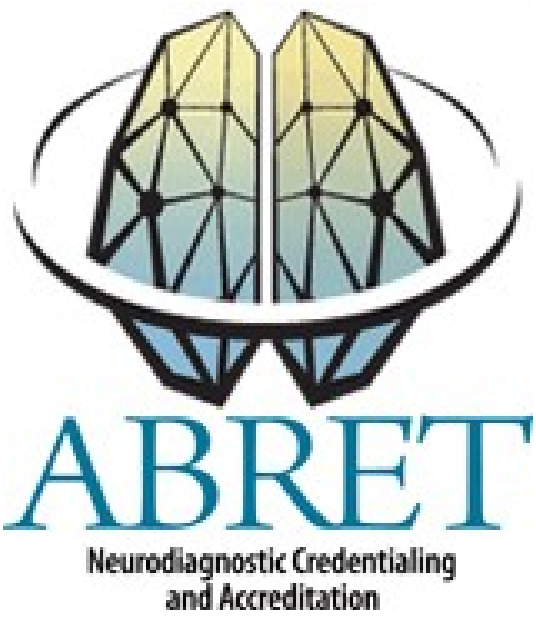
Report of the 2023 ABRET-EEG Job Task Analysis



Prepared for ABRET by
Professional Testing Corporation

PROFESSIONAL TESTING CORPORATION

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SURVEY BACKGROUND, PURPOSE, AND METHODOLOGY

A job task analysis study was undertaken by ABRET with the assistance of the Professional Testing Corporation (PTC). The study was conducted by convening a Task Force to delineate the tasks, divided into domains, and knowledge areas involved in the profession of electroencephalographic (EEG) technologists. The Task Force members rated the tasks for frequency performed and importance, the knowledge areas for importance, and the domains for frequency of performance and importance. A separate panel of Independent Raters validated the work of the Task Force by rating the tasks, knowledge areas, and domains.

The results will be used in the evaluation and revision of the test specifications for the Registration Examination for Electroencephalographic Technologists (R. EEG T.) examination. This process enhances the validity of the examination and the quality of the examination program for the R. EEG T. credential.

The Job Task Analysis Study

In May 2023, ABRET initiated a job task analysis (JTA) to serve as the basis for updating the test specifications for the R. EEG T. examination. Due to concerns that a validation survey might have a low response rate, ABRET chose to use a Task Force or Focus Group method for this study. A Task Force was appointed for the delineation of tasks, domains, and knowledge areas. The panel was composed of eight electroencephalographic technologists representing a variety of practice settings, years of experience, years since certification, and geographic location.

TABLE 1
TASK FORCE MEMBERS

Name	Credentials Held	Years of Experience	Year Certified	Employer	State	Title
			2017			
	R.EEG T.	19	2008			
'	R. EEG T.	35	1990			
	R. EEG T., EP	34	1991			
	R. EEG T.	10	2016			
	R. EEG T.	21	2016			
	R. EEG T.	6	2018			
	R. EEG T.	12	2017			

PTC staff who participated in the study included Psychometrician, Associate Director of Psychometric Services, and Associate Director of Psychometric Services. These staff members facilitated the Task Force discussions that led to

the delineation of the tasks, domains, and knowledge areas, analyzed the data collected from the Task Force and Independent Raters, and wrote the report and conclusions.

The Task Force was divided into two subgroups to facilitate discussions. The two subgroups began by reviewing the domains, tasks, and knowledge areas that were developed in the practice analysis study conducted in 2018 and evaluated them against current, best practice. At each stage of the discussions, each subgroup reviewed and validated the work of the other subgroup before reaching a consensus on the domains, task statements, and knowledge areas. The name of Domain I was changed from Fundamental Concepts to Pre-Study Procedures. The task statements and knowledge areas that were deemed applicable to current practice were edited for clarity and comprehensiveness. The Task Force also added new tasks and knowledge areas as necessary to accurately represent the current profession. The Task Force agreed upon 18 task statements (organized into 4 domains), and 47 knowledge areas to be rated.

