

**Job Class Profile:        Electroneurophysiology Technologist I****Pay Level:                    LX-27                    Point Band:                    682-716**

Factor	Knowledge	Interpersonal Skills	Physical Effort	Concentration	Complexity	Accountability & Decision Making	Impact	Development and Leadership	Environmental Working Conditions	Total Points
Rating	5	4	4	6	4	3	4	1	5	
Points	233	67	25	29	120	65	83	21	54	697

**JOB SUMMARY**

The Electroneurophysiology Technologist I is responsible for performing responsible specialized technical and clinical work in the operation of diagnostic equipment and in the performance and analysis of a variety of electroneurophysiological studies under the general direction of a higher-level technologist or department head.

**Key and Periodic Activities**

- Registers patients, obtains clinical information and patient history, explains procedures, prepares patients for testing and sets up procedures.
- Determines appropriate parameters to use to obtain accurate diagnostic information; performs tests/procedures or monitors or records testing activities. Some of the tests/procedures performed include Electroencephalogram (EEG), sleep deprived studies, sleep induced studies and portables, extended seizure monitoring and electrocerebral inactivity, multiple sleep latency study (MSLS), electrocerebral silence recording (ECS), and telephone transmission of electroencephalograms.
- Observes and monitors patients for any movement, sound, or seizure activity; and within accepted national minimum standards, modifies/adjusts recording parameters, protocols and machine settings, and annotates observations/significant events of waveforms. In the event of a clinical seizure, assures accurate recordings, protects patient, and arranges medical assistance if required.
- Reviews recordings, makes changes to annotations or montages as required, prepares data for physician interpretation, and writes technical reports.
- Administers sleep-inducing medications to patients as prescribed by physicians, and monitors the effect on patient's condition.
- Performs electroneurophysiological recording for patients on life support equipment, before and after neurosurgery, electrocerebral silence testing, and telephone transmitted electroencephalograph recordings.
- Cleans and sterilizes electrodes, equipment, and workspaces; and prepares recording devices.
- Checks inventory levels, stocks rooms with supplies and laundry; and orders supplies as needed.
- Performs routine equipment maintenance and calibrations; and troubleshoots equipment failures, and refers where necessary.
- Assists with the instruction and/or supervision of students.
- Participates in ongoing education programs including conferences and seminars; attends

### Key and Periodic Activities

- staff meetings.
- Assists the operating room with the setup of digital EEG equipment as required.
- Participates in the establishment of protocols, procedures and development of policies and procedures, and participates in the Quality Assurance Program.

## SKILL

### Knowledge

#### General and Specific Knowledge:

- Knowledge of:
  - Peripheral nervous system and neuromuscular diseases.
  - Seizures, neuroanatomy, and patients clinical conditions
  - Normal and abnormal waveforms techniques
  - Equipment repair
  - Organizational policies and procedures and policy development
- Current knowledge of research in best practices.

#### Formal Education and/or Certification(s):

Minimum: 2 year Diploma of Technology in Electroneurophysiology and one year of clinical training which may include didactic instruction and completion of 1,000 unassisted nerve conduction studies. Successful completion of the Canadian Board of Registered Electroencephalograph Technologists (CBRET) exam leading to certification with the Board of Registration of Electromyography Technologists of Canada (EMG/NCS), and professional designation as a Registered Electroneurophysiograph Technologist (R.E.T.).

#### Years of Experience:

- Minimum: 1 - 2 years of experience

#### Competencies:

- Client care
- Follow guidelines and processes
- Written and oral communication skills
- Presentation techniques
- Computer operation, equipment calibration, and troubleshooting

### **Interpersonal Skills**

- A range of interpersonal skills are used to listen and ask questions such as taking a concise history from patients; to provide routine information and direction regarding testing procedures to patients, some of whom may have dementia, are confused, or have psychiatric illnesses, etc.; communicate complex information to physicians and other health professionals; and provide care and comfort to patients during testing, in order to gain their cooperation as occasionally they may be upset or angry. May also assist other technologists to instruct, teach and provide advice and guidance to students during their training.
- Communications occur with employees within the department for work related activities (i.e. secretaries for scheduling appointments, chart retrieval), neurologists (i.e. to discuss patient test results), and patients (i.e. to explain procedures). As well, interactions may occur between other groups outside the department, supervisor for departmental operations, suppliers/contractors, sales representatives, internal executives, and professional associations and advisors.
- The most significant contacts are with patients during procedures; secretaries for scheduling appointments and retrieving charts; and neurologists to discuss patient test results.

