APPENDIX 1 - SURVEY

Demographics

1. What is your age?
    a. 18 – 30
    b. 31 – 40
    c. 41 – 50
    d. 51 – 60
    e. Over 60 years
2. What is your gender
    a. Male
    b. Female
    c. Other
3. Do you work in more than 1 hospital (for eg >1 public or a public and private)?
    a. Yes
    b. No
4. Do you treat paediatrics and/or adult patients?
    a. Paediatrics only
    b. Adults only
    c. Both
5. How would you describe the hospital that you predominantly work in?
    a. Tertiary
    b. Metropolitan
    c. Regional
    d. Rural
    e. Private
6. Where is your hospital located?
    a. Victoria
    b. Western Australia
    c. New South Wales
    d. Tasmania
    e. ACT
    f. Queensland
    g. South Australia
    h. Northern Territory
    i. New Zealand
    j. Other (Hong Kong, Singapore, etc)

7. What position do you currently hold in the hospital?
    a. Consultant epileptologist
    b. Consultant neurologist
    c. Epilepsy fellow
    d. Advanced trainee
    e. Hospital medical officer
8. If you are a consultant, how long have you held this position for?
    a. Less than one year
    b. 1 – 2 years
    c. 3 – 5 years
    d. 6 – 10 years
    e. > 10 years
9. Are you a fellow/member of any colleges?
    a. Epilepsy Society of Australia (ESA)
    b. Royal Australian College of Physicians (RACP)
    c. Australian and New Zealand Association of Neurologists (ANZAN)
    d. Australasian College of Emergency Medicine (FACEM)
    e. Fellow of College of Intensive Care Medicine (CICM)
    f. Not applicable

Training

1. Do you hold ANZAN board accreditation for EEG?
    a. No
    b. Level 1
    c. Level 2
    d. Level 3
2. Have you completed a subspecialty fellowship in epilepsy?
    a. No
    b. 1 year
    c. 2+ years
    d. Combined neurophysiology (EEG/NCS) fellowship
3. Have you undertaken training/workshops in continuous EEG?
    a. Yes
    b. No
4. Approximately how many urgent EEGs do you read/report per month?
    a. 0
    b. 0-5

   c. 6-20
   d. >20
5. Have you read/reported continuous EEG?
   a. Yes
   b. No
6. Are you confident reading/reporting ICU EEG?
   a. Confident
   b. Somewhat confident
   c. Neutral
   d. Somewhat not confident
   e. Not confident
7. Are you confident in identifying convulsive status epilepticus?
   a. Confident
   b. Somewhat confident
   c. Neutral
   d. Somewhat not confident
   e. Not confident
8. Are you confident in identifying non-convulsive status epilepticus?
   a. Confident
   b. Somewhat confident
   c. Neutral
   d. Somewhat not confident
   e. Not confident
9. Are you confident in treating status epilepticus?
   a. Confident
   b. Somewhat confident
   c. Neutral
   d. Somewhat not confident
   e. Not confident
10. Do you think a national guideline for status epilepticus should be introduced?
   a. Strongly agree
   b. Agree
   c. Mutual
   d. Disagree
   e. Strongly disagree
11. Do you think a national guideline for the provision of continuous EEG should be introduced?

   a. Strongly agree
   b. Agree
   c. Mutual
   d. Disagree
   e. Strongly disagree

12. Do you think formal training should be given for ICU/continuous EEG?
   a. Yes for all neurologists
   b. Yes only for epileptologists
   c. Yes for critical care physicians
   d. Yes for all
   e. No

Access and Equipment

1. Do you have a neuro-HDU at your hospital accessible for neurology patients?
   a. Yes
   b. No
2. Do you have a neuro-ICU at your hospital?
   a. Yes
   b. No
3. Is continuous (>1hr-24hrs) EEG available in your centre for the assessment of urgent admitted inpatients (ICU or ward)?
   a. Yes
   b. Yes but ad hoc
   c. No, daily routine EEG if required
   d. Less than daily routine EEG
   e. No EEG
4. Approximately how many continuous EEGs does your centre perform per month?
   a. 0
   b. 1-2
   c. 3-10
   d. >10
5. Do you have remote computer access to review EEG?
   a. Yes and live review
   b. Yes and non-live review
   c. No
6. Do you use quantitative EEG (QEEG) for assessment of continuous EEG?
   a. Yes

