Appendix A. The Study Case Report Form

ACT-TBI-CRF **Patient Assessment** Patient ID: __ __ - __ __ __

1. Patient Assessment

1. Eligibility Criteria	**Yes**	**No**
1.1 Adults ≥ 18 years old	☐	☐
1.2 Severe head injury (GCS score ≤ 8 after initial resuscitation) with the activation of the trauma code on mechanical respiratory ventilation at the time of imaging	☐	☐
2. Inclusion Criteria		
Same criteria as eligibility		
3. Exclusion Criteria		
4. No known GCS after initial resuscitation		
4.1 Patients with contraindications to CT-perfusion		
4.1.1 Pregnancy	☐	☐
4.1.2 Contrast allergy	☐	☐
4.1.3 Clinician refuses because of kidney injury	☐	☐
4.1.4 Hemodynamic instability that prevents safe transport to the CT-scan	☐	☐

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ACT-TBI-CRF **Consent** Patient ID: __ __ - __ __ __

2. Consent

1. Date/time consent was obtained (DD/MMM/YYYY) (hh:mm)	___ ___ / ___ ___ ___ / 20 ___ ___ ___ ___ : ___ ___ (24hr)
2. Who provided consent?	□ Substitute Decision Maker □ Father □ Mother □ Brother □ Sister □ Spouse or partner □ Daughter □ Son □ Other (specify): _____

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ACT-TBI-CRF **Brain CT-Perfusion** Patient ID: __ __ - __ __ __

3. Brain CT-Perfusion

1. CT Brain Perfusion Data	
1.1 Date/time patient left ED to perform CT: (DD/MMM/YYYY hh:mm)	__ __ / __ __ __ / 20 __ __ __ __ : __ __
1.2 Time CT performed: (hh:mm)	__ __ : __ __ (24hr)
1.3 Time patient returned to ED after performing CT: (hh:mm)	__ __ : __ __ (24hr)
1.4 Contrast media injected (non-ionic iodinated):	□ 40 mL □ Other, specify: _____ mL
1.5 Type of contrast:	□ Isovue 370 □ Omnipaque 300 □ Omnipaque 350 □ Ultravist (iopromide) 370 □ Visipaque 320 □ Other (specify): _____

1.6 CTP-related events experienced by patient (check all relevant events):

Events marked by an * must be reported to coordinating center within 24h:

Study coordinator: Sudharsana Rao Ande, Tel 204 789 3996

or

Study PI: Dr Jai Shankar, tel 431-373-4164

Event	Time of occurrence	Requiring Treatment
☐ Hypertension (more than 180 mmHg systolic for 2 minutes)	__ __ : __ __ (24h)	□ Yes □ No If Yes, please specify: _____ _____ __
☐ Hypotension (less than 60 mmHg mean arterial pressure for 2 minutes)	__ __ : __ __ (24h)	□ Yes □ No If Yes, please specify: _____ _____ __
☐ New desaturation less than 88% for more than 1 minute	__ __ : __ __ (24h)	□ Yes □ No If Yes, please specify: _____ _____ __
☐ **Accidental extubation***	__ __ : __ __ (24h)	□ Yes □ No If Yes, please specify: _____ _____ __

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ACT-TBI-CRF Brain CT-Perfusion

Patient ID: __ __ - __ __ __

☐ New catheter dysfunction (obstruction, removal)	__ __ : __ __ (24h)	□ Yes □ No If Yes, please specify: _____ _____ __
☐ **Code blue (or equivalent)***	__ __ : __ __ (24h)	□ Yes □ No If Yes, please specify: _____ _____ __
☐ Other (specify): _____	__ __ : __ __ (24h)	□ Yes □ No If Yes, please specify: _____ _____ __
1.7 Iodine injection related events:		
☐ Minor adverse events (self-limiting, non-progressive): New: limited urticaria, limited cutaneous edema, rhinorrhea, conjunctivitis	__ __ : __ __ (24h)	□ Yes □ No If Yes, please specify: _____ _____ __
☐ Moderate adverse events (often require management): New: diffuse urticaria, facial edema, bronchospasm, mild hypoxia	__ __ : __ __ (24h)	□ Yes □ No If Yes, please specify: _____ _____ __
☐ **Severe reactions (often require intervention): *** New: diffuse erythema/edema with hypotension, laryngeal edema with strider and/or hypoxia, wheezing/bronchospasm, significant hypoxia, anaphylactic shock (hypotension + tachycardia)	__ __ : __ __ (24h)	□ Yes □ No If Yes, please specify: _____ _____ __
☐ No CTP or iodine injection related events		

2.	
2.1	

Notes: _____
_____
_____

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ACT-TBI-CRF **Baseline** Patient ID: __ __ - __ __ __

4. Baseline

1. Date of birth (MMM/YYYY)	___ ___ ___ / ___ ___ ___ ___
2. Date of injury (and approximate time) (DD/MMM/YYYY) (hh:mm)	___ ___ / ___ ___ ___ / 20 ___ ___ ___ ___ : ___ ___ (24hr)
3. Sex at birth	□ Male □ Female
4. Race	□ Asian □ Black or African American □ Caucasian □ First Nations □ Unknown □ Other, specify _____
5. Mode of trauma	□ Traumatic Brain Injury (TBI) □ Open TBI with intracranial hemorrhage □ Close TBI with intracranial hemorrhage □ Open TBI without intracranial hemorrhage □ Close TBI without intracranial hemorrhage □ Motor Vehicle injury □ Physical assault □ Gun-Shot injury □ Stabbing □ Electrocution □ Asphyxiation (choking or suffocation) □ Other, specify: _____

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ACT-TBI-CRF **Baseline** Patient ID: __ __ - __ __ __

6. Injury Severity Score Head and Neck	□ 1 □ 2 □ 3 □ 4 □ 5 □ 6 (1-Minor; 2-Moderate; 3-Serious; 4-Severe; 5-Critical; 6 -Unsurvivable)
7. Injury Severity Score Face	□ 1 □ 2 □ 3 □ 4 □ 5 □ 6 (1-Minor; 2-Moderate; 3-Serious; 4-Severe; 5-Critical; 6 -Unsurvivable)
8. Injury Severity Score Chest	□ 1 □ 2 □ 3 □ 4 □ 5 □ 6 (1-Minor; 2-Moderate; 3-Serious; 4-Severe; 5-Critical; 6 -Unsurvivable)
9. Injury Severity Score Abdomen	□ 1 □ 2 □ 3 □ 4 □ 5 □ 6 (1-Minor; 2-Moderate; 3-Serious; 4-Severe; 5-Critical; 6 -Unsurvivable)
10. Injury Severity Score Extremity	□ 1 □ 2 □ 3 □ 4 □ 5 □ 6 (1-Minor; 2-Moderate; 3-Serious; 4-Severe; 5-Critical; 6 -Unsurvivable)
11. Injury Severity Score External	□ 1 □ 2 □ 3 □ 4 □ 5 □ 6 (1-Minor; 2-Moderate; 3-Serious; 4-Severe; 5-Critical; 6 -Unsurvivable)
12. Weight at ED admission	_____ Kg
13. Height	_____ cm