## **EFFORT**

### **Physical Effort**

- Work activities occasionally result in considerable fatigue requiring periods of rest, but does not require strength and endurance.
- Occasionally lifts and moves objects less than 10 lbs. (i.e. files, supplies, etc.); uses physical balance and handling to assist patients who may be seizing or require assistance to maneuver from a wheelchair to the examining bed; to turn patients, and to push and pull portable equipment or patients on stretchers over 50 lbs. Occasionally works in awkward and cramped positions and confining spaces (i.e. ICU/emergency rooms), when performing procedures.
- Regularly stands and walks when greeting patients or setting up equipment for procedures. Constantly, when performing procedures, sits in confining work positions where there is limited ability to move about, as they operate equipment and monitor and analyze brain waves on a screen.
- Occasionally uses gross motor skills to operate heavy equipment and equipment that requires rapid physical movement and reflexes. Constantly uses fine motor skills to deliver electrical stimulus to peripheral nerves, fine finger movement requiring accurate control and steadiness to operate various equipment, machinery, and the computer mouse to view images on monitors or to write reports on the computer.

### **Concentration**

- **Visual** concentration is required for proper data acquisition in the form of graphs and moving waveforms on a computer screen sometimes in dark rooms, to stare at a computer screen for extended periods to detect any unusual activity such as seizures, changes in brain function, etc., and to observe patients for their safety.
- **Auditory** concentration is required to listen to what a patient is saying; to hear specific and unique auditory sounds associated with neurogenic and myopathic neuromuscular abnormalities, and to listen for alarms/monitors on equipment. Occasionally, these procedures are performed on portable machines outside the department where the environment is noisy requiring attentiveness in hearing concentration.
- Other **sensory demands** such as touch is required to monitor any unusual behaviours (i.e. tremors, eye blinks), and to record skin temperature for testing.
- **Higher than normal levels of attentiveness** are required during testing to detect changes in waveforms which may forecast an imminent seizure, photosensitivity, and sleep onset, and to detect electrode artifacts to prevent inaccurate results.
- Does not have **control over the pace of the workload** due to the unpredictable number of patients that require tests/procedures. Experiences **time pressures** to complete regularly scheduled appointments and to fit urgent patients in as required. **Interruptions** occur from external noise due to the environment and as a result of physicians/residents/students entering rooms when procedures are ongoing in order to speak with the technologist, the patient, to observe recordings, or train on how to perform procedures.
- Examples of **repetition** requiring alertness is performing similar procedures (i.e. EEGs, EPs, and long term monitoring), for extended periods where there is a requirement to remain vigilant and alert to detect abnormal changes, and when placing electrodes on a patient's head, as they must be placed in appropriate places.
- **Eye/hand coordination** is required when measuring and applying electrodes, placing gold foils on patients' eyes, soldering electrodes, and constant use of the computer mouse to add comments to the digital reports during procedures, change settings, and to place cursors for measuring waveforms.
- **Exact results and precision** are required when measuring a patient's head, in order to map out and apply electrodes in exact locations for recording purposes, when working in the operating room exact recording of the electrodes are imperative as the surgeon is performing brain surgery, and when tagging waveforms during procedures.

