## Appendix:

**Supplemental Table 1:** This table includes the All Patient Refined Diagnosis-Related Group (APR-DRG) terms with neurosurgical focus present in the SPARCS database. A total of 19 APR-DRG codes were identified.

## All Patient Refined Diagnosis-Related Groups (APR-DRG) Terms with Neurosurgical Focus

Craniotomy for Multiple Significant Trauma

Nonspecific CVA & Precerebral Occlusion Without Infarct

Open Craniotomy for Trauma

Open Craniotomy Except Trauma

Concussion, Closed Skull Fracture (not otherwise specified), Uncomplicated Intracranial

Injury, Coma < 1 hour or No Coma

Intracranial Hemorrhage

Hemorrhage or Hematoma due to Complication

Other Open Craniotomy

Other Nervous System and Related Procedures

CVA & Precerebral Occlusion with Infarct

Percutaneous Intracranial and Extracranial Vascular Procedures

Open Extracranial Vascular Procedures

Ventricular Shunt Procedures

Cervical Spinal Fusion & Other Back/Neck Procedures Except Excision/Decompression

Other Back & Neck Disorders, Fractures & Injuries

Intervertebral Disc Excision & Decompression

Spinal Procedures

Dorsal and Lumbar Fusion Procedure for Curvature of Back

**Supplemental Table 2:** This table shows the categorization of APR-DRG codes into the etiology subcategories for all subanalyses.

DRG Description	Categorization
other nervous system and related procedures	cranial except trauma
open craniotomy except trauma	cranial except trauma
craniotomy except for trauma	cranial except trauma
other open craniotomy	cranial except trauma
other nervous system & related procedures	cranial except trauma
craniotomy for trauma	cranial trauma
craniotomy for multiple significant trauma	cranial trauma
concussion, closed skull fracture nos, and uncomplicated intracranial injury, coma < hour or no coma	cranial trauma
concussion, closed skull fx nos, uncomplicated intracranial injury, coma or no coma	cranial trauma
open craniotomy for trauma	cranial trauma
ventricular shunt procedures	shunt
dorsal and lumbar fusion procedure for curvature of back	spinal except trauma
dorsal and lumbar fusion procedure except for curvature of back	spinal except trauma
intervertebral disc excision and decompression	spinal except trauma
cervical spinal fusion and other back or neck procedures except disc excision or decompression	spinal except trauma
spinal fusion and other back and neck procedures except for disc procedures	spinal except trauma
vertebral and intervertebral spinal procedures including disc procedures	spinal except trauma
dorsal & lumbar fusion proc except for curvature of back	spinal except trauma
spinal procedures	spinal except trauma
cervical spinal fusion & other back/neck proc exc disc excis/decomp	spinal except trauma
dorsal & lumbar fusion proc for curvature of back	spinal except trauma
intervertebral disc excision & decompression	spinal except trauma
other back & neck disorders, fractures & injuries	spinal trauma
other back and neck disorders, fractures and injuries	spinal trauma
percutaneous intracranial and extracranial vascular procedures	stroke
cva and precerebral occlusion with infarction	stroke
percutaneous intra & extracranial vascular procedures	stroke
extracranial vascular procedures	stroke
nonspecific cva & precerebral occlusion w/o infarct	stroke
cva & precerebral occlusion w infarct	stroke
intracranial hemorrhage	stroke
open extracranial vascular procedures	stroke
nonspecific cva and precerebral occlusion without infarction	stroke
hemorrhage or hematoma due to complication	stroke