   b. No
7. How many EEG machines do you have available for continuous EEG?
   a. 0
   b. 1
   c. 2
   d. >2
8. What is your EEG technician/scientist coverage?
   a. 24/7 as required
   b. 7 days within standard hours only
   c. 5 days/wk standard hours
   d. <5 days/wk
9. Number of neurologists/epileptologists that read/report urgent EEG?
   a. 0
   b. 1
   c. 2
   d. >2
10. What is the frequency of cEEG review?
   a. Live (trained bedside nurse)
   b. Ad hoc
   c. Twice daily
   d. Once daily
   e. Retrospective post completion of study
11. What is the frequency of cEEG reporting?
   a. Live (trained bedside nurse EEG charting)
   b. Ad hoc
   c. Twice daily
   d. Once daily
   e. Retrospective post completion of study
12. How often does your centre have access to an epileptologist?
   a. 24/7 officially oncall
   b. 24/7 unofficially oncall
   c. Standard hours only
   d. Staff general neurologists only
13. Does your unit audit status epilepticus and/or continuous EEG?
   a. No
   b. Yes

14. What is the largest barrier to commencing or expanding a continuous EEG service at your hospital?
    a. Non-believer
    b. Lack of funding
    c. Lack of physical resources including equipment and technology
    d. Lack of personnel
    e. Lack of knowledge to run a continuous EEG service
    f. Other (specify)

Management of Status Epilepticus

1. Do you have local hospital guidelines published for management of status epilepticus
    a. Yes
    b. No
2. What is your most commonly-used first line therapy for status epilepticus?
    a. Midazolam
    b. Clonazepam
    c. Lorazepam
    d. Diazepam
    e. Antiepileptic drug
    f. Other
    g. TOTAL DOSE:
    h. ROUTE: Buccal, inhaled, intranasal, IM, IV
3. What is your most commonly-used second line therapy for status epilepticus?
    a. Levetiracetam
    b. Phenytoin
    c. Valproate
    d. Lacosamide
    e. Benzodiazepine infusion
    f. Other
    g. DOSE:
4. What is your most commonly-used third line therapy for status epilepticus?
    a. Levetiracetam
    b. Phenytoin
    c. Valproate
    d. Lacosamide
    e. Benzodiazepine infusion
    f. Barbiturate infusion
    g. Increase/repeat second line therapy
    h. Anaesthetic induction and intubation
    i. DOSE:
5. What stage do you advise anaesthetic induction and intubation?
    a. Benzodiazepine failure
    b. 1st AED failure
    c. 2nd AED failure
    d. Other (specify)

6. At what stage following poor recovery in consciousness post seizure would you recommend an urgent EEG?
    a. 10mins
    b. 30mins
    c. 60mins
    d. >2hrs
7. How long would you routinely assess for using urgent EEG?
    a. 10mins
    b. 15mins
    c. 30mins
    d. 60mins
    e. >60mins
    f. >60mins only if epileptiform activity seen
8. Following cessation of convulsive seizures and non-convulsive (electrographic) status epilepticus seen on EEG, would you continue the EEG?
    a. No
    b. Yes for 24hrs
    c. Yes until seizures cessation
    d. Yes until seizure cessation and for a further 24hrs without seizures
9. Following cessation of convulsive seizures and non-convulsive (electrographic) status epilepticus seen on EEG, what treatment would you advise next?
    a. No treatment
    b. Benzodiazepine challenge
    c. Escalate AEDs
    d. Recommend anaesthesia and intubation
10. Which anaesthetic would you recommend for anaesthetic induction for cessation of seizures? (May select 2)
    a. Midazolam
    b. Propofol
    c. Thiopentone
    d. Phenobarbitone
    e. Pentobarbital
    f. Ketamine
11. What treatment target do you aim for following refractory status epilepticus?
    a. Absence of clinical seizures (without EEG)
    b. Anaesthetic induction for 24hrs (without EEG)
    c. Seizure cessation

   d. Seizure cessation for >24hrs
   e. Suppression of all epileptic activity
   f. Suppression of all epileptic activity for >24hrs
   g. Burst suppression
   h. Burst suppression for 24hrs
   i. Case specific targets

12. Are you experienced in any of the following therapies for refractory status epilepticus? (may select many)
   a. Further trials of AEDs
   b. Barbiturate coma
   c. Ketamine
   d. Ketogenic diet
   e. Immunotherapy
   f. Vagal nerve stimulation (VNS)
   g. Epilepsy surgery
   h. Electroconvulsant therapy (ECT)
13. What treatment target do you aim for management of non-convulsive status epilepticus?
   a. Absence of clinical seizures (without EEG)
   b. Seizure cessation via intermittent (non-continuous) EEG
   c. Seizure cessation via continuous EEG
   d. Suppression of all seizures and rhythmic periodic discharges >2Hz
   e. Suppression of all epileptiform activity
   f. Anaesthetic induced burst suppression
   g. Case specific targets
14. What maximal escalation of care would you suggest for treatment of non-convulsive status epilepticus?
   a. Ward based escalation of AEDs
   b. Ward based escalation of AEDs and limited infusional sedation eg. Midazolam
   c. Refer to HDU/ICU for infusional sedation/anaesthetic without intubation
   d. Refer to ICU for anaesthetic induction and intubation

