

Appendix: Neurology Data Collection Form

CASE RECORD FORM

1. PATIENT INFORMATION - Please complete the below data as of the date and time of the patient's admission to the ICU

1.1 PATIENT ECMOCARD/ISARIC NUMBER (from main study CRF): _____

1.2 PREVIOUS DIAGNOSIS OF CHRONIC NEUROLOGICAL DISORDER (This option will only be available if 'yes' to chronic neurological condition on SPRINT-SARI form) – select all that apply:

- Chronic neurodegenerative condition
- Previous diagnosis of psychological disorder (including mood disorders)
- Previous delirium
- History of cerebrovascular disease
- Other (specify): _____

1.3 PREMORBID MODIFIED RANKIN SCALE (mRS) – based on patient history/interview with family, using mRS scoring system (<https://www.mdcalc.com/modified-rankin-scale-neurologic-disability>):

mRS: _____ (between 0 and +6)

2. CENTRAL NERVOUS SYSTEM (CNS) COMPLICATIONS – Please indicate whether the patient was diagnosed with any new CNS complications during their hospital stay and complete the relevant details

2.1 DIAGNOSIS OF ISCHEMIC STROKE – neurological deficit due to cerebrovascular occlusion and consequent cerebral infarction. Diagnosis must be confirmed with CT or MRI.

- Yes
- No

2.1a DATE OF DIAGNOSIS (only if 'yes' to 2.1) – specify the date when ischemic stroke was first diagnosed:

Date of diagnosis: __/__/____ (DD/MM/YYYY)

2.2 DIAGNOSIS OF INTRACRANIAL HAEMORRHAGE – bleeding within the skull including intracerebral, subarachnoid, and subdural haemorrhage. Diagnosis must be confirmed with CT or MRI.

- Yes
- No

2.2a DATE OF DIAGNOSIS (only if 'yes' to 2.2) – specify the date when intracranial haemorrhage was first diagnosed:

Date of diagnosis: __/__/____ (DD/MM/YYYY)

2.3 DIAGNOSIS OF HYPOXIC ISCHAEMIC BRAIN INJURY – diffuse brain injury secondary to prolonged disruption of blood flow or tissue oxygen supply. Diagnosis confirmed by clinical assessment of comatose state, MRI, or somatosensory evoked potential. EEG definition

- Yes
- No

2.3a DATE OF DIAGNOSIS (only if 'yes' to 2.3) – specify the date when hypoxic ischemic brain injury was first diagnosed:

Date of diagnosis: __/__/____ (DD/MM/YYYY)

2.4 DIAGNOSIS OF MENINGITIS/ENCEPHALITIS – inflammation of the cerebral parenchyma or meninges. Encephalitis diagnosis based on clinical and CSF criteria outlined in <https://www.ncbi.nlm.nih.gov/pubmed/23861361>, meningitis criteria outlined in <https://www.aafp.org/afp/2010/1215/p1491.html>:

- Yes
- No

2.4a DATE OF DIAGNOSIS (only if 'yes' to 2.4) – specify the date when encephalitis or meningitis was first diagnosed:

Date of diagnosis: __/__/____ (DD/MM/YYYY)

2.5 DIAGNOSIS OF TRANSVERSE MYELITIS (TM)/SPINAL CORD PATHOLOGY:

- Yes
- No

2.5a DATE OF DIAGNOSIS (only if 'yes' to 2.5) – specify the date when TM was first diagnosed:

Date of diagnosis: __/__/____ (DD/MM/YYYY)

2.6 OCCURRENCE OF SEIZURE – identification based on clinical manifestations or EEG findings are both acceptable:

- Yes
- No

2.6a DATE OF FIRST SEIZURE (only if 'yes' to 2.6) – specify the date when seizure first occurred:

Date of diagnosis: __/__/____ (DD/MM/YYYY)

2.7 DIAGNOSIS OF DELIRIUM – based on CAM-ICU (<https://www.mdcalc.com/confusion-assessment-method-icu-cam-icu>) or ICDSC (<https://www.lhsc.on.ca/media/8367/download>) definitions:

- Yes – CAM-ICU defined
- Yes – ICDSC defined
- No

2.7a DATE OF DIAGNOSIS (only if 'yes' to 2.7) – specify the date when delirium was first diagnosed:

Date of diagnosis: __/__/____ (DD/MM/YYYY)

2.8 DIAGNOSIS OF OTHER CNS COMPLICATIONS:

Please specify: _____

2.8a DATE OF DIAGNOSIS (only if 'yes' to 2.8) – specify the date when the neurological complication was first diagnosed:

Date of diagnosis: __/__/____ (DD/MM/YYYY)

