END-1911: END DIRECTED PRACTICE I

Cuyahoga Community College

Viewing: END-1911 : END Directed Practice I

Board of Trustees:
March 2021

Academic Term:
Fall 2021

Subject Code
END - Electroneurodiagnostic

Course Number:
1911

Title:
END Directed Practice I

Catalog Description:
Clinical electroencephalography experience in a selected neurodiagnostic lab or an affiliated health care facility under the direct supervision of an EEG technologist or physician. Emphasis on EEG concepts. Performance of EEG testing on clinical patients, medical record keeping, and clinical history taking.

Credit Hour(s):
3

Lab Hour(s):
4.5

Other Hour(s):
8

Other Hour Details:
Directed Practice: 8 hours per week for 15 weeks

Requisites

Prerequisite and Corequisite
END-1350 Introduction to Electroencephalography (EEG) and concurrent enrollment in END-1450 Intermediate Electronecephalography (EEG).

Outcomes

Course Outcome(s):
Apply basic clinical knowledge of electroencephalography principles while setting up electroencephalograms in various clinical settings, and perform and discontinue electroencephalograms under supervision.

Essential Learning Outcome Mapping:
Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

Objective(s):
1. Develop and display work setting preparedness.
2. Prep the scalp for electrode placement to achieve adequate and balanced electrode impedance levels of ≤5000 Ohms.
3. Complete the patient preparation by applying electrodes in an accurate, secure and neat fashion with collodion or electrolyte paste with the entire prep and application within 60 minutes on uncomplicated patients.
4. Consistently pass electrode verification sheets within tolerance limits (< 1.0 cm.) for patient electrode application.
5. Discuss the importance of inter-electrode impedance measurement and resistance measurements.
6. Acquire the EEG or EP (run the machine) per lab protocol.
7. Perform calibrations, activation procedures and enter comments during the acquisition, per lab protocol.
8. Understand and employ display montage, filter, sensitivity, time base changes to enhance the recording and illustrate suspected abnormalities, per lab protocol.

9. Remove electrodes and adequately clean the scalp after testing has been completed.
10. Escort patient out of the laboratory area, per protocol.
11. Review the recording noting various electrographic states (wake, drowsy, sleep) and recognizing some abnormalities, if present.
12. Review and discuss patient history with instructor.
13. Compile paperwork, transfer data as necessary per lab protocol.
14. Attend bedside (portable) and intra-operative EEG acquisition the clinical site may afford.
15. Demonstrate acceptable personal characteristics (e.g. professionalism) which do not interfere with patient's care and complement that of the health care team.
16. Develop and display best practices for infection prevention including the use of personal protective equipment (PPE), hand washing before patient encounter and after glove removal, proper disposal of single use items, correct and proper cleaning and disinfection of reusable items such as scalp electrodes, tape measures, combs, hairclips, etc. to achieve the appropriate level of disinfection, within the lab protocol.
17. Develop and demonstrate professionalism and interpersonal skills including prompt arrival and readiness, communication with clinical site and preceptor for any changes in schedule (planned or unplanned).
18. Demonstrate understanding and compliance with OSHA, JCHO, HIPAA and any other laboratory accreditation bodies.
19. Demonstrate principles of patient safety and electrical safety.
20. Participate in physician-lead learning symposium, integrate clinical activities and experiences into the total learning process.
21. Display age/condition appropriate interaction with patient and family members in greeting patient and explain the application and testing procedure: electroencephalogram (EEG) or evoked potential (EP) to the patient.
22. Address any questions or concerns posed by the patient or family members and provide additional interaction during the prep.
23. Develop rapport with patient/ family.
24. Use personal communication skills to achieve patient relaxation/ cooperation.
25. Demonstrate beginning initiative for the testing situation.
26. Explain the various activation or stimulation procedures used during recording EEG or EP.
27. Perform head measurement for placement of electrodes according to the International 10-20 electrode placement. Adjust the electrode placement for anatomical defects or anomalies.

Methods of Evaluation:

1. Clinical site final evaluations
2. Preceptor observations
3. Written homework log sheets
4. Weekly 10-20 verification forms
5. Written Physician interaction assignment to reflect EEG pattern/ recording analysis

Course Content Outline:

1. Directed Practice Orientation (2-day session on campus)
    a. Welcome to clinical rotations
        i. Student badge distribution
        ii. Clinical sites and what to expect
        iii. Student appearance/proper attire
        iv. Clinical preceptor vs. clinical instructors
        v. Communication rules
    b. Student expectations
        i. Attendance rules
        ii. Performance standards
            1. Directed Practice I
            2. Directed Practice II
            3. Directed Practice III
            4. Directed Practice IV
        iii. Homework
    c. EEG as a diagnostic tool in practice
    d. Seizures and epilepsy in practice
    e. HIPAA training/quiz
    f. END code of ethics/Scope of practice/Student limitation
    g. Grading/Evaluation methods
        i. Clinical site evaluations
        ii. Preceptor evaluations/preceptor site visits
        iii. 10-20 verification form standards
2. Clinical orientation activities

