



Australian Government

Department of Education, Employment and Workplace Relations

HLTNE602C Perform evoked potentials recording

Release: 1

HLTNE602C Perform evoked potentials recording

Modification History

Not Applicable

Unit Descriptor

Descriptor

This unit of competency describes the skills and knowledge required to prepare a client to perform evoked potentials (EP) testing and to provide a technical report for diagnostic purposes

Application of the Unit

Application

Work will be performed within a prescribed range of functions involving routine and non-routine methods and procedures which require the exercise of some discretion and judgement

EPs are commonly conducted in hospitals and neurologists' rooms

Tests are undertaken by request from neurologists who are responsible for how the test is performed and how the results are used

All activities are carried out in accordance with organisation policies, procedures and infection control guidelines

Learner is required to demonstrate their ability to perform basic cardiopulmonary resuscitation

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Pre-requisite unit

This unit must be assessed after successful achievement of pre-requisite:

- HLTNE401C Perform electroencephalography (EEG)

Employability Skills Information

Employability Skills

This unit contains Employability Skills

Elements and Performance Criteria Pre-Content

Elements define the essential outcomes of a unit of competency.

The Performance Criteria specify the level of performance required to demonstrate achievement of the Element. Terms in italics are elaborated in the Range Statement.

Elements and Performance Criteria

ELEMENT

PERFORMANCE CRITERIA

1. Prepare *equipment, material and environment*

- 1.1 Review client booking list is reviewed for client details
- 1.2 Identify special needs of client
- 1.3 Select equipment, materials and location for test
- 1.4 Ensure equipment and materials selected are clean, dry, in working order, and, where applicable, calibrated
- 1.5 Review relevant, current literature, protocols and normal controls
- 1.6 Arrange client bookings according to organisation procedures, clients' needs, reason for study and specific tests

ELEMENT**PERFORMANCE CRITERIA**

- | | |
|---------------------------------|--|
| 2. Prepare client for procedure | 2.1 Ensure information on access to test location and test to be attended is received by client
2.2 Receive and process request for test
2.3 Correctly identify client ,reassure and inform client regarding the procedure
2.4 Give client/carer the opportunity to ask questions and discuss areas of concern
2.5 Check client consent has been obtained
2.6 Review client's medical history, seek clarification specific details and take action, as required |
| 3. Attach monitoring equipment | 3.1 Utilise <i>personal protective equipment</i> in accordance with standard and additional precautions
3.2 Select type and number of electrodes according to client needs and test requirements
3.3 Identify sites for electrode placement according to test requirements, current standards and organisation policies and procedures
3.4 Complete skin preparation according to infection control guidelines and client needs
3.5 Attach other monitoring equipment as required
3.6 Correctly connect required leads between interface/head box and machine
3.7 Perform pre test electrode impedance and establish integrity of electrode and application
3.8 Adjust equipment and electrodes as required
3.9 Enter client details and type of test on testing equipment |

ELEMENT**PERFORMANCE CRITERIA****4. Conduct EP recording**

- 4.1 Perform additional validation techniques
- 4.2 Select derivations and machine parameters according to client details, cooperation and concurrent results, and annotate and record
- 4.3 Validate electrical impedance throughout the test as required
- 4.4 Select stimulus type and strength according to test requirements and client tolerance level
- 4.5 Recognise artefacts, annotate, and eliminate or reduce
- 4.6 Monitor client's response to stimulus and adapt procedure accordingly
- 4.7 Recognise primary complex as appropriate, according to departmental normal controls, and reproducible
- 4.8 Identify appropriate signal to noise ratio is
- 4.9 Annotate for neurologist reporting response to stimulus and *changes* throughout the procedure
- 4.10 Identify and meet client needs during the EP recording
- 4.11 Identify and respond to severe reactions and complications in accordance with organisation emergency procedures