3. PERIPHERAL NERVOUS SYSTEM (PNS) COMPLICATIONS – Please indicate whether the patient was diagnosed with any PNS complications during their hospital stay and complete the relevant details

3.1 DIAGNOSIS OF GUILLAN-BARRE SYNDROME (GBS) – diagnostic based on the GBS classification group criteria (<https://www.nature.com/articles/nrneurol.2013.138>):

- Yes
- No

3.1a DATE OF DIAGNOSIS (only if 'yes' to 3.1) – specify the date when GBS was first diagnosed:

Date of diagnosis: __/__/____ (DD/MM/YYYY)

3.2 DIAGNOSIS OF CRITICAL ILLNESS MYOPATHY/NEUROPATHY – diagnosis based on published criteria (<https://www.ncbi.nlm.nih.gov/pubmed/21939902>):

- Yes
- No

3.2a DATE OF DIAGNOSIS (only if 'yes' to 3.2) – specify the date when critical illness myopathy or neuropathy was first diagnosed:

Date of diagnosis: __/__/____ (DD/MM/YYYY)

3.3a HYPOGEUSIA OR HYPOSMIA:

- Yes
- No

3.3a DATE OF DIAGNOSIS (only if 'yes' to 3.1) – specify the date when hyposmia or hypogeusia was first diagnosed:

Date of diagnosis: __/__/____ (DD/MM/YYYY)

3.4 DIAGNOSIS OF OTHER NEUROPATHY OR MYOPATHY:

Please specify: _____

3.4a DATE OF DIAGNOSIS (only if 'yes' to 3.4) – specify the date when the neurological complication was first diagnosed:

Date of diagnosis: __/__/____ (DD/MM/YYYY)

4. FURTHER DETAILS AND OUTCOMES OF NEUROLOGICAL COMPLICATIONS – Please complete the below information regarding specific complications and their respective management and outcomes.

4.1 TOAST STROKE CLASSIFICATION (if 'yes' to 2.1) - <https://radiopaedia.org/articles/toast-classification-in-acute-ischemic-stroke>:

- Large-artery atherosclerosis
- Cardioembolism
- Small-vessel occlusion (lacune)
- Stroke of other determined etiology
- Stroke of undetermined etiology

4.1a National Institutes of Health Stroke Score (if 'yes' to 2.1) – (<https://www.mdcalc.com/nih-stroke-scale-score-nihss>):

NIHSS Score: _____ (between 0 and 42)

4.1b IMAGING CONFIRMATION OF DIAGNOSIS OF ISCHEMIC STROKE (if 'yes' to 2.1) - select all applicable:

- CT
- MRI
- N/A
- Other (specify): _____

4.1c MANAGEMENT OF ISCHAEMIC STROKE (if 'yes' to 2.1):

- Fibrinolysis (alteplase, tenecteplase, etc.)
- Endovascular thrombectomy
- Antiplatelet agent
- Anticoagulation
- Hemicraniectomy

4.2 INTRACRANIAL HAEMORRHAGE CLASSIFICATION (if 'yes' to 2.2):

- Intracerebral haemorrhage (focal haemorrhage from a blood vessel within the brain parenchyma)
- Subarachnoid haemorrhage (bleeding below the arachnoid mater)
- Subdural haematoma (collection of blood under the dura mater)
- Other (specify): _____

4.2a IMAGING CONFIRMATION OF INTRACRANIAL HAEMORRHAGE (if 'yes' to 2.2) - select all applicable:

- CT
- MRI
- N/A
- Other (specify): _____

4.2b TREATMENT OF INTRACRANIAL HAEMORRHAGE (if 'yes' to 2.2):

- External ventricular drain
- Surgical intervention
- Endovascular intervention
- Supportive therapy/medical management

4.2c Intracerebral haemorrhage

ICH Score: _____

4.3 ANCILLARY TESTING FOR HYPOXIC ISCHAEMIC BRAIN INJURY (if 'yes' to 2.3) - select all applicable:

- CT
- MRI
- EEG
- Somatosensory evoked potentials
- Biochemistry
- N/A
- Other (specify): _____

4.4 INVESTIGATIONS FOR MENINGITIS/ENCEPHALITIS (if 'yes' to 2.4) - select all applicable:

- CT
- MRI
- CSF studies
- EEG
- N/A
- Other (specify): _____

4.5 INVESTIGATIONS FOR TM/SPINAL CORD PATHOLOGY (if 'yes' to 2.5) - select all applicable:

- MRI
- CSF
- N/A
- Other (specify): _____

4.5a CLASSIFICATION OF TM/SPINAL CORD PATHOLOGY (if 'yes' to 2.5)

- Acute partial TM
- Acute complete TM
- Longitudinally extensive TM
- Acute Flaccid Myelitis (AFM)