The Task Force also set the scales for the ratings. The frequency scale for the task statements was set at Always (Performed with more than 90% of patients), Usually (Performed with 51-90% of patients), Occasionally (Performed with 10-50% of patients), and Rarely (Performed with fewer than 10% of patients). The importance scale was set at Very Important, Important, Somewhat Important, and Minimally Important. The knowledge areas were rated for importance with the same scale as used for the importance of tasks. The domains were rated for importance using the same scale as for tasks and knowledge areas. Raters also estimated the percentage of time they devote to tasks in each domain, to add up to 100%. Four of the Task Force members provided ratings of the tasks, domains, and knowledge areas. Task Force members also used a matrix of domains and knowledge areas to indicate which domains draw upon which knowledge areas.

A separate panel of Independent Raters was composed of eleven electroencephalographic technologists who had not taken part in the discussions. The Independent Raters represented a variety of practice settings, years of experience, years since certification, and geographic locations (see Table 2). The Independent Raters validated the work of the Task Force by individually rating the tasks, knowledge areas, and domains.

TABLE 2
INDEPENDENT RATERS

Name	Credentials Held	Years of Experience	Year Certified	Employer	State	Title
	R. EEG T.	30	1985			
	R. EEG T.	10	2017			
	R. EEG T., CLTM	10	2013, 2018			
	R. EEG T., CLTM, NA-CLTM	34	1990, 2008, 2021			

TABLE 2
INDEPENDENT RATERS

Name	Credentials Held	Years of Experience	Year Certified	Employer	State	Title
	R. EEG T., CLTM	13	2012, 2021			
	R. EEG T.	16	2019			
	R. EEG T.	46	1980			
	R. EEG T.	7	2016			
	R. EEG T.	7	2018			
	R. EEG T.		2022			

The results of the ratings from the Task Force and the Independent Raters will be used as the basis for updating the test specifications for the R. EEG T. examination and are included in this report.

TASK STATEMENT RATINGS

There were 18 tasks categorized into 4 domains (see Table 3).

TABLE 3
DOMAINS AND NUMBER OF ASSOCIATED TASKS

Domain	Number of Associated Tasks
I: Pre-Study Procedures	2
II: Performing the EEG Study	8
III: Post-Study Procedures	4
IV: Ethics and Professional Issues	4

All statements were rated both as to frequency of performance of the task and importance of the task for competent performance. Frequency and importance values are used because there might be tasks that are performed frequently but are not highly important for competent performance, while other tasks might be performed infrequently but are very important for competent performance. The rating scales were as follows:

Frequency Ratings	Importance Ratings
How often is the task performed as part of the job? 4 = Always (Performed with over 90% of patients) 3 = Usually (Performed with 51-90% of patients) 2 = Occasionally (Performed with 10-50% of patients) 1 = Rarely (Performed with fewer than 10% of patients)	How important is this task for competent performance? 4 = Very Important 3 = Important 2 = Somewhat Important 1 = Minimally Important

Average Ratings

The average frequency and importance ratings for the responses from the Task Force and the Independent Raters were calculated for each of the four domains (see Table 4). The ratings for the two groups combined also are shown. Domain IV: Ethics and Professional Issues received the highest frequency and importance ratings, closely followed by Domain II: Performing the EEG Study.

TABLE 4
AVERAGE TASK STATEMENT RATINGS BY DOMAIN

Domain	Task Force		Independent Raters		Combined Group	
	Frequency	Importance	Frequency	Importance	Frequency	Importance
I: Pre-Study Procedures	4.0	3.75	3.88	3.69	3.92	3.71
II: Performing the EEG Study	3.91	3.91	3.97	3.70	3.95	3.77
III: Post-Study Procedures	3.25	3.3	3.66	3.41	3.54	3.44
IV: Ethics and Professional Issues	4.0	4.0	4.0	3.80	4.0	3.86

Most Frequently Performed Tasks

There were 10 tasks that received frequency ratings of 4.0 by all Task Force members and Independent Raters, half of which are in Domain II: Performing the Study:

Domain II: Performing the EEG Study

B. Prepare the sites for electrode placements in order to obtain appropriate impedance
C. Securely apply the electrodes per facility protocols
D. Check impedance according to ACNS Guidelines to ensure electrode integrity
E. Perform the EEG study according to ACNS Guidelines while ensuring the integrity of the data and equipment
H. Document patient behavior and clinical events for the interpreting physician to identify clinical correlates in the EEG