ELEMENT**PERFORMANCE CRITERIA****5. Completion of procedure**

- 5.1 Perform post test electrode impedance and verify *integrity of electrode* contact
- 5.2 Validate existence of computerised file or printouts
- 5.3 Remove leads and electrodes from client and wash paste/gel off
- 5.4 Provide client with assistance as required, on completion of the procedure
- 5.5 Confirm timely follow up with referring doctor
- 5.6 Record test and relevant information for retrieval and statistical purposes according to department procedures
- 5.7 Provide information to client and carer according to duty of care, and organisation policies
- 5.8 Clean, dry and store equipment in accordance with manufacturer's guidelines and infection control guidelines
- 5.9 Dispose of disposable EP electrodes and other materials in accordance with waste management procedures and infection control guidelines

6. Generate report

- 6.1 Review *client details* and amend as required
- 6.2 Review test data, calculate amplitudes and latencies according to test requirements
- 6.3 Review annotations and amend to provide accurate and concise information
- 6.4 Prepare technical report with accompanying documentation and forward to neurologist for review as required

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level required for this unit.

Essential knowledge:

The candidate must be able to demonstrate essential knowledge required to effectively do the task outlined in elements and performance criteria of this unit, manage the task and manage contingencies in the context of the identified work role

This includes knowledge of:

- Anatomy and physiology relevant for EP interpretation, including neurological disorders
- Appropriate recognition of normal waveforms
- Basic pharmacology related to neurological function
- Complications and contraindications for clients undergoing EP procedure, i.e. sedation, pupil dilation
- Confidentiality requirements of client information
- Derivations, montage design and type, and machine settings, including understanding of when and how to change them
- Electrical safety requirements
- Emergency procedures in the event of complications relevant in the performance of an EP
- Infection control policies, including standard and additional precautions, in relation to neurophysiology testing procedures
- International 10/20 system as standard for electrode placement, and modified systems
- Protocols for EP procedure
- Purpose of EP tests e.g.: diagnostic, prognostic, classification of events
- Routine maintenance policy and procedures for equipment
- Understanding of need to reference departmental normal controls and values
- Validation of abnormal findings

Essential skills:

It is critical that the candidate demonstrate the ability to:

- Apply knowledge of boundaries of responsibilities and refer problems to supervisor, neurophysiologist or other appropriate health professional
- Communicate effectively with clients/carers in relation to the procedure and manage

REQUIRED SKILLS AND KNOWLEDGE

clients'/carers' anxiety level

- Comply with policies and procedures including those of OHS and infection control
- Identify steps that must be taken to ensure equipment is safe for use
- Safely produce a diagnostic EP result

continued ...

Essential skills (contd:)

In addition, the candidate must be able to effectively do the task outlined in elements and performance criteria of this unit, manage the task and manage contingencies in the context of the identified work role

This includes the ability to:

- Attach electrodes and leads correctly
- Correctly operate EP and associated monitoring equipment
- Correctly prepare skin
- Deal with conflict
- Demonstrate computer skills relevant to workers' role
- Identify a EP result that is unsatisfactory for diagnostic purposes
- Manage the known common interferences in the production of a EP recording
- Measure for the placement of electrodes to achieve an EP recording of diagnostic quality
- Produce a EP recording satisfactory for diagnostic purposes, including ability to design montages and select machine parameters appropriately
- Solve problems including an ability to use available resources
- Take into account opportunities to address waste minimisation, environmental responsibility and sustainable practice issues
- Undertake basic cardiopulmonary resuscitation
- Use numeracy skills including the ability to complete basic arithmetic calculations, recording stock levels, statistical information and skills related to technical equipment
- Use oral communication skills required to fulfil job roles in a safe manner and as specified by the organisation, including skills in:
 - asking questions
 - providing clear information
 - listening to and understanding workplace instructions
 - clarifying workplace instructions when necessary
 - using effective verbal and non verbal communication skills with a range of internal and external persons
 - literacy in English or a community language, depending on client group and organisation requirements
- Use reading and writing skills required to fulfil job roles in a safe manner and as specified by the organisation at a level of skill that involves reading and documenting clinical information and understanding complex policy and procedure manuals
- Work with others and display empathy with client and relatives

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate this competency unit:

