Regional Disparities in Neurocritical Care Outcomes

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BACKGROUND

- **Determinants of Neurocritical Care Outcomes**: Social as opposed to biological disparities can frequently dictate health outcomes for neurocritically ill patients. Survival rates are determined both by a patient's access to a NCU (Neurocritical Care Unit) as well as the level of inpatient care he or she receive once admitted to a NCU.
- **Regional Inequality in Access to Care[1]:**
- Only 12.8% of Americans have access to a NCU within 45 min by ground transportation and 36.8% have access to a NCU within 45 minutes by air transportation.

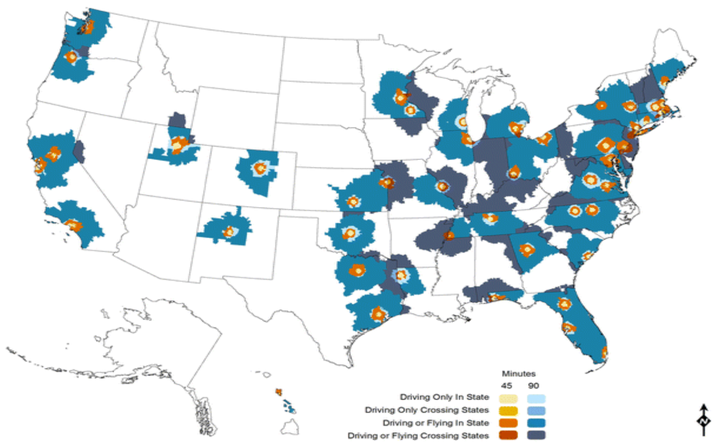

Fig 1: Regional access to NCUs within 45 and 90 minutes

- **Racial Disparities in NCU Admissions and Outcomes[2]:**
- Non white patients are more likely to become neurocritically ill and suffer adverse outcomes. African American patients have a higher frequency of all stroke subtypes and a higher stroke mortality rate than non-Hispanic white patients.
- **Socioeconomic Disparities in NCU Admissions[3]:**
- Uninsured and underinsured critically ill patients in the United States are disproportionately affected by the high cost of intensive care. Uninsured patients receive fewer critical care services regardless of age, sex, ethnicity, or reason for hospital admission.

ABSTRACT

While population health is often viewed as a primary care concern, specialty fields are heavily affected by inequalities in health outcomes and access to critical care services. This study sought to map out regional differences in the scope of care provided by neurointensivists as well as to assess the extent to which a critical care capacity varies between academic and community-based medical centers.

STUDY DESIGN

- The Jefferson Department of Neurology elected to participate in a multicenter cross-sectional observational study in neurocritical care. The study was designed to ensure that patient data was collected simultaneously at all participating hospital sites over a weeklong period from July 21st to July 27th 2014.
- 266 Neurocritical Care Units in the United States, Canada, Latin America, Europe, Asia, Australia, and New Zealand registered to participate in the study prior to the start of data collection.
- Pre-established metrics were used to collect and analyze subject data. The study design included an interactive database that was filled in once subject information was collected.

What day were these procedures, mechanical ventilation, or family meetings completed?	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7
Where was the patient intubated?	☐ On the field ☐ In the Emergency Department ☐ In the ICU
Who was the patient intubated by?	☐ EMS ☐ ED physician ☐ Neurointensivist ☐ Other
Intubation was:	☐ Elective ☐ Emergent
Day on mechanical ventilation	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

Fig 2: Example of database criteria for recording subject information

METHODS

- Investigators collected daily data on neurocritically ill subjects in all Jefferson Intensive Care Units during the weeklong study as well as at the time of hospital discharge for each patient.
- Data was collected for subjects who had been admitted to the ICU prior to or on the study start date (July 21st). Data collection for subjects was stopped if they were transferred from the ICU before the study end date (July 27th), although discharge information was still obtained.
- Following the week of data collection the information obtained was de-identified, coded and entered into an online databank where it was compared to information collected simultaneously at other participating hospital sites.
- **Patient data was collected in the following categories:**
  1. Baseline Characteristics
  2. Medications
  3. Imaging Studies
  4. Procedures
  5. Mechanical Ventilation
  6. Family Meetings
  7. Hospital Discharge Information

	Date	Data Collected
Day 1: Study start date	7/21/14	Categories 1-6
Day 2	7/22/14	Categories 2-6
Day 3	7/23/14	Categories 2-6
Day 4	7/24/14	Categories 2-6
Day 5	7/25/14	Categories 2-6
Day 6	7/26/14	Categories 2-6
Day 7: Study end date	7/27/14	Categories 2-6
Hospital discharge date	Varied depending on patient length of stay	Categories 7

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