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ACT-TBI-CRF **Baseline** Patient ID: __ __ - __ __ __

14. Comorbidities	□ Hypertension treated with medication □ Hypertension not treated or not known to be treated with medication □ Diabetes □ Coronary artery disease □ Peripheral vascular disease □ Previous stroke □ Active smoking □ Smoking history (known past history) □ Chronic renal failure with dialysis □ Chronic renal failure without dialysis □ Liver disease □ Other, specify _____ □ None □ None specified/unknown

15. Admission information	
Previous hospital (if patient transferred from another hospital):	
15.1. First hospital ED admission date/time (DD/MMM/YYYY hh:mm)	__ __ / __ __ __ / 20 __ __ __ __ : __ __ (24hr) □ Not applicable
15.2. First hospital discharge date/time (DD/MMM/YYYY hh:mm)	__ __ / __ __ __ / 20 __ __ __ __ : __ __ (24hr) □ Not applicable
Current hospital :	
15.3. ED admission date/time (if patient not transferred from another hospital) (DD/MMM/YYYY hh:mm)	__ __ / __ __ __ / 20 __ __ __ __ : __ __ (24hr) □ Not applicable
15.4. ICU admission date/time (DD/MMM/YYYY hh:mm)	__ __ / __ __ __ / 20 __ __ __ __ : __ __ (24hr)

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ACT-TBI-CRF **Baseline** Patient ID: __ __ - __ __ __

16. Record documented GCS at each of the following stage:		
16.1. On scene	Eye	___ □ Not available
	Verbal	___ □ Not available
	Motor	___ □ Not available
	Total	___ □ Not available
16.2. ED GCS (From first hospital: previous or current hospital)	Eye	___ □ Not available
	Verbal	___ □ Not available
	Motor	___ □ Not available
	Total	___ □ Not available
16.3. ICU GCS (From previous hospital if patient transferred)	Eye	___ □ Not available □ Not applicable
	Verbal	___ □ Not available □ Not applicable
	Motor	___ □ Not available □ Not applicable
	Total	___ □ Not available □ Not applicable
16.4. ICU admission of current hospital (first available)	Eye	___ □ Not available
	Verbal	___ □ Not available
	Motor	___ □ Not available
	Total	___ □ Not available

17. If patient transferred from another hospital: Last laboratory data measures available from previous hospital (specify value and date of test for each parameter)			□ Not applicable
Biochemistry			
17.1. Blood glucose (mmol/L):	_____	__ __ / __ __ __ / 20 __ __	□ Not available
17.2. Hemoglobin (g/L):	_____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ Not available
17.3. Na+ (mmol/L):	_____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ Not available
17.4. K+ (mmol/L):	_____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ Not available
17.5. Creatinine (µmol/L):	_____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ Not available
17.6. BUN (mmol/L):	_____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ Not available

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ACT-TBI-CRF **Baseline** Patient ID: __ __ - __ __ __

Blood Gases (Specify method)	□ Arterial □ Capillary □ Venous __ __ / __ __ __ / 20 __ __ Use same method and gas for the following questions.		□ Not available
17.7. pH:	_____		
17.8. HCO3 (mmol/L):	_____		
17.9. PCO2 (mmHg):	_____		
17.10. PaO2 (mmHg):	_____		
17.11. FiO2 (%):	_____		
Vital Signs			
17.12. Systolic BP (mmHg):	_____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ Not available
17.13. Diastolic BP (mmHg):	_____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ Not available
17.14. MAP (mmHg):	_____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ Not available
17.15. Heart Rate (bpm):	_____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ Not available
17.16. Body Temperature (◦C):	_____ □ Rectal □ Oral □ Axillary □ Not specified □ Other, specify _____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ Not available
17.17. Total Fluid Balance (mL)	□ + □ – _____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ Not available

18. First available laboratory data in ED (current hospital) Specify value and date of test for each parameter.			
Biochemistry			
18.1. Blood glucose (mmol/L):	_____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ NA
18.2. Hemoglobin (g/L):	_____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ NA
18.3. Na+ (mmol/L):	_____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ NA
18.4. K+ (mmol/L):	_____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ NA
18.5. Creatinine (µmol/L):	_____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ NA
18.6. BUN (mmol/L):	_____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ NA
Blood Gases (Specify method)	□ Arterial □ Capillary □ Venous __ __ / __ __ __ / 20 __ __ Use same method and gas for the following questions.		□ NA
18.7. pH:	_____		

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ACT-TBI-CRF **Baseline** Patient ID: __ __ - __ __ __

18.8. HCO3 (mmol/L):	_____		
18.9. PCO2 (mmHg):	_____		
18.10. PaO2 (mmHg):	_____		
18.11. FiO2 (%):	_____		
Vital Signs			
18.12. Systolic BP (mmHg):	_____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ NA
18.13. Diastolic BP (mmHg):	_____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ NA
18.14. MAP (mmHg):	_____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ NA
18.15. Heart Rate (bpm):	_____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ NA
18.16. Body Temperature (◦C):	_____	□ Same date as above OR __ __ / __ __ __ / 20 __ __	□ NA
	□ Rectal □ Oral □ Axillary □ Not specified □ Other, specify _____		

Surgery /Interventions

19. Date of Operations/Interventions (DD/MMM/YYYY) (hh:mm)	___ ___ / ___ ___ ___ / 20 ___ ___ ___ ___ : ___ ___ (24hr)
20. Operation/Intervention List date and time with each.	

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ACT-TBI-CRF **Daily Data Collection** Patient ID: __ __ - __ __ __

5. Daily Data Collection

Clinical data for 7 days after inclusion into the study						
□ Day 1 (Enrollment Date)	□ Day 2	□ Day 3	□ Day 4	□ Day 5	□ Day 6	□ Day 7

1. Date (DD/MMM/YYYY)		__ __ / __ __ __ / 20 __ __	
2. GCS*		**Worst value of the day** □ with sedation □ without sedation	**Best value of the day** □ with sedation □ without sedation
• Eye		___	___
• Verbal		1 (T)	1 (T)
• Motor		___	___
• Total GCS & time of assessment (hh:mm)		___ @ __ __ : __ __	___ @ __ __ : __ __
Complete the questions 2.1 to 2.6 if the total GCS best value is more than 3: □ Not applicable		**Cranial nerve territory response**	**Peripheral nerve territory response**
2.1. Painful stimulation above clavicles		□ Absent □ Present □ Not available	□ Absent □ Present □ Not available
2.2. If presence of a peripheral response, is that response a spinal reflex?		□ Yes, it is a spinal reflex □ Both spinal and upper motoneuron mediated reflexes present □ No, it is an upper motoneuron mediated reflex □ Unsure □ Not available	
2.3. Pupillary response to light	Right	□ Absent	□ Present □ Not available
	Left	□ Absent	□ Present □ Not available
2.4. Corneal response	Right	□ Absent	□ Present □ Not available
	Left	□ Absent	□ Present □ Not available
2.5. Cough reflex		□ Absent	□ Present □ Not available
2.6. Pharyngeal (gag) reflex		□ Absent	□ Present □ Not available