Domain III: Post-Study Procedures

C. Clean and disinfect electrodes per ASET Infection Prevention Guidelines or dispose of electrodes according to facility protocols

Domain IV: Ethics and Professional Issues

A. Conduct practice in a manner consistent with the ABRET Code of Ethics
B. Maintain patient confidentiality and comply with HIPAA/HITECH regulations
C. Ensure patient safety and self-safety
D. Conduct oneself in a professional manner during each encounter with a patient

Most Important Tasks for Competent Performance

There were 2 tasks that received average importance ratings over 3.9 across all Task Force members and Independent Raters:

Domain II: Performing the EEG Study

H. Document patient behavior and clinical events for the interpreting physician to identify clinical correlates in the EEG

Domain IV: Ethics and Professional Issues

B. Maintain patient confidentiality and comply with HIPAA/HITECH regulations

Least Frequently Performed and Least Important Tasks

None of the tasks received low ratings (<2.0) for frequency or importance.

KNOWLEDGE AREAS

The Task Force and Independent Raters were asked to rate 47 knowledge areas as to how important each knowledge was to competent performance as an electroencephalographic technologist. The scale was the same as that used to rate importance of tasks. The Task Force also indicated which knowledge areas are drawn upon to support tasks in the different domains. These linkages are shown in Appendix A and are included in the content outline at the end of this report.

Most Important Knowledge Areas for Competent Performance

There were 30 knowledge areas that were rated 3.5 or higher in importance to competent performance across the Task Force and the Independent Raters (see Table 5).

TABLE 5
MOST IMPORTANT KNOWLEDGE AREAS

Knowledge Area	Mean	SD
01. ACNS Guidelines (Guidelines 1-7)	3.75	0.45
04. Neurological disorders (e.g., seizures, tumors, progressive degenerative disorders, vascular disease)	3.83	0.58
07. Head trauma and traumatic brain injury	3.50	0.80
08. Skull defects and malformations	3.83	0.39
11. Components of an EEG procedure (ACNS Guidelines 1 & 5)	3.75	0.62
12. 10-20 electrode placement system (ACNS Guideline 2)	3.92	0.29
13. Electrode application techniques (e.g., paste, collodion, needle electrodes)	3.92	0.29
15. Skin integrity	3.50	0.67
16. Range of standard impedance values	3.58	0.51
17. Conditions affecting impedance	3.67	0.49
22a. EEG patterns (e.g., normal EEG and benign variants, abnormal EEG, artifacts, sleep architecture, differences among patient populations and settings)	3.83	0.39
22b. Polarity and localization techniques	3.58	0.51
22d. Artifact monitoring, identification, mitigation, and documentation	3.83	0.39
23. Troubleshooting techniques	3.50	0.52
24. Activation procedures (e.g., sleep deprivation, photic stimulation, hyperventilation)	3.75	0.45
25. Medical contraindications to activation procedures	3.92	0.29
26. Reactivity	3.50	0.52
27. Electrographic correlates to clinical entities	3.67	0.49
28. Patient behaviors and clinical events (e.g., changes in level of consciousness, sleep stages, body movements, episodes)	3.83	0.39
30. Electrographic changes requiring provider notification (including critical values)	3.92	0.29
31. Brain death and electrocerebral inactivity (ECI) (ACNS Guideline 6)	3.50	0.52
32. Seizure precautions	3.92	0.29
33. Effects of drugs on recordings	3.75	0.45
34. Age-specific criteria	3.50	0.52
42. Infection prevention	3.83	0.39
43. HIPAA/HITECH standards	3.75	0.45
44 . SDS/OSHA standards	3.67	0.49

TABLE 5
MOST IMPORTANT KNOWLEDGE AREAS

Knowledge Area	Mean	SD
45. Electrical safety techniques	3.58	0.67
46. ABRET Code of Ethics	3.67	0.49
47. National Patient Safety Goals	3.50	0.67

Members of the Task Force used a matrix to indicate the linkages between domains and the knowledge areas drawn upon to perform tasks in those domains. These linkages are presented as part of the content outline at the end of this report.