### Complexity

- This class performs a series of tasks that are different/unrelated and require the use of similar skills and knowledge.
- Some tasks are repetitive/well-defined, but related; however, at times they are different with some unrelated aspects. There are limited or no guidelines for diverse tasks and simple problems with obvious solutions that can be addressed by following procedures, or that occasionally can be resolved in a team setting.
- The most typical challenging problems are related to uncooperative/difficult/or upset patients. Patients often have dementia/delirium, are children, or have psychiatric illnesses, and who do not understand the procedures. The technologist must be creative and understanding with the patient, in order to obtain accurate results. Another occurring problem is with machines that malfunction or electrode artifacts that do not work or are loose requiring the technologist to immediately fix, in order to continue with the testing and

achieve accurate recordings.

- When addressing typical challenges, problems or issues, this class reviews department policies and procedures, equipment manuals, infection control guidelines, collective agreements, Canadian Association of Electroneurophysiology Technologists (CAET) technical standards and guidelines, and code of ethics.

## RESPONSIBILITY

### Accountability and Decision-Making

- Work tasks and activities are moderately prescribed and controlled. Work is performed independently in conjunction with neurologists and under the general direction of a higher level technologist or department head.
- Authority to order limited supplies, send machines and equipment to be fixed, make changes to patients' scheduling to accommodate urgent patients, and perform overtime in order to complete daily patient testing without formal approval. Also makes clinical decisions regarding running tests, length of recording of tests, and decisions to delay testing of patients who may be upset.
- Formal approval is required to purchase non stock items, implement changes in policies and procedures, and to work expected overtime.
- Has discretion to exercise within predetermined limits to develop schedules for outpatient appointments, and to repair equipment or contact suppliers directly when repairs are required on an urgent basis.
- Uses discretion and judgement to interpret directions and apply guidelines such as contacting a physician when there are clinical changes to a patient's condition during testing, or to give verbal reports to attending physician/resident when the neurologist is not available. Discretion and judgment is also used during testing when making decisions to extend recordings which are outside the CAET guidelines.
- Exercises a high degree of independent discretion and judgement when giving verbal reports to health professionals in the absence of a neurologist, and applying interventions when patients have seizures.

### Impact

- Work activities have an impact within the immediate work area, the department, organization, and on patients.
- The work can have a positive or negative impact on patient satisfaction and results, shorter wait times, and hospital stay.
- The work activities impact the following resources: equipment (i.e. biomedical personnel), processes and systems (i.e. repeated tests and work schedules), information (i.e. test and results), finances (i.e. overtime and extra tests), facilities, material resources (i.e. supplies and linens), Human Resources (i.e. housekeeping), health and safety, and corporate image.
- Examples of errors that could occur are artifacts or errors in recording of tests, incorrect set-up of electrodes which can result in incorrect interpretations of tests, and machines not calibrated properly.
- The most significant impact of errors or mistakes are with the results of patients tests; subsequently impacting a patient's diagnosis and/or treatment. Errors are mitigated as results of tests are reviewed and signed off by a neurologist prior to being released to the

attending physician. Errors are typically detected by the technologist, another technologist, and/or the neurologist, normally within hours of occurrence.

#### **Development and Leadership of Others**

- There is no supervision to staff.
- Provides on the job advice/guidance, job direction, feedback, orientation, and job training to new employees. May assist other technologists with the training of students.

### **WORKING CONDITIONS**

#### **Environmental Working Conditions**

- Requirement to practice safety precautions such as adhering to safety guidelines when working around electrical equipment and to wear safety shoes to protect from heavy portable machines. Also practices universal safety precautions by wearing gloves regularly, and for patients in isolation or who are infectious, wears protective equipment such as gowns and masks.
- There is a limited likelihood of minor cuts, bruises, abrasions, minor illnesses, fractures, injuries or illnesses resulting in partial or total disability. There is a moderate likelihood of developing eye strain.
- When performing tests/procedures, is constantly exposed to electrical shocks from the use of equipment and glare from monitors. There is regular exposure to limited lighting (i.e. some exams are performed in dark rooms), bodily fluids, infectious diseases, awkward or confining workspaces, isolation when doing sleep studies; and occasionally is exposed to a variety of conditions such as unusual/distracting noise, fumes, hazardous chemicals, toxic or poisonous substances (i.e. acetone), odours, physical dangers or threats from aggressive patients, and sharp objects.