***Glasgow Coma Scale (GCS)**		
Eye GCS	**Verbal GCS**	**Motor GCS**
4 – Spontaneously eye opening 3 – Eye opening in response to verbal command 2 – Eye opening in response to pain 1 – No response	5 – Orientated 4 – Confused conversation 3 – Words (inappropriate) 2 – Sounds (incomprehensible) 1 – No response	6 – Obeys (moves according to) verbal commands 5 – Localizes pain 4 – Flexion-withdrawal 3 – Flexion-abnormal/ decorticate rigidity 2 – Extension/decerebrate rigidity 1 – No response

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ACT-TBI-CRF Daily Data Collection

Patient ID: __ __ - __ __ __

3. Biochemistry

□ Day 1 (Enrollment Date)	□ Day 2	□ Day 3	□ Day 4	□ Day 5	□ Day 6	□ Day 7

3.1. Blood glucose (mmol/L):	Lowest: _____	Highest: _____	□ NA
3.2. Hemoglobin (g/L):	Lowest: _____	Highest: _____	□ NA
3.3. Platelets (10^9/L):	Lowest: _____	Highest: _____	□ NA
3.4. Na+ (mmol/L):	Lowest: _____	Highest: _____	□ NA
3.5. K+ (mmol/L):	Lowest: _____	Highest: _____	□ NA
3.6. Creatinine (μmol/L):	Lowest: _____	Highest: _____	□ NA
3.7. BUN (mmol/L):	Lowest: _____	Highest: _____	□ NA
3.8. Albumin (g/L):	Lowest: _____		□ NA
3.9. Total bilirubin (μmol/L):	Highest: _____		□ NA
3.10. AST (U/L):	Highest: _____		□ NA
3.11. ALT (U/L):	Highest: _____		□ NA

3.12. Has the patient any of the following Acute Kidney Injury criteria: • Increase in serum creatinine by ≥ 26.5 mol/l within 48 hours; • Increase in serum creatinine to ≥ 1.5 times baseline, which is known or presumed to have occurred within the prior 7 days; • Urine volume < 0.5 ml/kg/h for 6 hours.	□ Yes □ No	
3.13. What is the patient KDIGO Acute Kidney Injury Stage?	□ No Acute Kidney Injury	
	□ Stage 1	• Serum creatinine 1.5-1.9 times baseline OR ≥ 26.5 μmol/l increase • Urine output of < 0.5 ml/kg/h for 6–12 hours
	□ Stage 2	• Serum creatinine 2.0-22.9 times baseline • Urine output of < 0.5 ml/kg/h for ≥ 12 hours
	□ Stage 3	• Serum creatinine 3.0-22.9 times baseline OR Increase in serum creatinine to ≥ 353.6 μmol/l OR Initiation of renal replacement therapy • Urine output of < 0.3 ml/kg/h for ≥ 24 hours OR Anuria for ≥ 12 hours

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ACT-TBI-CRF Daily Data Collection Patient ID: __ __ - __ __ __

4. Blood Gases						
□ Day 1 (Enrollment Date)	□ Day 2	□ Day 3	□ Day 4	□ Day 5	□ Day 6	□ Day 7

Blood Gas based on lowest pH (Specify method)	□ Arterial □ Capillary □ Venous Use same gas for following questions.	
4.1. pH:	_____	□ NA
4.2. HCO3 (mmol/L):	_____	□ NA
4.3. PCO2 (mmHg):	_____	□ NA
4.4. PaO2 (mmHg):	_____	□ NA
4.5. FiO2 (%):	_____	□ NA
Blood Gas based on highest pH (Specify method)	□ Arterial □ Capillary □ Venous Use same gas for following questions.	
4.6. pH:	_____	□ NA
4.7. HCO3 (mmol/L):	_____	□ NA
4.8. PCO2 (mmHg):	_____	□ NA
4.9. PaO2 (mmHg):	_____	□ NA
4.10. FiO2 (%):	_____	□ NA

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5. Vital Signs						
□ Day 1 (Enrollment Date)	□ Day 2	□ Day 3	□ Day 4	□ Day 5	□ Day 6	□ Day 7

5.1. Systolic BP (mmHg):	Lowest: _____	Highest: _____	□ NA
5.2. Diastolic BP (mmHg):	Lowest: _____	Highest: _____	□ NA
5.3. MAP (mmHg):	Lowest: _____	Highest: _____	□ NA
5.4. Heart Rate (bpm):	Lowest: _____	Highest: _____	□ NA
5.5. Body Temperature (◦C):	Lowest: _____ Highest: _____ □ NA □ Rectal □ Oral □ Axillary □ Not specified □ Other, specify _____		
5.6. 24h Fluid Balance (mL):	□ + □ –	_____	□ NA

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ACT-TBI-CRF **Daily Data Collection** Patient ID: __ __ - __ __ __

1. Record all sedatives, analgesics, anti-psychotics, barbiturates & vasopressors/inotropes received **from day of ED arrival / enrolment .**

Sedatives - Bolus					☐ No data to report
Please choose letter from table below	**Date Administered**	**Time Administered** (hh:mm)	**Route**	**Dose**	**Unit**
☐ ________________	__ __/ __ __ __/ 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ________________	__ __/ __ __ __/ 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ________________	__ __/ __ __ __/ 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ________________	__ __/ __ __ __/ 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ _______________*	__ __/ __ __ __/ 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg

Sedatives – Continuous Infusion				☐ No data to report
Please choose letter from table below	**Date & Time Started**	**Date & Time Ended**	**Rate**	**Unit**
☐ ________________	__ __/ __ __ __/ 20 __ __ __ __ : __ __	__ __/ __ __ __/ 20 __ __ __ __ : __ __	______	______ If mL/h or mL/min, provide concentration: ___
☐ ________________	__ __/ __ __ __/ 20 __ __ __ __ : __ __	__ __/ __ __ __/ 20 __ __ __ __ : __ __	______	______ If mL/h or mL/min, provide concentration: ___
☐ ________________	__ __/ __ __ __/ 20 __ __ __ __ : __ __	__ __/ __ __ __/ 20 __ __ __ __ : __ __	______	______ If mL/h or mL/min, provide concentration: ___
☐ ________________	__ __/ __ __ __/ 20 __ __ __ __ : __ __	__ __/ __ __ __/ 20 __ __ __ __ : __ __	______	______ If mL/h or mL/min, provide concentration: ___
☐ _______________*	__ __/ __ __ __/ 20 __ __ __ __ : __ __	__ __/ __ __ __/ 20 __ __ __ __ : __ __	______	______ If mL/h or mL/min, provide concentration: ___

Table: Options for Sedatives			
A: Propofol (Diprivan) **B**: Midazolam (Versed)	**C**: Lorazepam (Ativan) **D**: Diazepam (Valium)	**G**: Clonazepam (Rivotril) **H**: Ketamine (Ketalor)	**I**: Dexmedetomidine (Precedex) **J**: Other (specify)

***Note**: If more bolus & continuous infusion were used, please use a supplementary form, and specify the number of the form: #___.