4.6 NUMBER OF DAYS WITH SEIZURES (if 'yes' to 2.6)

Number of days: _____

4.6a SIMULTANEOUS DRUG USE FOR SEIZURE MANAGEMENT – select all drugs which were administered *simultaneously* when seizure management was most intensive (select all that apply):

- Benzodiazepines (diazepam, lorazepam, midazolam etc.)
- Barbiturate (phenobarbital)

- Phenytoin/fosphenytoin
- Valproate
- Levetiracetam
- Other (specify): _____

4.7 INVESTIGATIONS FOR GBS (if 'yes' to 3.1):

- EMG
- CSF studies
- Biochemistry
- Other (specify): _____

4.7a TREATMENT OF GBS (if 'yes' to 3.1):

- IV-IG
- Plasma exchange
- Other (specify): _____

4.8 INVESTIGATIONS FOR CIM/CIN (if 'yes' to 3.2):

- EMG
- CSF studies
- Biochemistry
- Other (specify): _____

4.8a TREATMENT OF CIM/CIN (if 'yes' to 3.2):

- IV-IG
- Plasma exchange
- Other (specify): _____

4.9 WHICH COMPONENTS OF TASTE PERCEPTION ARE AFFECTED? (select all that apply) (only if yes to 3.3)

- Sweet
- Salty
- Sour
- Savoury/umami
- None

4.9a OLFACTORY CHANGES (select all that apply) (only if yes to 3.3):

- Smells smell less strong than they did before (the quality of smell has changed)
- Smells smell different than they did before (the quality of smell has changed)
- Smelling things that aren't there (ex. smell burning when nothing is in fire)
- Sense of smell fluctuates (comes and goes)

5. NEUROIMAGING – please provide de-identified radiology reports for any neuroimaging completed performed during the patient’s hospital stay.

5.1 COMPUTED TOMOGRAPHY (CT) HEAD RADIOLOGY REPORT(S) AVAILABLE:

- Yes
- No

5.1a DATE OF CT HEAD (only if ‘yes’ to 5.1) – specify the date when a CT scan of the head was performed:

Date of diagnosis: __/__/____ (DD/MM/YYYY)

5.2b CT HEAD RADIOLOGY REPORT(S):

Upload:

5.2 MAGNETIC RESONANCE IMAGING (MRI) BRAIN RADIOLOGY REPORT(S) AVAILABLE:

- Yes
- No

5.2a DATE OF MRI BRAIN (only if ‘yes’ to 5.1) – specify the date when an MRI scan of the brain was performed:

Date of diagnosis: __/__/____ (DD/MM/YYYY)

5.2b MRI BRAIN REPORT(S):

Upload:

5.3 MRI SPINE RADIOLOGY REPORT(S) AVAILABLE:

- Yes
- No

5.3a DATE OF MRI SPINE (only if ‘yes’ to 5.1) – specify date when an MRI scan of the spine was performed:

Date of diagnosis: __/__/____ (DD/MM/YYYY)

5.3b MRI SPINE REPORT(S):

Upload:

5.4 If ischemic stroke or intracranial haemorrhage, laterality of lesion.

- Right side of brain
- Left side of brain
- Both

6. SERUM BIOCHEMISTRY – please indicate if any serum biomarkers were measured and record the date of testing and respective results.

6.1 SERUM BIOMARKERS OF NEURONAL INJURY ASSESSED:

- S100B
- NSE
- None of the above

6.1b MAXIMUM S100 CALCIUM BINDING PROTEIN (S100B) CONCENTRATION AND DATE OF TEST:

Date of test: __/__/____ Concentration in ng/mL: ____

6.1c MAXIMUM NEURON SPECIFIC ENOLASE (NSE) CONCENTRATION AND DATE OF TEST:

Date of test: __/__/____ Concentration in ng/mL: ____

7. PATIENT OUTCOME – to be completed at discharge and 28 days.

7.1 WITHDRAWAL OF LIFE-SAVING THERAPY:

- Yes
- No

7.1a REASON FOR WITHDRAWAL OF LIFE-SAVING THERAPY (if 'yes' to 7.1)

- Neurologic
- Cardiac
- Respiratory
- Multi-organ
- Futility
- Resource allocation
- Other (specify): _____

7.2 MODIFIED RANKIN SCALE (mRS) AT ICU DISCHARGE - <https://www.mdcalc.com/modified-rankin-scale-neurologic-disability>

mRS: ____ (between 0 and +6)

7.3 MODIFIED RANKIN SCALE (mRS) AT 28 DAYS POST-DISCHARGE - <https://www.mdcalc.com/modified-rankin-scale-neurologic-disability>

mRS: ____ (between 0 and +6)