APPENDIX 2 – RESULTS FOR SUBSEQUENT MANAGEMENT OF STATUS EPILEPTICUS

Questions and Alternatives	**Responses (%), n=34***
What stage do you advise anaesthetic induction and intubation for convulsive status epilepticus?	
- Benzodiazepine failure	3 (9%)
- 1st antiepileptic drug failure	9 (26%)
- 2nd antiepileptic drug failure	22 (65%)
What stage do you advise anaesthetic induction and intubation for non-convulsive status epilepticus?	
- Benzodiazepine failure	2 (6%)
- 1st antiepileptic drug failure	1 (3%)
- 2nd antiepileptic drug failure	17 (50%)
- Never	3 (9%)
- Other*	11 (32%)
At what stage following poor recovery in consciousness without ongoing overt seizures post seizure would you ideally recommend an urgent EEG?	
- 10mins	5 (15%)
- 30mins	8 (24%)
- 60mins	17 (50%)
- 2hrs	4 (12%)
- Never	0 (0%)
If non-convulsive status or non-convulsive seizures are suspected, what duration of EEG assessment would you recommend?	
- 10-15mins	0 (0%)
- 30mins	5 (15%)
- 60mins	8 (24%)
- 3hrs	1 (3%)

- 24hrs	13 (38%)
- >60mins only if epileptiform activity is seen	4 (12%)
- Other*	3 (9%)
Following cessation of convulsive seizures, non-convulsive (electrographic) status epilepticus seen on EEG. What treatment would you advise next?	N=33*
- No treatment	0 (0%)
- Benzodiazepine challenge	7 (21%)
- Escalate AEDs	10 (30%)
- Recommend anaesthesia and intubation	3 (9%)
- Case by case decision	13 (39%)
Which anaesthetic would you recommend for anaesthetic induction for refractory status epilepticus? (May select 2)	
- Midazolam	21 (64%)
- Propofol	24 (73%)
- Thiopentone	9 (27%)
- Phenobarbitone	4 (12%)
- Pentobarbital	1 (3%)
- Ketamine	2 (6%)
What treatment target do you aim for following refractory status epilepticus?	
- Absence of clinical seizures (without EEG)	1 (3%)
- Anaesthetic induction for 24hrs (without EEG)	0 (0%)
- Electrographic seizure cessation	6 (18%)
- Electrographic seizure cessation for >24hrs	10 (30%)
- Suppression of all epileptiform activity	1 (3%)
- Suppression of all epileptiform activity for >24hrs	1 (3%)
- Burst suppression	1 (3%)
- Burst suppression for 24hrs	9 (27%)
- Case specific targets	4 (12%)
What treatment target do you aim for management of non-convulsive seizures or non-convulsive status epilepticus?	

- Absence of clinical seizures (without EEG)	0 (0%)
- Seizure cessation via intermittent (non-continuous) EEG	6 (18%)
- Seizure cessation via continuous EEG	16 (48%)
- Suppression of all epileptiform activity	2 (6%)
- Anaesthetic induced burst suppression	3 (9%)
- Case specific targets	5 (15%)
- Other (specify)	1 (3%)
What maximal escalation of care would you suggest for treatment of non-convulsive status epilepticus?	
- Ward based escalation of AEDs	0 (0%)
- Ward based escalation of AEDs and limited infusional sedation eg. Midazolam	3 (9%)
- Refer to HDU/ICU for infusional sedation/anaesthetic without intubation	9 (27%)
- Refer to ICU for anaesthetic induction and intubation	16 (48%)
- Other (specify)	5 (15%)
Treatment experience for super refractory status epilepticus	
- Further trials of AEDs	32 (97%)
- Barbiturate coma	29 (88%)
- Ketamine	23 (70%)
- Ketogenic diet	26 (79%)
- First line immunotherapy (steroids, IVIg, plasma exchange)	30 (91%)
- Second line immunotherapy (rituximab, cyclophosphamide etc.)	19 (58%)
- Vagal nerve stimulation (VNS)	7 (21%)
- Epilepsy surgery	17 (52%)
- Electroconvulsant therapy (ECT)	2 (6%)
- Others:	0 (0%)
Do you think a national guideline for management of status epilepticus should be introduced?	
- Strongly agree	16 (48%)

- Agree	10 (30%)
- Neutral	6 (18%)
- Disagree	1 (3%)
- Strongly disagree	0 (0%)

**2 participants did not provide complete responses for this section*