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ACT-TBI-CRF **Daily Data Collection** Patient ID: __ __ - __ __ __

Analgesics - Bolus					☐ No data to report
Please choose letter from table below	**Date Administered**	**Time Administered** (hh:mm)	**Route**	**Dose**	**Unit**
☐ ________________	__ __ / __ __ __ / 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ________________	__ __ / __ __ __ / 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ________________	__ __ / __ __ __ / 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ________________	__ __ / __ __ __ / 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ _______________*	__ __ / __ __ __ / 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg

Analgesics – Continuous Infusion				☐ No data to report
Please choose letter from table below	**Date & Time Started**	**Date & Time Ended**	**Rate**	**Unit**
☐ ________________	__ __ / __ __ __ / 20 __ __ __ __ : __ __	__ __ / __ __ __ / 20 __ __ __ __ : __ __	______	______ If mL/h or mL/min, provide concentration: ___
☐ ________________	__ __ / __ __ __ / 20 __ __ __ __ : __ __	__ __ / __ __ __ / 20 __ __ __ __ : __ __	______	______ If mL/h or mL/min, provide concentration: ___
☐ ________________	__ __ / __ __ __ / 20 __ __ __ __ : __ __	__ __ / __ __ __ / 20 __ __ __ __ : __ __	______	______ If mL/h or mL/min, provide concentration: ___
☐ ________________	__ __ / __ __ __ / 20 __ __ __ __ : __ __	__ __ / __ __ __ / 20 __ __ __ __ : __ __	______	______ If mL/h or mL/min, provide concentration: ___
☐ _______________*	__ __ / __ __ __ / 20 __ __ __ __ : __ __	__ __ / __ __ __ / 20 __ __ __ __ : __ __	______	______ If mL/h or mL/min, provide concentration: ___

Table: Options for Analgesics		
A: Morphine	**C**: Remifentanyl (Ultiva)	**G**: Hydromorphone
B: Fentanyl	**D**: Sufentanil (Sufenta)	**H**: Other (specify)

***Note**: If more bolus & continuous infusion were used, please use a supplementary form, and specify the number of the form: #___.

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ACT-TBI-CRF **Daily Data Collection** Patient ID: __ __ - __ __ __

Anti-psychotics - Bolus					☐ No data to report
Please choose letter from table below	**Date Administered**	**Time Administered** (hh:mm)	**Route**	**Dose**	**Unit**
☐ ________________	__ __ / __ __ __ / 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ________________	__ __ / __ __ __ / 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ________________	__ __ / __ __ __ / 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ________________	__ __ / __ __ __ / 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ _______________*	__ __ / __ __ __ / 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg

Anti-psychotics – Continuous Infusion				☐ No data to report
Please choose letter from table below	**Date & Time Started**	**Date & Time Ended**	**Rate**	**Unit**
☐ ________________	__ __ / __ __ __ / 20 __ __ __ __ : __ __	__ __ / __ __ __ / 20 __ __ __ __ : __ __	______	______ If mL/h or mL/min, provide concentration: ___
☐ ________________	__ __ / __ __ __ / 20 __ __ __ __ : __ __	__ __ / __ __ __ / 20 __ __ __ __ : __ __	______	______ If mL/h or mL/min, provide concentration: ___
☐ ________________	__ __ / __ __ __ / 20 __ __ __ __ : __ __	__ __ / __ __ __ / 20 __ __ __ __ : __ __	______	______ If mL/h or mL/min, provide concentration: ___
☐ ________________	__ __ / __ __ __ / 20 __ __ __ __ : __ __	__ __ / __ __ __ / 20 __ __ __ __ : __ __	______	______ If mL/h or mL/min, provide concentration: ___
☐ _______________*	__ __ / __ __ __ / 20 __ __ __ __ : __ __	__ __ / __ __ __ / 20 __ __ __ __ : __ __	______	______ If mL/h or mL/min, provide concentration: ___

Table: Options for Anti-psychotics		
A: Haloperidol (Haldol) **B**: Risperdone (Risperdal)	**C**: Quetiapine (Seroquel) **D**: Olanzapine (Zyprexa)	**G**: Other (specify)

***Note**: If more bolus & continuous infusion were used, please use a supplementary form, and specify the number of the form: #___

Version Date: March 4, 2021

ACT-TBI-CRF **Daily Data Collection** Patient ID: __ __ - __ __ __

Barbiturates- Bolus					☐ No data to report
Please choose letter from table below	**Date Administered**	**Time Administered** (hh:mm)	**Route**	**Dose**	**Unit**
☐ ______________	__ __/ __ __ __/ 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ______________	__ __/ __ __ __/ 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ______________	__ __/ __ __ __/ 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ______________	__ __/ __ __ __/ 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ______________*	__ __/ __ __ __/ 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg

Barbiturates – Continuous Infusion				☐ No data to report
Please choose letter from table below	**Date & Time Started**	**Date & Time Ended**	**Rate**	**Unit**
☐ ______________	__ __/ __ __ __/ 20 __ __ __ __ : __ __	__ __/ __ __ __/ 20 __ __ __ __ : __ __	______	______ If mL/h or mL/min, provide concentration: ___
☐ ______________	__ __/ __ __ __/ 20 __ __ __ __ : __ __	__ __/ __ __ __/ 20 __ __ __ __ : __ __	______	______ If mL/h or mL/min, provide concentration: ___
☐ ______________	__ __/ __ __ __/ 20 __ __ __ __ : __ __	__ __/ __ __ __/ 20 __ __ __ __ : __ __	______	______ If mL/h or mL/min, provide concentration: ___
☐ ______________	__ __/ __ __ __/ 20 __ __ __ __ : __ __	__ __/ __ __ __/ 20 __ __ __ __ : __ __	______	______ If mL/h or mL/min, provide concentration: ___
☐ ______________*	__ __/ __ __ __/ 20 __ __ __ __ : __ __	__ __/ __ __ __/ 20 __ __ __ __ : __ __	______	______ If mL/h or mL/min, provide concentration: ___

Table: Options for Barbiturates	
A: Pentobarbital (Nembutal)	**C**: Thiopental (Penthothal)
B: Phenobarbital (Luminal)	**D**: Other (specify)

***Note**: If more bolus & continuous infusion were used, please use a supplementary form, and specify the number of the form: #___.

