**Supplemental Methods**

*Study design*

We conducted an ecological study using data from the NYS Statewide Planning and Research Cooperative System (SPARCS) dataset, a comprehensive data reporting system that collects information on hospital admissions and emergency department (ED) visits within the state of New York. The SPARCS dataset collects information on approximately 98% of all hospitalizations in non-federal acute care facilities regardless of insurance status. The study population contained all patients, regardless of age, who were hospitalized with CeAD from 2009 through 2014 in any of the non-federal acute care hospitals in New York State. We restricted our analysis to all inpatient visits for CeAD in non-federal acute care hospitals from 2009 through 2014 among individuals whose residential ZIP code was located within NYS. CeAD was defined using *International Classification of Diseases* (ICD-9) diagnosis codes for cervical artery dissections (443.21, 443.24) present on the first ten diagnostic positions. We aggregated the individual-level records by ZIP code into counts of the number of inpatient visits attributed to CeAD between 2009-2014 in each of the zip codes in NYS.

To assess disparities, we used home ZIP code Rural-Urban Commuting Area Codes (RUCA codes) designated by the United States Department of Agriculture:8 rural (population < 2,500), small town (population = 2,500-9,999), micropolitan (population = 10,000-49,000), or metropolitan (population > 50,000). Counts of CeAD were mapped by residential ZIP codeusing ArcGIS (version 10.3.1, ESRI, Inc., Redlands, CA). Population counts for each ZIP code were taken from the 2010 decennial US Census.

*Statistical Analysis*

We used negative binomial models to first examine the crude relationship between RUCA classifications and ZIP code CeAD counts (Model 1). We then adjusted the models for population counts per ZIP code to isolate the effect of rurality (Model 2). All results are expressed as effect estimates (effect = eß) and 95% confidence intervals (95% CL= e95% CL). Analyses were performed in SAS version 9.4 (SAS Institute, Cary, NC).

Approval and a waiver of consent for deidentified data was obtained from the Columbia University Medical Center Institutional Review Board (IRB AAAR0877).