**The Impact of Malnutrition Among Patients with a COVID-19-Associated Hospitalization: A Pilot Study from the National COVID Cohort Collaborative (N3C) Consortium Short Course**

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† Membership of the National COVID Cohort Collaborative (N3C) Consortium is provided in the Acknowledgements

**ABSTRACT WORD COUNT:** 345

**MANUSCRIPT WORD COUNT:** 2,345

**Abstract**

**Introduction:** Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean ornare, elit quis commodo malesuada, mi neque congue massa, at tincidunt nisl elit vel leo. Pellentesque mollis tempus posuere. Donec in varius ligula, vitae lobortis neque. Suspendisse condimentum ornare consectetur. Nunc fermentum, libero malesuada sollicitudin suscipit, mauris quam sollicitudin lorem, posuere suscipit lectus ipsum ut lorem. Ut lobortis magna molestie nunc volutpat, ut ullamcorper ante sodales. Fusce ut interdum magna.

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**Methods**

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**National COVID Cohort Collaborative (N3C)**

***N3C has broad inclusion criteria, harmonizing data from US sites nationwide.1 N3C collects longitudinal Electronic Health Record (EHR) or Health Information Exchange (HIE) data (with a data inclusion period starting January 2018 to assess diseases and conditions before COVID-19) on all persons with a positive SARS-CoV-2 polymerase chain reaction (PCR), antigen, or antibody test or a COVID-19 (ICD-10-CM U07.1) diagnosis.*** Nunc ac finibus lectus. Vestibulum eget nunc tortor. Donec in pretium mi. Curabitur malesuada laoreet risus, eu rhoncus ipsum congue id. Maecenas egestas congue egestas. Integer rutrum ex orci, eu rhoncus ex placerat quis. Nullam tempor eget neque at ultricies. ***This retrospective cohort study utilized the de-identified data (level 2) within N3C, which did not require institutional review board (IRB) approval. It was reviewed by the N3C Data Access Committee (RP- E01C43), which operates under the authority of the National Institutes of Health IRB, with Johns Hopkins University School of Medicine serving as the central IRB.***