Least Important Knowledge Areas for Competent Performance

The lowest rated knowledge area was 40: Media management (e.g., copy, storage, archive) (ACNS Guideline 4), which had an average rating of 2.25 across Task Force members and Independent Raters. The Task Force agreed that this knowledge area should be retained in the content outline, even though it received the lowest rating, because it is a subject that should be known by EEG technologists, as supported by the ACNS Guidelines.

IMPORTANCE OF DOMAINS FOR COMPETENT PERFORMANCE

The respondents were asked to rate the importance of each domain for competent performance. Both Task Force and Independent Raters gave the highest importance to Domain II: Performing the EEG Study. The Task Force rated the other three domains the same, while the Independent Raters gave the lowest rating to Domain IV: Ethics and Professional Issues, as is reflected in the Combined Group as well.

TABLE 6
AVERAGE IMPORTANCE RATINGS PER DOMAIN

Domains	Average Rating: Task Force (SD)	Average Rating: Independent Raters (SD)	Average Rating: Combined Group (SD)
I: Pre-Study Procedures	3.25 (0.96)	3.75 (0.46)	3.58 (0.67)
II: Performing the EEG Study	4.00 (0)	3.88 (0.34)	3.92 (0.29)
III: Post-Study Procedures	3.25 (0.50)	3.38 (0.52)	3.33 (0.49)
IV: Ethics and Professional Issues	3.25 (0.50)	3.25 (0.71)	3.25 (0.62)

PERCENTAGE OF TIME SPENT IN EACH DOMAIN

The respondents were asked to estimate how much of their work time is devoted to tasks in each of the domains (see Table 7). Both the Task Force and Independent Raters spend most time in Domain II: Performing the EEG Study and the least time in Domain IV: Ethics and Professional Issues, as is reflected in the Combined Group as well.

TABLE 7
AVERAGE PERCENTAGE OF TIME PER DOMAIN

Domains	Percentage of Time Spent: Task Force (SD)	Percentage of Time Spent: Independent Raters (SD)	Percentage of Time Spent: Combined Group (SD)
I: Pre-Study Procedures	18.75 (6.29)	16.88 (4.58)	17.50 (5.0)
II: Performing the EEG Study	55.00 (12.91)	50.63 (11.16)	52.08 (11.37)
III: Post-Study Procedures	15.00 (7.07)	20.00 (8.02)	18.33(7.78)
IV: Ethics and Professional Issues	11.25 (6.29)	12.50 (6.55)	12.08 (6.20)

DEVELOPMENT OF TEST SPECIFICATIONS

The method used to calculate the weightings for the domains is based on the task statement ratings for frequency and importance. The sum of frequency*importance products for each domain was divided by the grand sum of products for all domains to derive each domain's weight. The equation is as follows:

$$DW_j = \frac{\sum_{i=1}^{T} F_{ij} I_{ij}}{\sum_{j=1}^{D} \sum_{i=1}^{T} F_{ij} I_{ij}}$$

Where

i = a single task
j = a single domain
F_{ij} = average frequency of task i under domain j
I_{ij} = average importance of task i under domain j

A comparison of the weightings derived from the ratings from the Task Force and the ratings from the Independent Raters shows that the two groups were fairly close in their assessment of the frequency and importance of the tasks (see Table 8). The weightings based on the ratings of the combined group also are shown.

TABLE 8
WEIGHTINGS BASED ON TASK STATEMENT RATINGS

Domain	Task Force Members		Independent Raters		Combined Group	
	Sum of task frequency * task importance	Weighting (%)	Sum of task frequency * task importance	Weighting (%)	Sum of task frequency * task importance	Weighting (%)
Domain I: Pre-Study Procedures	30.0	11.5	28.6	11.1	29.0	11.3
Domain II: Performing the EEG Study	122.2	46.7	117.6	45.7	119.1	46.3
Domain III: Post-Study Procedures	45.2	17.3	50.1	19.5	48.2	18.7
Domain IV: Ethics and Professional Issues	64.0	24.5	60.8	23.7	61.8	23.9

