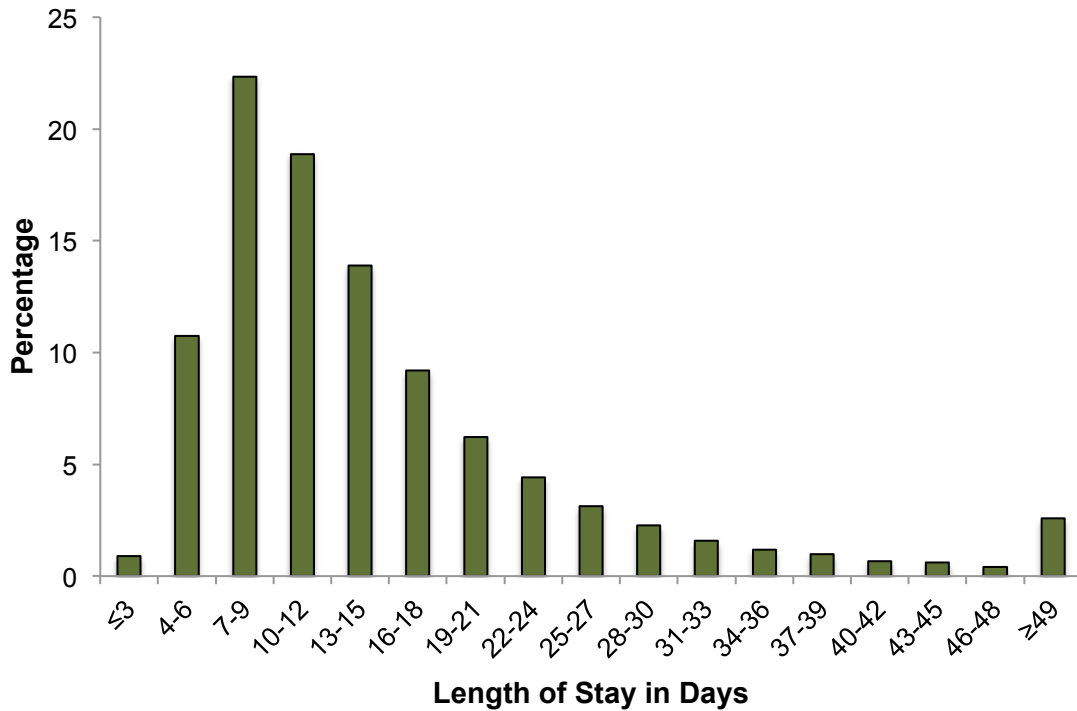


Data Supplement

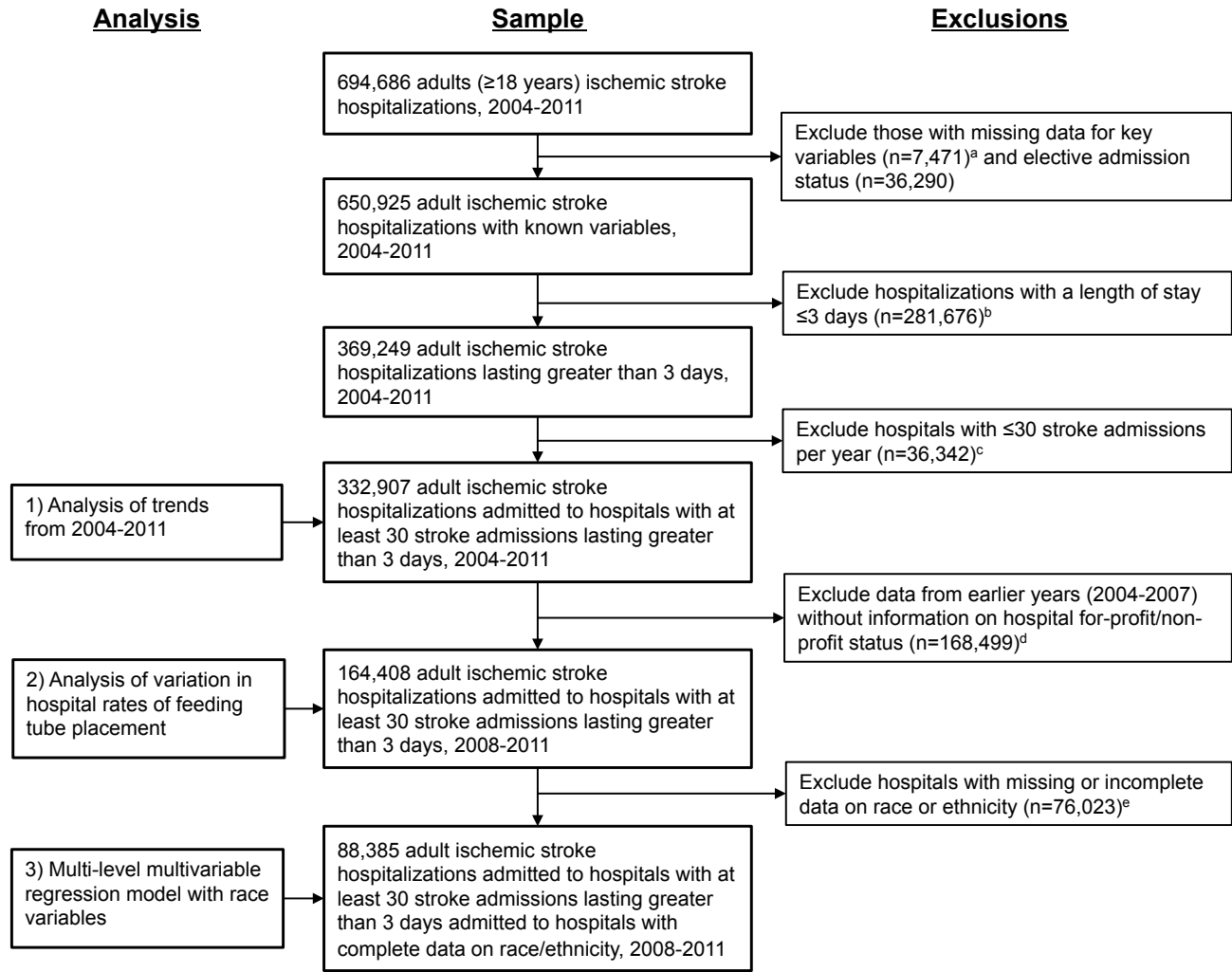
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Figure e-1. Length of Stay Distribution for Acute Ischemic Stroke Patients with Feeding Tube Placement, 2004-2011 (n = 30,729)^a



^a Total feeding tube insertions included here is greater than presented elsewhere in the study since further exclusions occurred. Less than 1% of acute ischemic stroke patients receiving a feeding tube had a length of stay ≤3 days. This represents a 0.09% unadjusted risk of feeding tube placement for those remaining in the hospital for only 3 days or less. The average number of days from admission to the procedure for feeding tube placement was 8.7 days (median of 7 days).

Figure e-2. Study Flow Diagram Detailing the Selection of Acute Ischemic Stroke Hospitalizations in the Nationwide Inpatient Sample (NIS)



^a Key variables include age, sex, death status, length of stay, primary insurance payer, elective status, and hospital location and teaching status.