Version Date: March 4, 2021

ACT-TBI-CRF **Daily Data Collection** Patient ID: __ __ - __ __ __

Vasopressors/Inotropes - Bolus					☐ No data to report
Please choose letter from table below	**Date Administered**	**Time Administered** (hh:mm)	**Route**	**Dose**	**Unit**
☐ ______________	__ __/ __ __ __/ 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ______________	__ __/ __ __ __/ 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ______________	__ __/ __ __ __/ 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ______________	__ __/ __ __ __/ 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ______________*	__ __/ __ __ __/ 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg

Vasopressors/Inotropes – Continuous Infusion			☐ No data to report	
Please choose letter from table below	**Date & Time Started**	**Date & Time Ended**	**Maximum Rate (Unit)**	**Total Dose (Unit)**
☐ ______________	__ __/ __ __ __/ 20 __ __ __ __ : __ __	__ __/ __ __ __/ 20 __ __ __ __ : __ __	______ (______)° °If mL/h or mL/min, provide concentration: _____	______ (_______)
☐ ______________	__ __/ __ __ __/ 20 __ __ __ __ : __ __	__ __/ __ __ __/ 20 __ __ __ __ : __ __	______ (______)° °If mL/h or mL/min, provide concentration: _____	______ (_______)
☐ ______________	__ __/ __ __ __/ 20 __ __ __ __ : __ __	__ __/ __ __ __/ 20 __ __ __ __ : __ __	______ (______)° °If mL/h or mL/min, provide concentration: _____	______ (_______)
☐ ______________	__ __/ __ __ __/ 20 __ __ __ __ : __ __	__ __/ __ __ __/ 20 __ __ __ __ : __ __	______ (______)° °If mL/h or mL/min, provide concentration: _____	______ (_______)
☐ ______________*	__ __/ __ __ __/ 20 __ __ __ __ : __ __	__ __/ __ __ __/ 20 __ __ __ __ : __ __	______ (______)° °If mL/h or mL/min, provide concentration: _____	______ (_______)

Table: Options for Vasopressors/Inotropes			
A: Vasopressin **B**: Norepinephrine	**C**: Phenylephrine **D**: Epinephrine	**G**: Dopamine **H**: Dobutamine	**I**: Milrinone **J**: Other (specify)

***Note**: If more perfusions were used, please use a supplementary form, and specify the number of the form: #___..

Version Date: March 4, 2021

ACT-TBI-CRF **Daily Data Collection** Patient ID: __ __ - __ __ __

Other Medications - Bolus			☐ No data to report		
Please choose letter from table below	**Date Administered**	**Time Administered** (hh:mm)	**Route**	**Dose**	**Unit**
☐ ______________	__ __/ __ __ __/ 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ______________	__ __/ __ __ __/ 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ______________	__ __/ __ __ __/ 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ______________	__ __/ __ __ __/ 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg
☐ ______________*	__ __/ __ __ __/ 20 __ __	__ __ : __ __	☐ PO ☐ IV ☐ SC	______	☐ mg ☐ µg

Other Medications – Continuous Infusion			☐ No data to report	
Please choose letter from table below	**Date & Time Started**	**Date & Time Ended**	**Maximum Rate (Unit)**	**Total Dose (Unit)**
☐ ______________	__ __/ __ __ __/ 20 __ __ __ __ : __ __	__ __/ __ __ __/ 20 __ __ __ __ : __ __	______ (______)° °If mL/h or mL/min, provide concentration: _____	______ (_______)
☐ ______________	__ __/ __ __ __/ 20 __ __ __ __ : __ __	__ __/ __ __ __/ 20 __ __ __ __ : __ __	______ (______)° °If mL/h or mL/min, provide concentration: _____	______ (_______)
☐ ______________	__ __/ __ __ __/ 20 __ __ __ __ : __ __	__ __/ __ __ __/ 20 __ __ __ __ : __ __	______ (______)° °If mL/h or mL/min, provide concentration: _____	______ (_______)
☐ ______________	__ __/ __ __ __/ 20 __ __ __ __ : __ __	__ __/ __ __ __/ 20 __ __ __ __ : __ __	______ (______)° °If mL/h or mL/min, provide concentration: _____	______ (_______)

Version Date: March 4, 2021

ACT-TBI-CRF Daily Data Collection

Patient ID: __ __ - __ __ __

Cerebral Monitoring: □ Not applicable

Type of monitoring/device	□ Parenchymal intracranial pressure monitor (mm Hg)	□ $PbtO_2$ monitor	□ Cerebral oximetry monitoring (NIRS) (%)	□ Intraventricular pressure monitor (mm Hg)	□ Other (specify): _____
Date installed	__ __/ __ __ __/ 20__ __	__ __/ __ __ __/ 20__ __	__ __/ __ __ __/ 20__ __	__ __/ __ __ __/ 20__ __	__ __/ __ __ __/ 20__ __
Date removed	__ __/ __ __ __/ 20__ __	__ __/ __ __ __/ 20__ __	__ __/ __ __ __/ 20__ __	__ __/ __ __ __/ 20__ __	__ __/ __ __ __/ 20__ __
Record worst value of the day					
Day 1 (Day of study consent)	_____	_____	_____	_____	_____
Day 2	_____	_____	_____	_____	_____
Day 3	_____	_____	_____	_____	_____
Day 4	_____	_____	_____	_____	_____
Day 5	_____	_____	_____	_____	_____
Day 6	_____	_____	_____	_____	_____
Day 7	_____	_____	_____	_____	_____

□ Cerebral dialysis	Date installed	__ __/ __ __ __/ 20__ __	Date removed	__ __/ __ __ __/ 20__ __	
	Glucose (mmol/L)	Lactate (mmol/L)	Pyruvate (µmol/L)	Glutamate (µmol/L)	Lactate/Pyruvate ratio
Record worst value of the day					
Day 1	_____	_____	_____	_____	_____
Day 2	_____	_____	_____	_____	_____
Day 3	_____	_____	_____	_____	_____
Day 4	_____	_____	_____	_____	_____
Day 5	_____	_____	_____	_____	_____
Day 6	_____	_____	_____	_____	_____
Day 7	_____	_____	_____	_____	_____

Version Date: March 4, 2021

ACT-TBI-CRF **Outcome Measures** Patient ID: __ __ - __ __ __

6. Outcome Measures

1. Is patient alive at **Hospital discharge**?	
□ Yes, Patient alive (complete only the following questions if Yes)	
1.1. Date of ICU discharge	__ __ / __ __ __ / 20 __ __
1.2. Is patient still alive at **hospital discharge**?	□ Yes □ No If Yes, date of hospital discharge: __ __ / __ __ __ / 20 __ __
1.3. Hospital discharge location	□ Home □ Palliative Care Facility □ Other Hospital ICU □ Long-term Care Facility □ Rehabilitation Centre □ Other (specify): _____
□ No, Patient died (complete only the following questions if No)	
a. Type of death (specify date/time)	□ Cardio-circulatory arrest ___ ___ / ___ ___ ___ / 20___ ___ __ __ : __ __ □ Neurological death ___ ___ / ___ ___ ___ / 20___ ___ __ __ : __ __
b. Cause of death	
c. Withdrawal of life-sustaining therapies	□ Yes □ No
d. Was an approach made for organ donation?	□ Yes □ No, because (check all that apply): □ Unexpected death □ Physician refusal □ Lack of time □ Lack of resources □ Other (specify): _____