CONCLUSIONS

R. EEG T. Examination

The current weightings for the test content specifications for the Registration Examination are:

I. Pre-Study/Patient Preparation 25%
   A. Planning and Preparation (12.4%)
   B. Fundamental Concepts (12.8%)

II. Performing the Study 65%
   A. Ensure Integrity of the Data (15.2%)
   B. Recording Strategies (18.4%)
   C. Waveform Identification (29.6%)
   D. Analysis (11.6%)

These current test specifications are oriented towards knowledge areas. The domains and associated tasks that were developed in the 2018 Practice Analysis were as follows:

Domain I: Fundamental Concepts (2 tasks)
Domain II: Performing the EEG Study (7 tasks)
Domain III: Post-Study Procedures (4 tasks)
Domain IV: Ethics and Professional Issues (3 tasks)

The domains and tasks from the 2018 Practice Analysis formed the basis for the Task Force discussions and work. The Task Force renamed Domain I as Pre-Study Procedures and retained the names of the other three domains. They also added two new tasks for a total of 18 tasks divided among the four domains.

The Task Force discussed the calculated results shown in Table 8 and agreed that the weightings for Domain II: Performing the EEG Study and Domain III: Post-Study Procedures are appropriate. They felt that the relative weightings of Domain I: Pre-Study Procedures and Domain IV: Ethics and Professional Issues were a little too far apart, given the overlaps that exist between them. For example, often ensuring patient confidentiality takes place during the extraction of relevant patient health information and communicating with the patient/caregivers. The Task Force therefore decided to adjust the weighting of Domain I: Pre-Study Procedures up to 15% and the weighting of Domain IV: Ethics and Professional Issues down to 20%.

The proposed weightings derived from the adjustments mentioned for Table 8 are shown in comparison with the current test specification weightings (see Table 9). The number of items is based on 220 operational items. The pre-test items per domain will have a proportional number based on the domain weighting.

TABLE 9
COMPARISON OF CURRENT TEST SPECIFICATIONS AND PROPOSED TEST SPECIFICATIONS FOR 2024

Domain	Current Title	Proposed Title	Current Weighting	Proposed Weighting	Number of Tasks	Current Number of Operational Items	Proposed Number of Operational Items
I	Preparation and Application of Fundamental Concepts	Pre-Study Procedures	25%	15.0%	2	55	33
II	Performing the EEG Study	Performing the EEG Study	65%	46.3%	8	165	102
III		Post-Study Procedures		18.7%	4		41
IV		Ethics and Professional Issues		20.0%	4		44

The ABRET Board considered these recommendations about the new test specifications for the R. EEG T. certification examination. Upon further discussion during recoding of the item bank, the Board determined that an additional task was necessary for Domain I (Apply fundamental EEG concepts and medical knowledge) as the other tasks did not adequately address issues related to the application of medical knowledge. They also determined that, as some tasks in Domain II overlapped, it would be more appropriate for some to be combined into a single task, resulting in a reduction of 2 for a total of 6 tasks for that domain. As the same material was covered in each domain, they determined that the weightings based on domain averages remained appropriate and retained those weightings.

After discussion and review, the ABRET Board approved the test specifications shown in Table 10 below:

TABLE 10
TEST SPECIFICATIONS FOR 2024

Domain	Title	Weighting	Number of Tasks	Number of Operational Items	Number of Pretest Items
I	Pre-Study Procedures	15.0%	3	33	4
II	Performing the EEG Study	46.3%	6	102	14
III	Post-Study Procedures	18.7%	4	41	6
IV	Ethics and Professional Issues	20.0%	4	44	6

The content outline based on these recommendations is shown below, including the knowledge areas associated with each domain.

Test Specifications and Content Outline for the R. EEG T. Certification Examination

I. Pre-Study Procedures (15%; 33 operational items; 4 pretest items)

A. Plan recording strategies according to ACNS Guidelines by extracting relevant patient health information from medical records, reviewing physician orders, and obtaining additional information from patient/caregivers to prevent adverse effects.

B. Explain the testing procedure to patient/caregivers in a manner consistent with their ability to understand in order to establish rapport and elicit cooperation.

