Clinical Practice Procedures: 
Assessment/Neurological assessment

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Purpose: To ensure a consistent procedural approach to undertaking a patient Neurological status assessment.

Scope: Applies to all QAS clinical staff.

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The **neurological status assessment** forms part of the overall patient Assessment process.

Patients with an impaired level of consciousness or obvious neurological dysfunction require a thorough assessment as is practicable in the circumstances.

### Indications

- To assess the patient’s neurological status

### Contraindications

- Nil in this setting

### Complications

- The pre-existing neurological status of a patient must be taken into account during assessment.
- The application of a painful stimulus by a paramedic during the assessment of an intoxicated patient has the propensity to elicit a violent response and should be minimised.
Procedure – Neurological assessment

There are five critical areas to a neurological assessment:[1]

1. **Level of consciousness** [2,3]
   a) The AVPU scale represents a tool easily applied during the initial patient assessment. In the AVPU assessment, three questions are asked:
   
<table>
<thead>
<tr>
<th>AVPU ASSESSMENT</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alert</strong></td>
<td>Is the patient alert?</td>
</tr>
<tr>
<td><strong>Verbal</strong></td>
<td>Does the patient respond to a verbal command?</td>
</tr>
<tr>
<td><strong>Pain</strong></td>
<td>Does the patient respond to a painful stimulus?</td>
</tr>
<tr>
<td><strong>Unconscious</strong></td>
<td>With no response to any of the above, the patient is considered unconscious.</td>
</tr>
</tbody>
</table>
   
   b) A formal assessment of the GCS is subsequently performed as soon as possible and repeated throughout patient management as is necessary to detect deterioration. The need for repeated painful stimuli is rare and should not be practiced.

2. **Pupils**
   a) Pupil size must be determined as:
      - pinpoint (< 2 mm)
      - normal (2 – 6 mm)
      - dilated (> 6 mm)

   b) Assess the pupillary reaction to light using a small bright light. Direct light reflex is assessed by covering one eye and shining the light directly into the open eye which should result in a rapid constriction.

   c) Assessment is repeated on the other eye. Both reactions should be equal.

   d) Document any unusual eye movement such as deviation from midline, dilated, or non reactive pupils on one side, indicating possible raised intracranial pressure (ICP), nerve compression or traumatic mydriasis.[1]

3. **Motor function**
   a) Muscle coordination, strength and tone, including any obvious facial weakness.

   b) Abnormal movements such as seizures, tremors or decorticate/decerebrate posturing. The latter is an ominous sign and may occur spontaneously, or to painful stimuli.

4. **Sensory function**
   a) Hearing and ability to understand verbal communication.

   b) Superficial sensation (light touch or pain).

5. **Vital signs**
   a) Assess respirations for rate, rhythm and effort.

   b) Assess blood pressure and pulse to ensure adequate perfusion status. Note that a widening pulse pressure and slowing pulse rate may indicate a rising ICP.

   c) Assess body temperature and maintain normothermia.[2]