- The individual being assessed must provide evidence of specified essential knowledge as well as skills
- Where, for reasons of safety, space, or access to equipment and resources, assessment takes place away from the workplace, the assessment environment should represent workplace conditions as closely as possible
- Consistency of performance should be demonstrated over the required range of situations relevant to the workplace

Context of and specific resources for assessment:

- Relevant organisation policy, guidelines, procedures and protocols

EVIDENCE GUIDE

Method of assessment:

- Clinical skills involving direct client care are to be assessed initially in a simulated clinical setting (laboratory). If successful, a second assessment is to be conducted during workplace application under direct supervision
- Observation of work activities when performing evoked potentials (EP) recording
- Observation of simulation and/or role play when performing evoked potentials (EP) recording
- Discussion of physical and/or behavioural contingency scenarios involving duty of care
- Authenticated transcripts of relevant education/training courses
- Recognition of relevant life/work experience
- Questioning, written assessments/projects, e-learning can be used to assess knowledge
- Authenticated reports of experience in performing evoked potentials (EP) recording (Documentation associated with performance reviews, supervisor/co-ordinator evaluations of work performance)
- Training records associated with First Aid, OH Safety training, Orientation/Induction Training, Safe Manual Handling, Universal infection control procedures
- Case study and scenario as a basis for discussion of issues and strategies to contribute to best practice

Access and equity considerations:

- All workers in the health industry should be aware of access and equity issues in relation to their own area of work
- All workers should develop their ability to work in a culturally diverse environment
- In recognition of particular health issues facing Aboriginal and Torres Strait Islander communities, workers should be aware of cultural, historical and current issues impacting on health of Aboriginal and Torres Strait Islander people
- Assessors and trainers must take into account relevant access and equity issues, in particular relating to factors impacting on health of Aboriginal and/or Torres Strait Islander clients and communities

Range Statement

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Equipment and materials may include:

- EP machine; portable, standard,
- Electrodes eg caps, disc, mushroom; leads and accessories
- Needle electrodes
- Tape measure
- Chair
- Bed
- Photic stimulator
- Pattern generator and monitor
- Other light stimulus
- Click and white noise stimulator and earphones
- Electrical nerve stimulator
- Other stimulus
- Resuscitation equipment
- Gels
- Electrode pastes

Environment may include:

- Neurophysiology department
- Wards
- Operating theatre
- Intensive care unit
- Private neurologists' rooms

RANGE STATEMENT

Client details may include:

- Referral letter/request
- Reason for study
- Medical history
- Address and phone number
- Date of birth and age
- Date of test
- Date of previous test
- Medications
- Client's presenting condition
- In care client/out of care client
- Clients' expectations
- Test requested
- Referring doctor, address and phone number

Clients must include:

- Neonates
- Infants
- Children
- Adolescents
- Adults
- Elderly

Client medical history may include:

- Event/s leading to referral
- Cardiac disorder
- Respiratory disorder
- Vascular disorder
- Neurological disorder
- Infectious diseases
- Epilepsy type and frequency, and date of last seizure
- Psychiatric and behavioural disorders
- Developmental disorder
- Metabolic disorder
- Medications

Action in response to client's medical history may include:

- Additional testing

RANGE STATEMENT

Personal protective equipment may include:

- Gloves
- Mask
- Goggles
- Gown

Integrity of electrodes must include:

- Ground
- Reference
- Active electrodes
- Stimulus electrodes

Additional validation techniques must include:

- Touch test (of electrodes)
- Exchange electrodes
- Replace electrodes
- Low, and of similar value, impedances

Complications and severe reactions may include:

- Seizure
- Cardio-respiratory arrest

Causes of changes throughout procedure may include:

- EP findings
- Equipment
- Environmental
- Client's comfort, physiological and psychological state
- Seizures
- Signal to noise ratio

Information provided to client's and carer's may include:

- Appropriate follow up period with referring doctor to obtain results
- Risks following procedure i.e. sedation, pupil dilation and refraining from driving and other activities as appropriate

Unit Sector(s)

Not Applicable