## Patient Information

1. \*\*Study ID number:
2. \*\*Date and time of study (M M/D D/Y Y Y Y):

(HH:MM, 24 hr clock):

1. NIH Stroke Scale (NIHSS) at time of study (0-42):[[1]](#footnote-1)
2. Scan purpose (Select all that apply):

[ ]  Diagnostic

[ ]  Treatment

[ ]  Post-treatment

[ ]  Monitoring

[ ]  Other, specify

## Technical Information

1. \*\*Imaging modality (Select all that apply):

[ ]  DSA

[ ]  MRA/MRV

[ ]  CTA/CTV

[ ]  Cone Beam Computed Tomography (CBCT)

1. Digital Subtraction Angiography (DSA)
	1. Site of access:

[ ]  Brachial [ ]  Femoral

[ ]  Radial [ ]  Other

* 1. Selective injections (Select all that apply in table below and side):

1 Technical Information Table

| Injection Site | Side |
| --- | --- |
| Arch | [ ]  N/A – Not present |
| Common Carotid | [ ]  Right[ ]  Left[ ]  Bilateral[ ]  N/A – Not present |
| Internal Carotid | [ ]  Right[ ]  Left[ ]  Bilateral[ ]  N/A – Not present |
| Vertebral | [ ]  Right[ ]  Left[ ]  Bilateral[ ]  N/A – Not present |
| Subclavian | [ ]  Right[ ]  Left[ ]  Bilateral[ ]  N/A – Not present |

1. Magnetic Resonance Angiography (MRA): (Select all that apply)

[ ]  Head (Time of Flight - TOF)

[ ]  Neck (TOF)

[ ]  Contrast enhanced Head and Neck

[ ]  Magnetic Resonance Venography (MRV) with contrast

[ ]  Magnetic Resonance Venography (MRV) without contrast

1. Computer Tomography Angiography (Select all that apply):

[ ]  Head

[ ]  Neck

[ ]  Computer Tomography Venography (CTV)

## Findings

1. Arterial findings:
	1. Location:

[ ]  CCA origin [ ]  M3 multiple

[ ]  CCA to bifurcation [ ]  M4 single

[ ]  ICA at origin [ ]  M4 multiple

[ ]  C1 cervical [ ]  Vertebral origin

[ ]  C2 petrous [ ]  Vertebral – cervical

[ ]  C3 lacerum [ ]  Vertebral – intracranial proximal to PICA

[ ]  C4 cavernous [ ]  Vertebral – distal to PICA

[ ]  C5 clinoidal [ ]  Basilar – proximal

[ ]  C6 – ophthalmic to PCOM [ ]  Basilar – mid

[ ]  C6 – PCOM to terminus [ ]  Basilar – distal

[ ]  A1 [ ]  PCOM

[ ]  A2 [ ]  P1

[ ]  M1 proximal to striate [ ]  P2

[ ]  M1 distal to striate [ ]  P3

[ ]  M2 single [ ]  SCA

[ ]  M2 multiple [ ]  AICA

[ ]  M3 single [ ]  PICA

* 1. Findings:

1 Findings Table

| Side | Right | Left |
| --- | --- | --- |
| Findings | [ ]  Normal[ ]  Occlusion[ ]  Aneurysm[ ]  Stenosis[ ]  AVM[ ]  Other[ ]  Not visualized | [ ]  Normal[ ]  Occlusion[ ]  Aneurysm[ ]  Stenosis[ ]  AVM[ ]  Other[ ]  Not visualized |

1. \*\*\*Qureshi Angiographic Occlusions Scale (Scores listed and defined directly below):

2 Occlusions Scale Table

| Score | Description |
| --- | --- |
| 0 | No Occlusion |
| 1 – MCA | MCA occlusion M3 segment |
| 1 – ACA | ACA occlusion A2 or distal segments |
| 1 – BA/VA | One BA/VA branch occlusion |
| 2 – MCA | MCA occlusion M2 segment |
| 2 – ACA | ACA occlusion A1 and A2 segments |
| 2 – BA/VA | Two or more BA/VA branch occlusions |
| 3A | MCA occlusion M1 segment with lentriculostriate arteries spared and/or leptomeningeal collaterals visualized |
| 3B | MCA occlusion M1 segment with no sparing of lentriculostriate arteries nor leptomeningeal collaterals visualized |
| 4A – ICA | ICA occlusion with collaterals filling MCA |
| 4A – BA | BA occlusion with partial anterograde filling |
| 4B – ICA | ICA occlusion with collaterals filling ACA |
| 4B – BA | BA occlusion with partial retrograde filling |
| 5 – ICA | ICA occlusion with no collaterals |
| 5 – BA | BA occlusion with no filling either directly or via collaterals |