C. EEG: Apply fundamental EEG concepts and medical knowledge

K01	ACNS Guidelines 1–7
K02	Elements of a history/communication, establishing rapport (ACNS Guideline 7)
K03	Cognitive limitations/developmental delay
K04	Common medications/treatments
K05	Medical/EEG terminology; related diagnostic procedures (neuroimaging, MRI, CT scan, SPECT, fMRI)
K06	Neuroanatomy/Neurophysiology
K07	Neurological disorders
K08	a. Neuropathology (tumors, encephalopathy, vascular, etc.)
K09	b. Seizures (classification, clinical manifestations, syndromes, etc.)
K10	c. Head trauma, traumatic brain injury, skull defects and malformations
K11	d. Psychiatric disorders
K12	Skin integrity
K13	Basic cardiac rhythms and rhythms associated with EEG changes
K14	Basic principles of electricity and electronics

II. Performing the EEG Study (46.2%; 102 operational items, 14 pretest items)

A. Prepare electrode sites and securely apply electrodes according to the International 10-20 System of Electrode Placement and ACNS guidelines, with attention to impedances and grounding.

B. Perform the EEG study according to ACNS Guidelines while ensuring the integrity of the data and equipment.

C. Perform activation and stimulation procedures as appropriate, according to ACNS Guidelines and facility protocols.

Ensure Integrity of Data

K15	Electrode properties, placement/10-20 System, special electrodes
K16	Obtaining acceptable impedances; Conditions affecting impedance values
K17	Activation techniques/contraindications to activation/reactivity
K18	Monitoring techniques (age-specific criteria, state-specific)
K19	Digital instrumentation (reformatting, sampling rate, system reference, post-acquisition review, etc.), Differential amplifier/CMRR, and Effects of instrument settings (filters, display gain, epoch) (ACNS Guideline 4)

D. Ensure a complete and comprehensive study by modifying or adjusting the recording strategy and/or instrument parameters based on the technologist's evaluation of recorded data and facility protocols and document.
E. Analyze waveforms and identify normal EEG patterns, benign variants, abnormal EEG, artifacts, sleep architecture.
F. Document patient behavior and clinical events for the interpreting physician to identify clinical correlates in the EEG.

Recording Strategies

K20	Recording strategies (montage modifications, parameter changes) (ACNS Guideline 3)
K21	Effects of medications on the recording
K22	Identifying, mitigating/monitoring artifacts
K23	Troubleshooting techniques
K24	Patient behaviors and clinical events (e.g., changes in level of consciousness, body movements, episodes) & Seizure precautions
K25	ECI recordings and ACNS Guideline 6

Waveform Identification

K26	Sleep stages and patterns; sleep disorders
K27	Waveform analysis, EEG pattern identification/description (i.e., normal/abnormal, normal variant).
K28	Waveform analysis, *pediatric & neonatal* EEG pattern identification/description (i.e., normal/abnormal, normal variant).
K29	Correlation of history with EEG patterns/clinical correlation; Electrographic correlates to clinical/non-clinical entities
K30	Electrographic changes requiring provider notification (critical values)

Analysis

K31	Localization techniques and polarity
K32	Measurement of frequency, voltage/sensitivity, and duration

III. Post-Study Procedures (18.7%; 41 operational items, 6 pretest items)
A. Remove the electrodes and clean the electrode sites.
B. Process acquired data and prepare a technical report.
C. Clean and disinfect electrodes per ASET Infection Prevention Guidelines or dispose of electrodes according to facility protocols.
D. Ensure that scheduled maintenance of equipment is performed.

K33	Infection prevention (patients, equipment, electrodes, etc.)
K34	Documentation; Technical description
K35	Media management (e.g., copy, storage, archiving) (ACNS Guideline 4)

IV. Ethics and Professional Issues (20%; 44 operational items, 6 pretest items)
A. Conduct practice in a manner consistent with the ABRET Code of Ethics.
B. Maintain patient confidentiality and comply with HIPAA/HITECH regulations.
C. Ensure patient safety and self-safety.
D. Conduct oneself in a professional manner during each encounter with a patient.

