	0.75	0.25
28	0.78	0.22
29	0.80	0.20
30	0.80	0.20
31	0.83	0.17
32	0.83	0.17
33	0.83	0.17
34	0.88	0.13
35	0.91	0.09
36	0.95	0.05

Appendix B: Variance inflation factors for covariates in multivariable regression models examining associations between use of ICU treatments and perceptions of benefit

Mechanical Ventilation in Acute Respiratory Failure

Independent Variable	R ²	Variance Inflation Factor
Age	0.40	1.67
Female	0.02	1.02
Race/Ethnicity	0.10	1.11
Charlson Index	0.33	1.49
APACHE score	0.21	1.27
Category (1 or 3)	0.22	1.28

Vasopressors in Shock

Independent Variable	R ²	Variance Inflation Factor
Age	0.31	1.45
Female	0.07	1.08
Race/Ethnicity	0.11	1.12
Charlson Index	0.39	1.64
APACHE score	0.19	1.23
Category (1 or 3)	0.26	1.35

Renal Replacement Therapy in Acute Kidney Injury

Independent Variable	R ²	Variance Inflation Factor
Age	0.42	1.72
Female	0.05	1.05
Race/Ethnicity	0.11	1.12
Charlson Index	0.39	1.64
APACHE score	0.22	1.28
Category (1 or 3)	0.30	1.43

Central Venous Catheterization in Severe Sepsis / Septic Shock

Independent Variable	R ²	Variance Inflation Factor
Age	0.28	1.39
Female	0.04	1.04
Race/Ethnicity	0.08	1.09
Charlson Index	0.34	1.52
APACHE score	0.21	1.27
Category (1 or 3)	0.26	1.35

Appendix C: Associations between use of intensive care unit procedures and clinicians' assessment of likelihood of benefit from intensive care unit care (category 1 vs. 3)

	Mechanical Ventilation in Acute Respiratory Failure	Vasopressors in Shock	Renal Replacement Therapy in Acute Kidney Injury	Central Venous Catheterization in Severe Sepsis / Septic Shock
Variable	Odds Ratio (95% CI)	Odds Ratio (95% CI)	Odds Ratio (95% CI)	Odds Ratio (95% CI)
Category (1 vs 3)	0.85 (0.31-2.20)	1.15 (0.44-3.00)	1.52 (0.52-4.73)	1.58 (0.63-4.00)
Age	0.96 (0.93-0.99)	0.99 (0.97-1.02)	0.98 (0.95-1.01)	0.97 (0.94-0.99)
Female	1.44 (0.66-3.23)	1.52 (0.66-3.59)	0.61 (0.22-1.53)	1.90 (0.85-4.35)
Race/Ethnicity				
White	1.00	1.00	1.00	1.00
Black	0.70 (0.23-2.22)	0.30 (0.08-1.03)	1.40 (0.39-5.83)	0.81 (0.24-2.65)
Hispanic	0.63 (0.23-2.22)	0.53 (0.15-1.67)	1.31 (0.36-5.52)	0.53 (0.18-1.52)
Asian	1.06 (0.31-3.93)	0.73 (0.15-4.11)	0.91 (0.16-4.60)	0.39 (0.08-1.86)
Charlson Comorbidity Index	1.14 (0.97-1.36)	0.88 (0.11 - 7.55)	1.10 (0.94-1.30)	1.04 (0.15-7.33)
APACHE II Score	1.05 (0.98-1.13)	3.54 (0.41-35.69)	1.03 (0.97-1.09)	5.37 (0.67-49.04)

Appendix D: Univariate analyses of associations between use of intensive care unit procedures and clinical variables

Variable	Unadjusted Odds Ratios (95% CI)			
	Mechanical ventilation in acute respiratory failure (N = 192)	Vasopressors in shock (N = 138)	Renal replacement therapy in acute kidney injury (N = 204)	Central venous catheterization in severe sepsis/septic shock (N = 120)
Category (1 vs 3)	0.78 (0.29-1.64)	1.09 (0.45-2.59)	1.36 (0.57-3.50)	1.58 (0.76-3.34)
Age	0.99 (0.97-1.01)	0.99 (0.97-1.01)	0.98 (0.96-1.01)	0.98 (0.96-0.99)
Female Gender	1.26 (0.59-2.74)	1.28 (0.54-3.07)	0.52 (0.20-1.28)	1.51 (0.73-3.15)
Race/Ethnicity				
White	1.00	1.00	1.00	1.00
Black	0.92 (0.31-2.82)	0.40 (0.10-1.45)	0.60 (0.10-1.80)	0.89 (0.30-2.62)
Hispanic	0.81 (0.31-2.06)	0.59 (0.15-1.89)	0.75 (0.19-2.49)	0.75 (0.28-1.93)
Asian	1.06 (0.33-2.74)	1.63 (0.20-34.37)	1.22 (0.25-6.59)	0.42 (0.09-1.82)
Charlson Comorbidity Index	1.07 (0.94-1.22)	0.96 (0.83-1.10)	1.03 (0.90-1.18)	0.93 (0.82-1.04)
APACHE II Score	1.03 (0.97-1.10)	1.02 (0.97-1.08)	1.01 (0.96-1.07)	1.02 (0.97-1.07)

Appendix E: Univariate analysis of clinical factors associated with receiving potentially non-beneficial treatments.

Variable:	Unadjusted Odds Ratio* (95% CI)
Age	1.04 (1.02-1.05)
Female	1.01 (0.70-1.42)
Race/Ethnicity	
White	1.00
Black	1.07 (0.64-1.77)
Hispanic	0.78 (0.48-1.28)
Asian	2.65 (1.49-4.78)
Comorbid Conditions	
Myocardial Infarction	0.90 (0.49-1.70)
Congestive Heart Failure	1.28 (0.81-2.02)
Dementia	4.21 (2.40-7.58)
Cerebrovascular disease	2.30 (1.33-3.96)
COPD	1.22 (0.73-1.99)
Diabetes Mellitus	1.17 (0.80-1.70)
Chronic Kidney Disease	0.94 (0.57-1.53)
Cirrhosis	1.02 (0.57-1.76)
Malignancy	2.87 (1.80-4.61)
APACHE Score	1.13 (1.10-1.17)

* Denotes odds of receiving at least one intensive care unit treatment that was considered potentially non-beneficial (category 3 on day of procedure)