a. Departmental orientation
    i. Meet medical director
    ii. Meet technical director
    iii. Class room and meeting area
        1. Departmental reports
        2. Departmental in-services
        3. Procedural priorities
    iv. Parking facilities
    v. Equipment storage
    vi. Equipment handling
b. Hospital orientation
    i. Knowledge of management of information
        1. Admissions
        2. Medical records
    ii. Admissions
    iii. Medical records
c. Knowledge of environmental care standards
    i. Safety education/emergency procedures
    ii. Infection control policies
        1. Hospital reporting structures
        2. Usage of standard precautions (universal)
    iii. Equipment cleaning
        1. Disinfecting
        2. Sterilization
    iv. Soiled linen/clothing
        1. Technologist responsibilities
        2. Ordering of clean linens
        3. Disposal of soiled linens
        4. Environmental services responsibilities
        5. Contact with bodily fluids
        6. Infectious waste policies
    v. Use of disposable supplies
    vi. Personal protective equipment
    vii. Infectious waste policies
d. Clinical orientation
    i. Safety
        1. Student responsibility
        2. Clinic's policies
        3. Patient's safety
        4. Fire procedures
        5. Emergency procedure plans
            a. Active shooter
            b. Bomb threat
            c. Earthquake
            d. Explosion
            e. Fire
            f. Medical emergency
            g. Power outage
            h. Suspicious item
            i. Terrorism
            j. Severe Weather
        6. Equipment safety, performance testing, and maintenance
        7. Collodion and acetone usage and storage
        8. Material Safety Data Sheets (MSDS)
        9. Oxygen Precautions
    ii. Medical emergencies
        1. Definition
        2. Safety of patient
        3. Documentation

4. CPR training and certification
5. Seizure precautions and first aid
6. Psychiatric emergencies
    a. Assessment of patient
    b. Notification of security/medical personnel
    c. Suicide precautions
    d. Documentation
7. Cardiac/arrhythmia procedures
8. Respiratory arrest/arrhythmia procedures

iii. Patient charts
iv. Charting procedures
v. Review student notebook
vi. Procedures for calling in late or sick
vii. Attendance
viii. Lesson plans

3. Clinical proficiencies
    a. Electrical theory
    b. Instrumentation
    c. 10-20 set up
4. Clinical activities
    a. Performing electroencephalograms
        i. Explanation of procedure
        ii. Set up/placement of electrodes
    b. Troubleshooting
        i. Artifact
            1. Physiological
            2. Non-Physiological
        ii. Methods and concepts
            1. Artifact rejection
            2. Raw input
            3. Electrodes
            4. Equipment
            5. Cables
    c. Patient protection, safety, and environmental issues
        i. Hazardous items
            1. Collodion
            2. Acetone
            3. Needles and sharps
        ii. Patient sedation
        iii. Patient management
        iv. Infection control
            1. Bloodborne pathogens
            2. Respiratory pathogens
        v. Patient rights and confidentiality
        vi. Electrical safety
            1. Grounding
            2. Leak current
            3. Connections
        vii. Cardiopulmonary resuscitation
    d. Time organization
    e. Physician rounds
    f. Procedural priorities
    g. Patient transport
    h. Equipment processing
    i. Expand knowledge base
    j. Development of professional, interpersonal, and communication skills
5. Laboratory activities (on campus)

a. Patient set up
    i. Measuring and marking (human head)
    ii. Skin prep
    iii. Paste application
    iv. Collodion application
    v. Post-test cleanup
b. Patient testing
    i. Test explanation/ Patient communication
    ii. Impedances
    iii. Test start up
    iv. Loss of Consciousness (LOC) assessment
    v. Activations
    vi. Test ending

Resources

American Society of Electroneurodiagnostic Technologists. *EEG Recording Techniques and Instrumentation.* 2nd ed. ASET, 2000.

American Society of Electroneurodiagnostic Technologists. *EEG Montages and Polarity.* ASET, 1999.

American Society of Electroneurodiagnostic Technologists. *EEG Electrodes, Application and Infection Control.* ASET, 2001.

American Society of Electroneurodiagnostic Technologists. *EEG Activation/Artifacts.* 2nd ed. ASET, 1999.

Marcuse, Lara V., MD, Madeline C. fields, MD, and Jiyeoun Jenna Yoo, MD. *Rowan's Primer of EEG*. 2nd ed. New York: Elsevier Biomedical Press, 2016.

Ebersole, John S. (Editor), Aatif M. Husain (Editor), and Douglas R. Nordli Jr. (Editor). *Current Practices of Clinical Electroencephalography.* 4th ed. Philadelphia, PA: Wolters Kluwer Health, 2014.

Yamada, Thoru, MD and Elizabeth Meng BA R. EEG/EP T. *Practical Guide for Clinical Neurophysiolgic Testing: EEG*. 2nd ed. 2018.

Resources Other

1. *American Journal of Electroneurodiagnostic Technology (AJET)* by the ASET; 4 issues annually; which reflects most recent changes and updates in the field.
2. https://www.aset.org/i4a/pages/index.cfm?pageid=3392 (https://aset-edu.org/) 2020.
3. https://aset-edu.org/ (https://aset-edu.org/) 2020.

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