Version Date: March 4, 2021

ACT-TBI-CRF Outcome Measures

Patient ID: __ __ - __ __ __

2. The following questions apply only if there was an approach for organ donation	
e. Was positive consent for organ donation obtained?	□ Yes □ No
f. Who obtained consent?	□ Attending physician □ Resident □ Organ donation specialist (MD) □ Organ donation specialist (nurse) □ Organ donation organization staff □ Other (specify): _____
g. Who led the discussion?	□ Attending physician □ Resident □ Organ donation specialist (MD) □ Organ donation specialist (nurse) □ Organ donation organization staff □ Other (specify): _____
h. Who was present during the discussion? (check all that apply)	□ Parent □ Siblings □ Spouse/partner □ Friend □ Other (specify): _____
i. At what moment the family was approached (specify date/time)?	___ ___ / ___ ___ ___ / 20___ ___ __ __ : __ __ If neurological death: □ Before neurological death diagnosis □ After neurological death diagnosis
j. Who provided consent?	□ Parents □ Siblings □ Spouse/partner □ Other (specify): _____
k. Date/time consent was obtained (DD/MMM/YYY) (hh:mm)	__ __/ __ __ __ / 20 __ __ __ __ : __ __ (24 hr)
l. Did the patient donate at least one organ?	□ Yes □ No If no, specify why: _____

2. Was the patient co-enrolled in another study?		□ Yes □ No	
Complete the following questions for every co-enrolled study :			
Study Name	Study Protocol Identifier	Study Principal Investigator	Patient Identification Number (in the co-enrolled study)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Version Date: March 4, 2021

ACT-TBI-CRF **Long-term Follow-Up** Patient ID: __ __ - __ __ __

7. Long-term Follow-up

6 months follow-up	□ Not done because patient died prior to the 6 months follow-up If patient died between ICU discharge and 6 months follow-up, specify date/time & cause of death: ___ ___ / ___ ___ ___ / 20___ ___ __ __ : __ __ _____ _____ _____

A. extended Glasgow Outcome Scale (GOSe)	
Date of evaluation (DD/MMM/YYYY):	__ __ / __ __ __ /__ __ __ __
Respondent:	☐ Patient alone ☐ Relative/friend/caretaker alone ☐ Patient plus relative/friend/caretaker
Consciousness	
1. Is the person able to obey simple commands or say any words?	☐ Yes ☐ No (VS)
Independence at home	
2a. Is the assistance of another person at home essential every day for some activities of daily living?	☐ Yes ☐ No **If no: go to 3**
2b. Do you/your relative need frequent help of someone to be around at home most of tine time?	☐ Yes (lower SD) ☐ No (upper SD)
2c. Were you/was your relative independent at home before the injury?	☐ Yes ☐ No
Independence outside home	
3a. Are you/Is your relative able to shop without assistance?	☐ Yes ☐ No (upper SD)

Version Date: March 4, 2021

ACT-TBI-CRF Long-term Follow-Up Patient ID: __ __ - __ __ __

3b. Were you/was your relative able to shop without assistance before?	☐ Yes ☐ No
4a. Were you/was your relative able to travel locally without assistance?	☐ Yes ☐ No (upper SD)
4b. Were you/was your relative able to travel locally without assistance before the injury?	☐ Yes ☐ No
Work	
5a. Are you/Is your relative currently able to work (or look after others at home) to their previous capacity?	☐ Yes **If Yes: go to 6** ☐ No
5b. How restricted are you/is your relative?	
a. Reduced work capacity?	☐ a. (upper MD)
b. Able to work only in a sheltered workshop or non-competitive job or currently unable to work?	☐ b. (lower MD)
5c. Does the level of restriction represent a change in respect to the pre-brain injury situation?	☐ Yes ☐ No
Social and Leisure Activities	
6a. Are you/is your relative able to resume regular social and leisure activities outside home?	☐ Yes **If Yes: go to 7** ☐ No
6b. What is the extent of restriction on your/your relative social and leisure activities?	
a. Participate a bit less: at least half as often as before injury	☐ a. (lower GR)
b. Participate much less: less than half as often	☐ b. (upper MD)
c. Unable to participate: rarely, if ever, take part	☐ c. (lower MD)
6c. Does the extent of restriction in regular social and leisure activities outside home represent a change in respect or pre-brain injury?	☐ Yes ☐ No
Family and Friendships	
7a. Has there been family or friendship disruption due to psychological problems?	☐ Yes ☐ No **If No: go to 8**

Version Date: March 4, 2021

ACT-TBI-CRF **Long-term Follow-Up** Patient ID: __ __ - __ __ __

7b. What has been the extent of disruption or strain?	
a. Occasional – less than weekly b. Frequent – once a week or more, but not tolerable c. Constant – daily and intolerable	☐ a. (lower GR) ☐ b. (upper MD) ☐ c. (lower MD)
7c. Does the level of disruption or strain represent a change in respect to pre-brain injury situation?	☐ Yes ☐ No
Return to normal life	
8a. Are there any other current problems relating to the injury which affect daily life?	☐ Yes (lower GR) ☐ No (upper GR)
8b. If similar problems were present before the injury, have these become markedly worse?	☐ Yes ☐ No
9. What is the most important factor in outcome?	☐ a. Effects of brain injury ☐ b. Effects of illness or injury to another part of the body ☐ c. A mixture of these
GOSe Score	_____

Version Date: March 4, 2021

ACT-TBI-CRF **Long-term Follow-Up** Patient ID: __ __ - __ __ __

B. modified Rankin Scale (mRS)		
Date of evaluation (DD/MMM/YYYY):	__ __ / __ __ __ /__ __ __ __	
Respondent:	☐ Patient ☐ Spouse ☐ Son ☐ Daughter ☐ Father ☐ Mother ☐ Physical therapist ☐ Speech therapist ☐ Medical record ☐ Other individual, specify role: _____	☐ Sister ☐ Brother ☐ Other relative, specify relationship: _____ ☐ Friend ☐ Nurse ☐ Home health aide ☐ Occupational therapist ☐ Physician
5 BEDRIDDEN		
5.1 Is the person bedridden?	☐ Yes (5) ☐ No	
4 ASSISTANCE TO WALK		
4.1 Is another person's assistance essential for walking?	☐ Yes (4) ☐ No	
3 ASSISTANCE TO LOOK AFTER OWN AFFAIRS		
3.1 Is assistance ABSOLUTELY essential for preparing a simple meal?	☐ Yes (3) ☐ No	
3.2 Is assistance ABSOLUTELY essential for basic household chores?	☐ Yes (3) ☐ No	
3.3 Is assistance ABSOLUTELY essential for looking after household expenses?	☐ Yes (3) ☐ No	
3.4 Is assistance ABSOLUTELY essential for local travel?	☐ Yes (3) ☐ No	
3.5 Is assistance ABSOLUTELY essential for local shopping?	☐ Yes (3) ☐ No	
2 USUAL DUTIES AND ACTIVITIES		
Work 2.1 Has the brain injury substantially reduced (compared to preinjury status) the person's ability to work (or, for a	☐ Yes (2) ☐ No	