1. Expanded Thrombolysis in Cerebral Infarction (eTICI) Perfusion Scale-Grade (Scores listed and defined directly below):

3 Perfusion Scale Cause and Symptomology Table

| Score | Description |
| --- | --- |
| Grade 0 | No reperfusion or 0% filling of downstream territory. |
| Grade 1 | Thrombus reduction without any reperfusion of distal arteries. |
| Grade 2a | Reperfusion in less than half or 1-49% of the territory. |
| Grade 2b50 | 50-66% reperfusion, exceeding the modified TICI (mTICI) 2B threshold but below the original TICI 2B cut-off point. |
| Grade 2b67 | 67-89% reperfusion, exceeding TICI but below TICI 2C. |
| Grade 2c | Equivalent to TICI 2C or 90-99% reperfusion. |
| Grade 3 | Complete or 100% reperfusion, tantamount to TICI 3. |

1. Arterial Occlusion Lesion (AOL) Recanalization Scale for DSA; Modified Arterial Occlusion Lesion (mAOL) Recanalization Scale for CTA and MRA (Scores listed and defined directly below):

4 Recanalization Scale Table

| Score | Description |
| --- | --- |
| 0 | No recanalization of the primary occlusive lesion |
| 1 | Incomplete or partial recanalization of the primary occlusive lesion with no distal flow |
| 2 | Incomplete or partial recanalization of the primary occlusive lesion with any distal flow |
| 3 | Complete recanalization of the primary occlusion with any distal flow |

1. Intracranial collateral segment status:

5 Intracranial collateral segment status Table

| Location | Side |
| --- | --- |
| ECA/OA - ICA | [ ]  Left[ ]  Right[ ]  Bilateral[ ]  N/A – Not Present |
| ECA/Other - ICA | [ ]  Left[ ]  Right[ ]  Bilateral[ ]  N/A – Not Present |
| AComA - A1 - MCA | [ ]  Left[ ]  Right[ ]  Bilateral[ ]  N/A – Not Present |
| AComA – A2 – MCA pial | [ ]  Left[ ]  Right[ ]  Bilateral[ ]  N/A – Not Present |
| PComA – ICA | [ ]  Left[ ]  Right[ ]  Bilateral[ ]  N/A – Not Present |
| PCA – ACA pial | [ ]  Left[ ]  Right[ ]  Bilateral[ ]  N/A – Not Present |
| PCA – MCA pial | [ ]  Left[ ]  Right[ ]  Bilateral[ ]  N/A – Not Present |
| ICA to MCA/ACA Moyamoya | [ ]  Left[ ]  Right[ ]  Bilateral[ ]  N/A – Not Present |
| Other: | [ ]  Left[ ]  Right[ ]  Bilateral[ ]  N/A – Not Present |

1. Collateral grade (Grades listed and defined directly below):

6a ASITN Collateral Grade Table

| Score | Description |
| --- | --- |
| Grade 0 | No collaterals visible to the ischemic site |
| Grade 1 | Slow collaterals to the periphery of the ischemic site with persistence of some of the defect |
| Grade 2 | Rapid collaterals to the periphery of ischemic site with persistence of some of the defect and to only a portion of the ischemic territory |
| Grade 3 | Collaterals with slow but complete angiographic blood flow of the ischemic bed by the late venous phase |
| Grade 4 | Complete and rapid collateral blood flow to the vascular bed in the entire ischemic territory by retrograde perfusion |

6b Tan Collateral Score Table

| Score | Description |
| --- | --- |
| 0 | Absence of vessels on CTA source images (CTA-SI) |
| 1 | Collateral supply filling ≤50% but >0% of the occluded MCA territory |
| 2 | Collateral supply filling >50% but <100% of the occluded MCA territory |
| 3 | 100% collateral supply of the occluded MCA territory |

1. Venous findings:
	1. Superior Sagittal Sinus findings:

7 Findings Table

| Overall Assessment | **[ ]** Normal**[ ]** Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other |
| --- | --- |

1. Inferior Sagittal Sinus findings:

8 Findings Table

| Overall Assessment | **[ ]** Normal**[ ]** Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other |
| --- | --- |