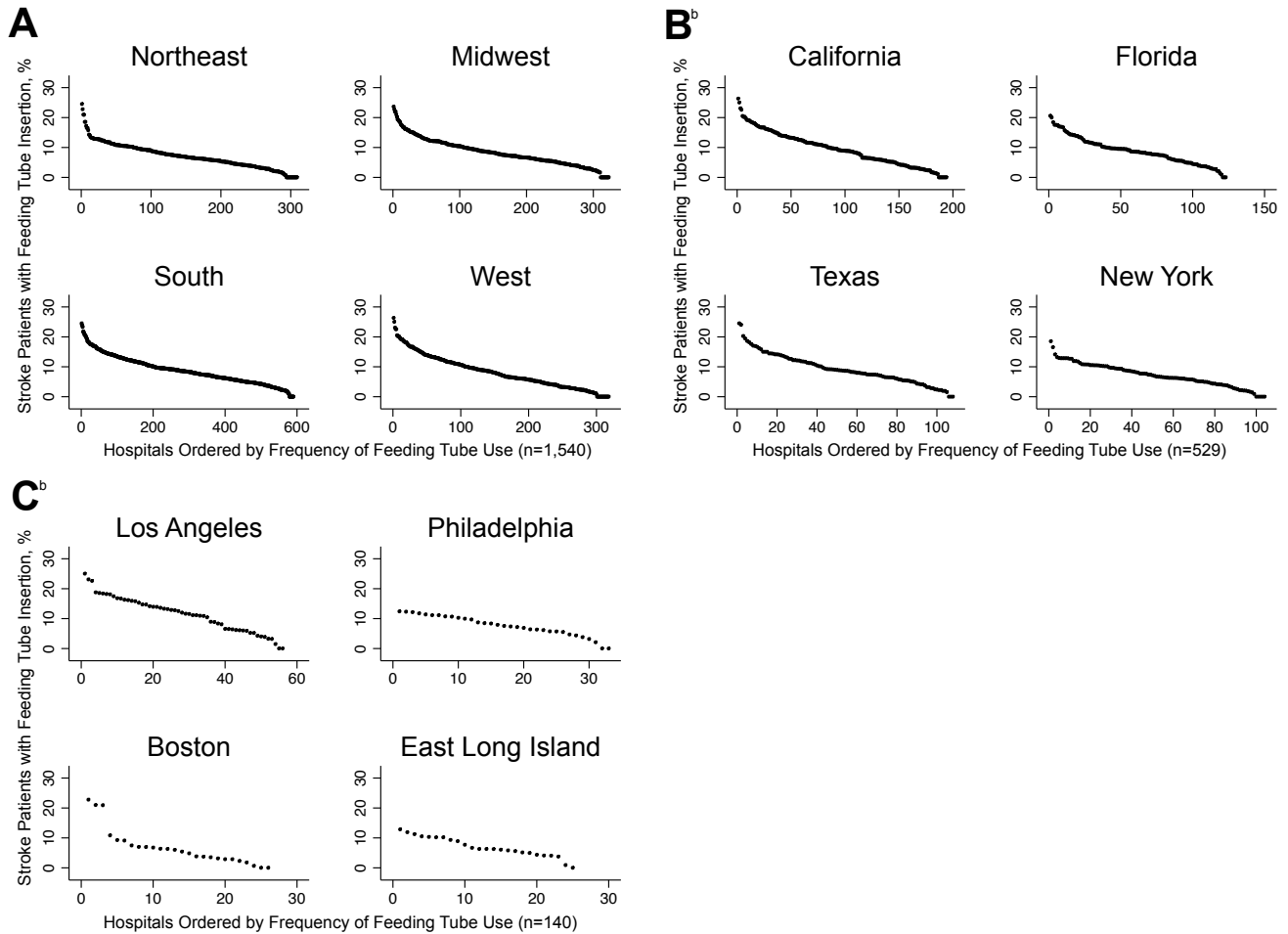
^b Less than 1% of feeding tube insertions (n=279) were excluded at this step.

^c 3,752 hospitals with low stroke volume were excluded.

^d Hospital tax status was only available from 2008-2011, and therefore, the regression analysis was limited to these more recent years.

^e 605 hospitals with missing or incomplete data on race/ethnicity were excluded.

Figure e-3. Rank Order of Frequency of Feeding Tube Placement in Acute Ischemic Stroke Hospitalizations by (A) US Region, (B) Largest States, and (C) Largest Hospital Referral Regions, 2008-2011^a



^a Hospitals were selected from 1,540 hospitals with at least 30 acute ischemic stroke hospitalizations lasting greater than 3 days within each year of the Nationwide Inpatient Sample, 2008-2011. In compliance with HCUP guidelines, no individual hospital can be identified directly or by inference using these data.

^b Includes hospitals within the four largest states and four largest hospital referral regions by number of hospitals in the sample. Hospital referral regions are those for 2011, and were identified using the subset of hospitals with available information on zip code in the Nationwide Inpatient Sample.