**Data Extraction and Curation**

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**Covariates**

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**Outcomes**

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**Statistical Analyses**

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**Results**

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**Discussion**

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**Limitations**

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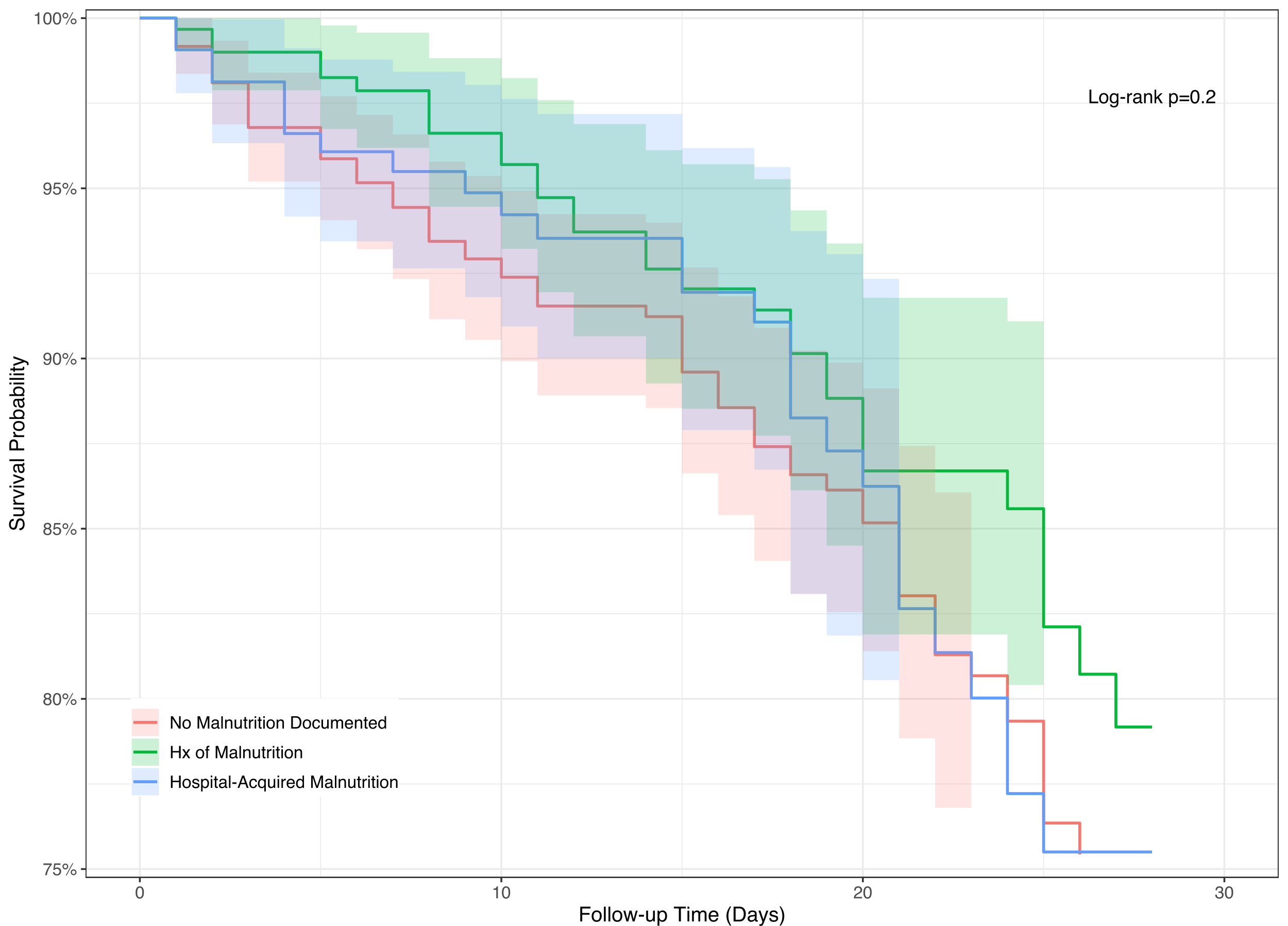
**Conclusions**

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**Table 1. Baseline Characteristics of Patients with SARS-CoV-2 Infection by Malnutrition Status**

| **Characteristic1** | **No History of Malnutrition,**  **N = 500** | **History of Malnutrition,**  **N = 200** | **Hospital-Acquired Malnutrition,**  **N = 100** | ***p* value2** |
| --- | --- | --- | --- | --- |
| Sex |  |  |  | 0.6 |
| Female | 251 (52%) | 149 (49%) | 106 (49%) |  |
| Male | 230 (48%) | 155 (51%) | 109 (51%) |  |
| Age at COVID-19 Diagnosis | 54 (36, 73) | 54 (36, 71) | 54 (35, 70) | 0.8 |
| Race/Ethnicity |  |  |  | 0.2 |
| White Non-Hispanic | 237 (49%) | 170 (56%) | 107 (50%) |  |
| Black or African American Non-Hispanic | 59 (12%) | 42 (14%) | 29 (13%) |  |
| Hispanic or Latino Any Race | 94 (20%) | 59 (19%) | 45 (21%) |  |
| Other | 32 (6.7%) | <203 | <203 |  |
| Missing/Unknown | 59 (12%) | <303 | <303 |  |
| Quan-Charlson Comorbidity Index | 4 (2, 7) | 4 (2, 7) | 5 (2, 7) | 0.9 |
| Current or Former Tobacco User | 142 (30%) | 91 (30%) | 57 (27%) | 0.7 |
| US Census Region |  |  |  | 0.25 |
| Midwest | 83 (17%) | 64 (21%) | 37 (17%) |  |
| Northeast | 101 (21%) | 54 (18%) | 43 (20%) |  |
| South | 118 (25%) | 78 (26%) | 54 (25%) |  |
| West | 95 (20%) | 70 (23%) | 51 (24%) |  |
| Missing | 84 (17%) | 38 (13%) | 30 (14%) |  |
| Death or Transfer to Hospice | 77 (16%) | 38 (13%) | 33 (15%) | 0.4 |
| 1. Median (IQR); n (%)  2. Wilcoxon rank sum test; Pearson’s Chi-squared test  3. Small cell counts representing <20 patients and any adjacent cells that allow back-calculation of small cell counts are obfuscated per N3C policies  NOTE: THIS IS ENTIRELY FAKE DATA GENERATED USING DPLYR | | | | |