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ACT-TBI-CRF **Long-term Follow-Up** Patient ID: __ __ - __ __ __

student, study)?	
Family responsibilities 2.2 Has the brain injury substantially reduced (compared to preinjury status) the person's ability to look after family at home?	☐ Yes ☐ No (2)
Social & leisure activities 2.3 Has the brain injury reduced (compared to preinjury status) the person's regular free-time activities by more than one half as often?	☐ Yes ☐ No (2)
Other physical/medical condition 2.4 Are the patient's work, family, and/or social/leisure activities substantially reduced by a physical/medical condition other than the brain injury that led to trial enrollment?	☐ Yes ☐ No (2)
1 SYMPTOMS AS A RESULT OF THE BRAIN INJURY	
1.1 Spontaneously Reported Symptoms **1.1** Does the patient have any symptoms resulting from the brain injury?	☐ Yes ☐ No (1)
1.2 Symptom Checklist	
1.2.1 Does the person have difficulty reading or writing as a result of the brain injury?	☐ Yes ☐ No (1)
1.2.2 Does the person have difficulty speaking or finding the right word as a result of the brain injury?	☐ Yes ☐ No (1)
1.2.3 Does the person have problems with balance or coordination as a result of the brain injury?	☐ Yes ☐ No (1)
1.2.4 Does the person have visual problems as a result of the brain injury?	☐ Yes ☐ No (1)
1.2.5 Does the person have numbness (face, arms, legs, hands, feet) as a result of the brain injury?	☐ Yes ☐ No (1)
1.2.6 Does the person have weakness or loss of movement (face, arms, legs, hands, feet) as a result of the brain injury?	☐ Yes ☐ No (1)
1.2.7 Does the person have difficulty with swallowing as a result of the brain injury?	☐ Yes ☐ No (1)
1.2.8 Does the person have any other symptoms related to the brain injury?	☐ Yes ☐ No (1)
Rankin Grade	_____

Version Date: March 4, 2021

ACT-TBI-CRF **Violations/Deviations** Patient ID: __ __ - __ __ __

8. Violations/Deviations

1. Has there been any violations/deviations during the study?	□ Yes □ No
If Yes, complete the following questions:	
Date/time occurred	__ __ / __ __ __ / 20 __ __ __ __ : __ __
Specify violation	Violations: □ Consent not obtained in 7 days. □ Other (specify): _____
Provide the reason and all important information regarding the violation/deviation	_____ _____

Version Date: March 4, 2021

ACT-TBI-CRF **Final Protocol Disposition** Patient ID: __ __ - __ __ __

9. Final Protocol Disposition

1. How did the patient complete the study?	
□ Normal protocol completion □ Protocol completion with protocol deviation □ Study not completed □ Withdrawal of consent i. Date/time of withdrawal: ___ ___ / ___ ___ ___ / 20___ ___ ___ ___: ___ ___ ii. Reason given: _____ iii. □ with authorization to use data □ without authorization to use data	
2. Research Coordinator Signature	
Signature: _____	Date (DD/MMM/YYYY): : __ __/___ ___ ___ /20__ __
3. Investigator Signature	
Signature: _____	Date (DD/MMM/YYYY): : __ __/___ ___ ___ /20__ __

Version Date: March 4, 2021

ACT-TBI-CRF Summary of Radiology Tests Patient ID: __ __ - __ __ _

1. Summary of Radiology Tests

1. Radiology CRF		
1.1 Modalities available	CT Head	□ Yes □ No
	CTP	□ Yes □ No
	CTA	□ Yes □ No
1.2 Additional Ancillary Imaging Tests		□ Yes □ No □ CT-scan angiography □ MRI □ MRI angiography □ EEG □ Transcranial Doppler □ SSEP □ Brain CT-perfusion (other than study's CT-perfusion) □ Nuclear imaging (SPECT) □ Other. Specify: _____ Remarks on this test: __ __ ____ __ ____ __ ____ __ ____ __ ____ __ ____ __ ____ __ ____ __ _____ __ ____ __ ____ __ _____ __ ____ __ ____ ____ __ ____ __ ____ __ _____ __ ____ __ ____ __ _____ _
1.3 Any other remarks		

Version Date: October 2, 2020

ACT-TBI-CRF Summary of Radiology Tests Patient ID: __ __ - __ __ __

2. Radiology Case Report Form: Plain CT Head

Instructions

Please interpret plain CT head, when available. Base of skull fracture is to be commented upon.

If the potential cause of brain injury is not specified, please put that in Section 2.7.
If any other relevant findings on plain CT regarding potential diagnosis of brain death, please add that in remarks (Section 2.8).

Version Date: March 4, 2021

ACT-TBI-CRF Summary of Radiology Tests Patient ID: __ __ - __ __ __

2. Plain CT Head: complete this section if Yes checked for CT Head	
2.1. Date of interpretation	__ __ /__ __ __/__ __ __ __
2.2. Plain CT Test ID:	_____
2.3. Diffuse loss of Grey-white differentiation compatible with diffuse cerebral edema	□ Yes □ No
2.4. Evidence of brain herniation	□ Yes □ No
2.5. Potential cause of brain injury on imaging:	_____
2.6. Subarachnoid hemorrhage,	□ Yes □ No
2.7. Intracranial hemorrhage	□ Yes □ No
2.8. Penetrating injury	□ Yes □ No
2.9. Large ischemic stroke (> 50% of the arterial territory)	□ Yes □ No
2.10. If other, specify	_____
2.11. Base of skull fracture	□ Yes □ No □ Uncertain (bone window not available)
2.12. Remarks (any other findings)	_____

Version Date: March 4, 2021

ACT-TBI-CRF Summary of Radiology Tests Patient ID: __ __ - __ __ __

3. Radiology Case Report Form: CT Perfusion

Instructions

CTP definitions: Both **qualitative and quantitative** assessment of CTP will be done.

Qualitative assessment- CTP images will be **qualitatively** assessed by 2 Neuroradiologists.

- Matched Cerebral Blood Flow (CBF) and Cerebral Blood Volume (CBV) defect will be defined as decrease in CBV and marked decrease in CBF in the brain **consistent with established infarct**.
- Brainstem matched CBF & CBV defect will be defined as a decrease in CBV and marked decrease in CBF in the whole cross-section of the brainstem in at least 2 consecutive 5 mm slices.
- Isolated Brainstem matched CBF & CBV defect will be defined as decrease in CBV and marked decrease in CBF in the whole cross-section of the brainstem (either midbrain, mid-pons or upper medulla level), but preserved CBF and CBV in rest of the brain parenchyma.