Table e-1. Cutoff Values for Hospital Quartile Variables^a

Hospital Characteristics	Range of Quartile Values
Stroke volume, no. of stroke hospitalizations	
1st quartile	≤50 ^b
2nd quartile	51 - 83
3rd quartile	84 - 137
4th quartile	≥138
Intubation use among stroke hospitalizations, intubation rate per 100 stroke hospitalizations ^c	
1st quartile	≤2.9
2nd quartile	3.0 - 5.5
3rd quartile	5.6 - 8.5
4th quartile	≥8.6
Black/Hispanic stroke admissions, rate per 100 stroke hospitalizations ^c	
1st quartile	≤7.1
2nd quartile	7.2 - 19.1
3rd quartile	19.2 - 38.1
4th quartile	≥38.1
Discharged to hospice, rate per 100 stroke hospitalizations ^c	
1st quartile	≤1.9
2nd quartile	2.0-4.1
3rd quartile	4.2-6.5
4th quartile	≥6.6

^a Quartiles were created using the xtiles function in STATA version 12.0 (StataCorp, College Station, TX).

^b The minimum hospital volume in the sample was 30 stroke admissions.

^c Figures are rounded to the nearest decimal point.

Table e-2. Adjusted Odds of Feeding Tube Placement for Rate of Hospice Discharge from Acute Care Hospitals, 2008-2011^a

Rate of discharge to hospice	Adjusted Odds Ratio, (95% CI)^b
1st quartile	1.00 (Reference)
2nd quartile	1.02 (0.93-1.11)
3rd quartile	1.07 (0.98-1.17)
4th quartile	0.99 (0.90-1.08)

^a 143,140 hospitalizations were included across 1,302 hospitals with known hospice discharge status.

^b Results are from a multi-level multivariable logistic regression model with a hospital random effect adjusted for fixed effects variables: sex, age, primary insurance payer, atrial fibrillation, cancer, stroke-modified Charlson comorbidity index, as well as hospital characteristics including ownership, location, teaching status, stroke volume, and intubation use.

Table e-3. Multivariable Model of Patient and Hospital Characteristics Associated with Feeding Tube Insertion Excluding Race Variables, 2008-2011 (n = 164,408)

Variable	Adjusted Odds Ratio, (95% CI)
Patient Characteristics	
Model 1^a	
Sex (vs male)	
Female	0.89 (0.86-0.93)
Age, (vs 18-54 years)	
55-64	1.25 (1.16-1.34)
65-74	1.42 (1.32-1.53)
75-84	1.62 (1.50-1.75)
≥85	1.64 (1.52-1.78)
Primary insurance payer	
Private payer	0.85 (0.80-0.90)
Medicaid	1.29 (1.19-1.39)
No charge/self pay/other	0.75 (0.69-0.83)
Atrial fibrillation (vs none)	1.45 (1.40-1.51)
Cancer (vs none)	
Nonmetastatic	0.86 (0.77-0.97)
Metastatic	0.60 (0.51-0.71)
Stroke-modified Charlson Comorbidity Index (vs no comorbidity)	
Mild comorbidity	1.17 (1.12-1.23)
Moderate to severe comorbidity	1.21 (1.15-1.28)
Hospital Characteristics	
Model 2^b	
Hospital ownership (vs non-profit)	
For-profit	1.28 (1.18-1.39)
State owned	1.15 (1.05-1.26)
Rural location (vs urban)	1.03 (0.93-1.15)
Teaching hospital (vs nonteaching)	0.96 (0.90-1.03)
Stroke volume (vs 1st quartile)	
2nd quartile	1.21 (1.10-1.34)
3rd quartile	1.23 (1.11-1.35)
4th quartile	1.30 (1.18-1.44)
Intubation use (vs 1st quartile)	
2nd quartile	1.18 (1.08-1.30)
3rd quartile	1.47 (1.34-1.61)
4th quartile	1.71 (1.56-1.88)
Between-hospital variance, Var (95% CI)	
Null model	0.23 (0.20-0.26)
Model 1 (patient characteristics)	0.23 (0.20-0.26)
Model 2 (patient and hospital)	0.18 (0.15-0.20)

Abbreviations: CI = Confidence Interval; Var = Variance

^a Model 1 includes patient characteristics (odds ratios not shown). The Intraclass Correlation Coefficient was 6.4%. The proportional change in between-hospital variance was 1.6% compared to the null model (rounding may account for differences in calculation using variances displayed in the table).

^b Model 2 includes patient and hospital characteristics. The Intraclass Correlation Coefficient was 5.1%. The proportional change in between-hospital variance was 23.7% compared to the null model (rounding may account for differences in calculation using variances displayed in the table). The Concordance statistic for the full model was 0.698.