**Figure 1. Kaplan Meier 30-Day Survival Estimates by Malnutrition Status**

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NOTE: THIS IS ENTIRELY FAKE DATA GENERATED USING DPLYR

**Table 2. Logistic Regression Models for All-Cause Mortality within 30 Days After Acute SARS-CoV-2 Infection Among Patients with and without Malnutrition**

| **Characteristic** | **Event Rate** | **Crude Odds Ratio (95% CI)** | **Adjusted Odds Ratio (95% CI)** |
| --- | --- | --- | --- |
| Malnutrition |  |  |  |
| No Malnutrition Documented | 77 / 481 (16%) | Reference | Reference |
| Hx of Malnutrition | 38 / 304 (13%) | 0.75 (0.49, 1.13) | 0.76 (0.49, 1.15) |
| Hospital-Acquired Malnutrition | 33 / 215 (15%) | 0.95 (0.60, 1.47) | 0.97 (0.61, 1.50) |
| Age at COVID-19 Diagnosis | 148 / 1,000 (15%) | 1.01 (1.00, 1.01) | 1.01 (1.00, 1.01) |
| Sex |  |  |  |
| Female | 71 / 506 (14%) | Reference | Reference |
| Male | 77 / 494 (16%) | 1.13 (0.80, 1.61) | 1.15 (0.81, 1.64) |
| Race/Ethnicity |  |  |  |
| White Non-Hispanic | 66 / 514 (13%) | Reference | Reference |
| Black or African American Non-Hispanic | 21 / 130 (16%) | 1.31 (0.75, 2.20) | 1.33 (0.76, 2.24) |
| Hispanic or Latino Any Race | 36 / 198 (18%) | 1.51 (0.96, 2.34) | 1.49 (0.94, 2.32) |
| Other | <20 | 2.04 (0.98, 3.98) | 1.94 (0.93, 3.83) |
| Missing/Unknown | <20 | 0.95 (0.48, 1.74) | 0.94 (0.47, 1.73) |
| Quan-Charlson Comorbidity Index | 148 / 1,000 (15%) | 1.01 (0.95, 1.07) | 1.01 (0.94, 1.07) |
| Tobacco Usage |  |  |  |
| No Hx of Tobacco Usage | 100 / 710 (14%) | Reference | Reference |
| Current or Former Tobacco User | 48 / 290 (17%) | 1.21 (0.83, 1.75) | 1.22 (0.83, 1.77) |
| US Census Region |  |  |  |
| Midwest | 30 / 184 (16%) | Reference | Reference |
| Northeast | 33 / 198 (17%) | 1.03 (0.60, 1.77) | 1.01 (0.58, 1.76) |
| South | 34 / 250 (14%) | 0.81 (0.47, 1.38) | 0.79 (0.46, 1.35) |
| West | 30 / 216 (14%) | 0.83 (0.48, 1.44) | 0.8 (0.46, 1.40) |
| Missing | 21 / 152 (14%) | 0.82 (0.44, 1.50) | 0.81 (0.43, 1.48) |
| NOTE: THIS IS ENTIRELY FAKE DATA GENERATED USING DPLYR | | | |

**N3C Attribution**

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