1. Straight Sinus findings:

9 Findings Table

| Overall Assessment | **[ ]** Normal**[ ]** Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other |
| --- | --- |

1. Transverse Sinus findings:

10 Findings Table

| Side | Right | Left |
| --- | --- | --- |
| Overall Assessment | [ ]  Normal[ ]  Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other | [ ]  Normal[ ]  Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other |

1. Sigmoid Sinus findings:

11 Findings Table

| Side | Right | Left |
| --- | --- | --- |
| Overall Assessment | [ ]  Normal[ ]  Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other | [ ]  Normal[ ]  Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other |

1. Jugular Bulb findings:

12 Findings Table

| Side | Right | Left |
| --- | --- | --- |
| Overall Assessment | [ ]  Normal[ ]  Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other | [ ]  Normal[ ]  Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other |

1. Cavernous Sinus findings:

13 Findings Table

| Side | Right | Left |
| --- | --- | --- |
| Overall Assessment | [ ]  Normal[ ]  Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other | [ ]  Normal[ ]  Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other |

1. Internal Cerebral Vein findings:

14 Findings Table

| Side | Right | Left |
| --- | --- | --- |
| Overall Assessment | [ ]  Normal[ ]  Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other | [ ]  Normal[ ]  Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other |

1. a. Vein of Galen findings:

15a Findings Table

| Overall Assessment | [ ]  Normal[ ]  Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other |
| --- | --- |

* 1. Frontal Cortical Vein findings:

15b Findings Table

| Side | Right | Left |
| --- | --- | --- |
| Overall Assessment | [ ]  Normal[ ]  Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other | [ ]  Normal[ ]  Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other |

1. Parietal Cortical Vein findings:

16 Findings Table

| Side | Right | Left |
| --- | --- | --- |
| Overall Assessment | [ ]  Normal[ ]  Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other | [ ]  Normal[ ]  Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other |

1. Temporal Cortical Vein findings:

17 Findings Table

| Side | Right | Left |
| --- | --- | --- |
| Overall Assessment | [ ]  Normal[ ]  Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other | [ ]  Normal[ ]  Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other |

1. Occipital Cortical Vein findings:

18 Findings Table

| Side | Right | Left |
| --- | --- | --- |
| Overall Assessment | [ ]  Normal[ ]  Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other | [ ]  Normal[ ]  Small Caliber/Congenital Hypoplasia**[ ]** Stenosis**[ ]** Occlusion**[ ]** Other |

## Aneurysm Details

1. Shape/pathology of aneurysm:

[ ]  Saccular

[ ]  Fusiform

[ ]  Dissecting

1. Anatomic location:

[ ]  C1 cervical [ ]  M4

[ ]  C2 petrous [ ]  M4 single

[ ]  C3 lacerum [ ]  M4 multiple

[ ]  C4 cavernous [ ]  Vertebral origin

[ ]  C5 clinoidal [ ]  Vertebral-cervical

[ ]  C6 - ophthalmic to PCOM [ ]  Vertebral-intracranial proximal to PICA

[ ]  C6 - PCOM to terminus [ ]  Vertebral-distal to PICA

[ ]  A1 [ ]  Basilar-distal to AICA

[ ]  ACOM [ ]  Basilar-mid

[ ]  A2 [ ]  Basilar-proximal to AICA

[ ]  M1 proximal to striate [ ]  PCOM

[ ]  M1 distal to striate [ ]  P1

[ ]  M2 [ ]  P2

[ ]  M2 single [ ]  P3

[ ]  M2 multiple [ ]  SCA

[ ]  M3 [ ]  AICA

[ ]  M3 single [ ]  PICA

[ ]  M3 multiple

1. Location of aneurysm:

[ ]  Cavernous

[ ]  Persistent trigeminal

[ ]  Medial paraclinoid

[ ]  Lateral paraclinoid

[ ]  Ophthalmic

[ ]  Superior hypophyseal

[ ]  Posterior communicating

[ ]  Anterior choroidal

[ ]  Internal carotid artery bifurcation

[ ]  Middle cerebral artery bifurcation

[ ]  Anterior communicating

[ ]  Pericallosal

[ ]  Posterior inferior cerebellar artery

[ ]  Superior cerebellar

[ ]  Basilar apex

[ ]  Other

1. Dome size of aneurysm (mm):
2. Neck size of aneurysm (mm):
3. Aneurysm irregularity:

[ ]  Yes

[ ]  No

[ ]  Unknown

1. Largest height/largest neck diameter for each aneurysm:
2. Presence of mural thrombus or partial thrombosis in aneurysm:

[ ]  Yes

[ ]  No

[ ]  Unknown

1. \*\*\*Presence of 3D reconstruction of aneurysm:

[ ]  Yes

[ ]  No

[ ]  Unknown

## Endovascular Aneurysm Treatment

1. \*\*\*Wall opposition for stents or flow diverters:

[ ]  Good

[ ]  Poor

[ ]  Unknown

1. \*\*\*Occlusion percentage of aneurysm:
2. Raymond-Roy Occlusion Classification:

[ ]  Complete occlusion

[ ]  Dog ear

[ ]  Residual neck

[ ]  Residual aneurysm

1. Occlusion of parent or branch vessel related to aneurysm:

[ ]  Yes

[ ]  No

[ ]  Unknown

## \*\*\*CFD: Volumetric

1. \*\*\*Mean kinetic energy measurement of aneurysm:
2. \*\*\*Mean velocity measurement of aneurysm (cm/sec):
3. \*\*\*Mean aneurysm shear rate:
4. \*\*\*Mean aneurysm vorticity:
5. \*\*\*Mean viscous dissipation:
6. \*\*\*Vortex coreline length (cm):

## \*\*\*CFD: Surface Factors

1. \*\*\*Mean wall shear stress of aneurysm (dyne/cm2):
2. \*\*\*Maximum wall shear stress (dyne/cm2):
3. \*\*\*Minimum wall shear stress (dyne/cm2):
4. \*\*\*Shear concentration index:
5. \*\*\*Percentage of aneurysm under low WSS:
6. \*\*\*Mean oscillatory shear stress:

## \*\*\*CFD: Hemodynamic Factors

1. \*\*\*Mean inflow rate of aneurysm (ml/sec):
2. \*\*\*Inflow concentration index:

## Additional Supplemental Elements

1. Vascular dissection extent type (Choose one):

[ ]  Luminal narrowing greater than 50% (including "string sign")

[ ]  Vessel occlusion

[ ]  Luminal narrowing less than 50%

1. Vascular dissection findings type (Choose one):

**[ ]** Watershed or embolic infarction in the territory of the dissected vessel with SAH

[ ]  Watershed or embolic infarction in the territory of the dissected vessel without SAH

[ ]  Adjacent skull fracture (e.g. carotid canal)

1. Traumatic aneurysm (Choose one):

[ ]  Present

[ ]  Absent

[ ]  Indeterminate

1. Traumatic aneurysm anatomic site (Choose all that apply):

Carotid [ ] R [ ]  L

Vertebral [ ] R [ ]  L

ACA [ ] R [ ]  L

MCA [ ] R [ ]  L

PCA [ ] R [ ]  L

Basilar [ ]

Other (Describe): [ ] R [ ]  L

1. Traumatic aneurysm volume measurement:

mm3

1. Traumatic aneurysm findings type (Choose one):

[ ]  Intraluminal thrombus

[ ]  Cavernous (intradural)

[ ]  Skull fracture, with penetrating injury

[ ]  Skull fracture, without penetrating injury

1. Venous sinus injury (Choose one):

[ ]  Present

[ ]  Absent

[ ]  Indeterminate

1. Venous sinus injury morphology type (Choose all that apply):

[ ]  Compression

[ ]  Occlusion

[ ]  Laceration

1. Venous sinus injury anatomic site (Choose all that apply):

Sagittal sinus [ ]  Posterior (occipital)

 [ ]  Anterior (frontoparietal)

Transverse sinus [ ]  R [ ]  L

Sigmoid sinus [ ]  R [ ]  L

## General Instructions

This CRF contains data that would be collected when an imaging study is performed using angiography to examine the blood vessels of the body. There are separate sections to record arterial findings and venous findings.

\*\* Element is classified as Supplemental – Highly Recommended

\*\*\*Element is classified as Exploratory

The remaining data elements are Supplemental and should only be collected if the research team considers them appropriate for their study.

## Specific Instructions

Please see the Data Dictionary for definitions for each of the data elements included in this CRF Module.

1. NIHSS is also included on other Stroke CDE CRF Modules. This item should be pre-populated if initially collected elsewhere so as to avoid redundant data points. [↑](#footnote-ref-1)