Quantitative assessment- will be done by a research associate under the guidance of Neuroradiologist (JS). Qualitative assessment of CTP will be done by putting a large region of interest incorporating the entire cross-section of the brainstem in the area of matched CBF and CBV defect. The absolute values of CBF and CBV will be obtained at midbrain, mid-pons and upper medulla level. The final values will be taken as average from the two slices. A CBF of <20mL/100g/min and/or a CBV of < 2 mL/100g will be considered compatible with irreversible brain damage and hence brainstem death.

In patients with no imaging evidence of brain death same method of measurement of absolute values of CBF and CBV of brainstem will be used. The values will be recorded as an average of CBF and CBV obtained at midbrain, mid-pons and upper medulla level.

Version Date: March 4, 2021

ACT-TBI-CRF Summary of Radiology Tests Patient ID: __ __ - __ __ __

4. CT-Perfusion (CTP): complete this section if Yes checked for CTP	
4.1. Date of interpretation	__ __ /__ __ __/__ __ __ __
4.2. CTP Test ID:	_________
4.3. Contrast opacification in extra-cranial vessels	□ Appearance □ Disappearance
4.4. Whole brain matched CBF & CBV defect	□ Yes □ No
4.5. Brainstem matched CBF & CBV defect	□ Yes □ No
4.6. Isolated Brainstem matched CBF & CBV defect	□ Yes □ No
4.7. CBF at midbrain (cerebral peduncle level) (in ml/100 gm/min)	__________ ml/100 gm/min (Normal range 38-51)
4.8. CBV at midbrain (cerebral peduncle level) (in ml/100 gm)	____________ ml/100 gm (Normal range 3.1-4.5)
4.9. CBF at mid-pons (in ml/100 gm/min)	__________ ml/100 gm/min
4.10. CBV at mid-pons (in ml/100 gm)	____________ ml/100 gm
4.11. CBF at medulla (upper medulla level) (in ml/100 gm/min)	___________ml/100 gm/min
4.12. CBV at medulla (upper medulla level) (in ml/100 gm)	____________ ml/100 gm
4.13. If isolated brain stem defect, describe the location of preserved perfusion (e.g., cerebral hemisphere, cerebellum or both)	□ Cerebral hemisphere □ Cerebellum □ Both
4.14. Remarks	_ __ __ __ __ __ __ __ __ __ __ __ __ ___

Version Date: March 4, 2021

ACT-TBI-CRF Summary of Radiology Tests Patient ID: __ __ - __ __ __

5. Radiology Case Report Form: CT-Angiogram (CTA)

Instructions

CTA definitions: The contrast opacification of the different segments of the intracranial vessels will be analyzed by 2 Neuroradiologists. CTA will be analyzed on a 4-point, 7-point and 10-point scales on the basis of lack of opacification of the different segments of the intracranial vessels.
Lack of opacification of each of these segments gives one point resulting in "lack of opacification" scores of between 0 and 7.
4-point scale- included non-opacification of 4 vessels- cortical segments of the bilateral middle cerebral arteries (MCA) and the 2 internal cerebral veins (ICV).
7-point scale- included non-opacification in 7 vessels- bilateral M4 segment (cortical branches) of the MCA, bilateral A2 segment (pericallosal branches) of the anterior cerebral artery (ACA), bilateral ICV, and the VOG.
10-point scale- included non-opacification in 10 vessels- bilateral M4 segment (cortical branches) of the MCA, bilateral A2 segment (pericallosal branches) of the anterior cerebral artery (ACA), basilar artery, bilateral P2 segment of the posterior cerebral artery (PCA), bilateral ICV, and the VOG.
Brain death will be called on 4-point scale- when all the 4 vessels were non-opacified (i.e., the score of 4). A score less than 4 will be called "not brain dead".
Brain death will be called on 7-point scale- when all the 7 vessels were non-opacified (i.e., the score of 7). A score less than 7 will be called "not brain dead".
Brain death will be called on 10-point scale- when all the 10 vessels were non-opacified (i.e., the score of 10). A score less than 10 will be called "not brain dead".

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6. CT-Angiogram (CTA) (Peak): Complete this section if Yes checked for CTA			
6.1. Date of interpretation		__ __ /__ __ __/__ __ __ __	
6.2. CTA Test ID:		_____	
6.3. CTA contrast opacification in **Peak Arterial phase**		Right	Left
	Extracranial	□ Yes □ No	□ Yes □ No
	Supraclinoid Internal Carotid Artery (ICA)	□ Yes □ No	□ Yes □ No
	Middle Cerebral Artery (MCA) (M4 or cortical segments)	□ Yes □ No	□ Yes □ No
	Anterior Cerebral Artery (ACA) (A2/3 segment)	□ Yes □ No	□ Yes □ No
	Intracranial Vertebral Artery	□ Yes □ No	□ Yes □ No
	Basilar Artery	□ Yes □ No	
	PCA-P2	□ Yes □ No	□ Yes □ No
	Internal Cerebral Vein (ICV)	□ Yes □ No	□ Yes □ No
	Vein of Galen (VOG)	□ Yes □ No	
6.4. Brain Death on CTA	4 point Scale (MCA & ICV)	□ Yes □ No	
	7 point Scale (MCA, ACA, ICV & VOG	□ Yes □ No	
	10 point Scale (MCA, ACA, BA, PCA-P2, ICV & VOG	□ Yes □ No	
6.5. Remarks			

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7. CT-Angiogram (CTA) (Last Phase): Complete this section if Yes checked for CTA			
7.1. CTA contrast opacification in **last phase (at 60 sec)**		Right	Left
	Extracranial	□ Yes □ No	□ Yes □ No
	Supraclinoid Internal Carotid Artery (ICA)	□ Yes □ No	□ Yes □ No
	Middle Cerebral Artery (MCA) (M4 or cortical segments)	□ Yes □ No	□ Yes □ No
	Anterior Cerebral Artery (ACA) (A2/3 segment)	□ Yes □ No	□ Yes □ No
	Intracranial Vertebral Artery	□ Yes □ No	□ Yes □ No
	Basilar Artery	□ Yes □ No	
	PCA-P2	□ Yes □ No	□ Yes □ No
	Internal Cerebral Vein (ICV)	□ Yes □ No	□ Yes □ No
	Vein of Galen (VOG)	□ Yes □ No	
7.2. Brain Death on CTA	4 point Scale (MCA & ICV)	□ Yes □ No	
	7 point Scale (MCA, ACA, ICV & VOG	□ Yes □ No	
	10 point Scale (MCA, ACA, BA, PCA-P2, ICV & VOG	□ Yes □ No	
7.3. Remarks			

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