K36	HIPAA/HITECH standards
K37	Allergies and sensitivities
K38	Related SDS/OSHA standards
K39	Patient safety/Electrical safety
K40	ABRET Code of Ethics

Report of the 2023 ABRET-EEG Job Task Analysis Appendix

Appendix A: Linkages

Presented to:
ABRET

PROFESSIONAL TESTING CORPORATION

Appendix A – Linkages

Knowledge Area/Domain	Domain I: Pre-Study Procedures	Domain II: Performing the EEG Study	Domain III: Post-Study Procedures	Domain IV: Ethics and Professional Issues
01. ACNS Guidelines (Guidelines 1-7)	X	X	X	X
02. Neuroanatomy and neurophysiology		X		
03. Medical terminology	X	X	X	
04. Neurological disorders (e.g., seizures, tumors, progressive degenerative disorders, vascular disease)	X	X		
05. Psychiatric disorders	X	X		
06. Toxic/metabolic disorders and infectious diseases	X	X		
07. Head trauma and traumatic brain injury	X	X		
08. Skull defects and malformations	X	X		
09. Elements of a patient history (ACNS Guideline 7)	X			
10. Communication/techniques for establishing rapport	X	X		
11. Components of an EEG procedure (ACNS Guidelines 1 & 5)		X		
12. 10-20 electrode placement system (ACNS Guideline 2)	X	X		
13. Electrode application techniques (e.g., paste,collodion, needle electrodes)	X	X		
14. Allergies/sensitivities (e.g., latex, tape)	X	X		
15. Skin integrity		X		
16. Range of standard impedance values		X		
17. Conidition affecting impedance		X		
18. Characteristics of the differential amplifier (e.g., polarity, CMRR)		X		
19. Effects of instrument settings (e.g., filter, display gain, epoch)		X		

Knowledge Area/Domain	Domain I: Pre-Study Procedures	Domain II: Performing the EEG Study	Domain III: Post-Study Procedures	Domain IV: Ethics and Professional Issues
20. Digital instrumentation concepts (e.g., reformatting, sampling rate, systsem reference, post-acquisition review) (ACNS Guideline 4)		X		
21. Montage modifications (ACNS Guideline 3)		X		
22. Waveform analysis, such as:				
a. EEG patterns (e.g., normal EEG and benign variants, abnormal EEG, artifacts, sleep architecture, differences among patient populations and settings)		X		
b. Polarity and localization techniques		X		
c. Calculations (e.g., voltage, frequency, sensitivity)		X	X	
d. Artifact monitoring, identification, mitigation, and documentation		X		
23. Troubleshooting techniques		X		
24. Activation procedures (e.g., sleep deprivation, photic stimulation, hyperventilation)		X		
25. Medical contraindications to activation procedures	X	X		
26. Reactivity		X		
27. Electrographic correlates to clinical entities		X		
28. Patient behaviors and clinical events (e.g., changes in level of consciousness, sleep stages, body movements, episodes)		X		
29. Basic cardiac rhythms and rhythms associated with EEG changes		X		
30.Electrographic changes requiring provider notification (including critical values)		X		

Knowledge Area/Domain	Domain I: Pre-Study Procedures	Domain II: Performing the EEG Study	Domain III: Post-Study Procedures	Domain IV: Ethics and Professional Issues
31. Brain death and electrocerebral inactivity (ECI) (ACNS Guideline 6)		X		
32. Seizure precautions	X	X		
33. Effects of drugs on recordings		X		
34. Age-specific criteria		X		
35. Sedation practice	X	X		
36. Cognitive limitations/development delay	X	X		
37. Basic computer and equipment skills		X	X	X
38. Principles of electricity and electronics		X		
39. Metric system		X		
40. Media management (e.g., copy, storage, archive) (ACNS Guideline 4)		X	X	X
41. Neuroimaging and other diagnostic procedures (e.g., MRI, CT scan, PET, SPECT, fMRI)	X			
42. Infection prevention	X	X	X	
43. HIPAA/HITECH standards	X			X
44. SDS/OSHA standards	X			X
45. Electrical safety techniques	X			
46. ABRET Code of Ethics			X	X
47. National Patient Safety Goals			X	X