Alberta Health Services

PROTOCOL

TITLE
ACUTE NEUROLOGICAL DEFICITS - ADULT

SCOPE
Provincial: Emergency Departments and Urgent Care Centres

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NOTE: The first appearance of terms in bold in the body of this document (except titles) are defined terms – please refer to the Definitions section.

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OBJECTIVES

- To assist **health care professionals** when implementing specific diagnostics, therapeutics and interventions for **adult patients** who present with acute neurological deficits to an Emergency Department (ED) or an Urgent Care Centre (UCC), prior to the initial Physician or Nurse Practitioner (NP) assessment.

APPLICABILITY

Compliance with this document is required by all Alberta Health Services employees, members of the medical and midwifery staffs, students, volunteers, and other persons acting on behalf of Alberta Health Services (including contracted service providers as necessary).

ELEMENTS

1. Points of Emphasis

1.1 The health care professional shall immediately notify the Physician or NP of any patient who is hemodynamically unstable or presents with acute neurological deficits (refer to Section 4.2 below).

1.2 This Protocol may be implemented when:

a) there may be a delay in Physician or NP initial assessment, and

b) the patient is in an appropriate location to manage ongoing assessment and reassessment.

1.3 Health care professionals should assume a patient with acute neurological deficits is experiencing a stroke until proven otherwise.

1.4 For Stroke Centres:

a) Where available, notify the Stroke Team, as per site process.

1.5 For Non-Stroke Centres:

a) If the patient arrives via Emergency Medical Services (EMS), health care professionals may request EMS to remain on site (where possible) until a transfer disposition decision is made.

b) Initiate Physician or Nurse Practitioner contact with Referral, Access, Advice, Placement, Information & Destination (RAAPID) early and prepare for transfer. Essential information to communicate includes:

(i) time of symptom onset or last seen normal; progression of signs and symptoms;

(ii) patient age, brief history (including preexisting deficits), and current medications;

(iii) blood glucose; and

(iv) Los Angeles Motor Scale (LAMS) Score. (Refer to Appendix A).

1.6 When this Protocol has been implemented for a patient who subsequently leaves prior to Physician or NP assessment: Follow local process, including documentation requirements and patient follow-up of abnormal results.

2. Inclusion Criteria

2.1 Adult patients presenting with acute neurological deficits.

3. Exclusion Criteria

3.1 Pediatric patients.

4. Assessment and Treatment

4.1 When the patient has been assigned an appropriate treatment space, the healthcare professional shall perform a complete patient assessment, including a full set of vital signs including blood pressure, temperature, heart rate, respiratory rate, oxygen saturation (SpO_2), Glasgow Coma Scale (GCS), pupils, motor power and sensation, and LAMS Score. (Refer to the AHS *Assessment and Reassessment of Patients Guideline* [ESCN] and Appendix A: *Los Angeles Motor Scale [LAMS] Score*).

a) Where applicable, assess provocation, quality, radiation, severity, and time (PQRST) assessment of pain and/or associated symptoms.

4.2 Immediately notify the Physician or NP of a patient with any of the following acute neurological deficits, which include but are not limited to:

a) facial droop;

b) arm drift;

c) weak or no grip strength;

d) sudden unilateral weakness;

e) sudden trouble speaking;

f) sudden vision loss in one (1) eye or one-half (1/2) of vision; and/or

g) dizziness and/or headaches with the above symptoms.

4.3 Where possible, obtain a detailed history of the patient's presenting symptoms from the patient or **alternate decision-maker** (ADM), family member, or EMS, including the current and baseline neurological status of patient and time of symptom onset, noting time the patient was last seen normal, and/or time symptoms recognized, and anticoagulation usage.

a) Do not delay treatment to obtain a detailed patient history.

b) Confirm existing **Goals of Care designation**.

4.4 If the patient has an altered GCS, obtain a **Point of Care Test (POCT)** blood glucose measurement.

a) If blood glucose is less than 4.0 millimoles per litre (mmol/L), notify the Physician or NP. (Refer to AHS *Treatment of Hypoglycemia – Adult* Procedure).

4.5 If the patient is pregnant: Obtain a fetal heart rate (timed for a full 60 seconds) and fetal heart monitoring, if appropriate.

4.6 Reassessment of neurological vital signs (NVS) should occur at a minimum of every 30 minutes (or more often), as indicated by the patient's response and clinical condition.

4.7 Notify the Physician or NP of abnormal assessment findings.

a) Do not delay patient transfer to perform the interventions in this Protocol.

4.8 Routine administration of oxygen may be harmful. Only provide oxygen to keep SpO_2 greater than or equal to 90 percent (%) or with clinical signs of hypoxemia.

a) If the patient states, or the health care professional suspects, that the patient has chronic hypercapnia (a CO_2 retainer), a SpO_2 of 88% may be reasonable and oxygen therapy may not be required. A Physician or NP order for oxygen is required in this population.

4.9 Apply cardiac monitor leads where clinically indicated; monitor patient in lead II and, if available, V1. Interpret the rhythm strip and place on the patient's **health record**.

4.10 The health care professional shall assess the need for an intravenous (IV).

a) If required, start an IV. The IV may be a saline lock or infuse 0.9% sodium chloride (normal saline) at 30 millilitres per hour (mL/hr.).

5. Laboratory Tests

5.1 The following tests shall be drawn and sent to the laboratory:

a) complete blood count (CBC);

b) electrolytes (sodium, potassium, chloride, carbon dioxide);

c) glucose;

d) creatinine, and

e) prothrombin time / international normalized ratio (PT, INR) for patients who are on warfarin therapy, have liver disease, or have a bleeding disorder.

5.2 Local process may determine the availability of laboratory tests that are included as part of this Protocol.

6. Documentation

6.1 The health care professional shall document on the patient's health record:

a) implementation of this Protocol;

b) history of symptom onset, including information source (e.g., EMS, family member);

c) assessments, including improving or worsening signs and symptoms;

d) reassessments;

e) interventions; and

f) patient's responses to interventions.

DEFINITIONS

Adult means a person aged 18 years and older.

Alternate decision-maker means a person who is authorized to make decisions with or on behalf of the patient. These may include, specific decision-maker, a minor's legal representative, a guardian, a 'nearest relative' in accordance with the *Mental Health Act* (Alberta), or an agent in accordance with a Personal Directive, or a person designated in accordance with the *Human Tissue and Organ Donation Act* (Alberta). This also includes what was previously known as the substitute decision-maker.

Goals of Care Designation means one of a set of short-hand instructions by which health care providers describe and communicate general care intentions, specific clinically indicated health interventions, transfer decisions, and locations of care for a patient as established after consultation between the most responsible health practitioner and patient or alternate decision-maker.

Health care professional means an individual who is a member of a regulated health discipline, as defined by the *Health Professions Act*, and who practices within scope or role.

Health record means the collection of all records documenting individually identifying health information in relation to a single person.

Order means a direction given by a regulated health care professional to carry out specific activity (-ies) as part of the diagnostic and/or therapeutic care and treatment to the benefit of a patient. An order may be written (including handwritten and or electronic), verbal, by telephone or facsimile.

Patient means an adult or child who receives or has requested health care or services from Alberta Health Services and its health care providers or individuals authorized to act on behalf of Alberta Health Services. This term is inclusive of residents, clients and outpatients.

Point of Care Testing (POCT) means any testing that typically occurs outside a designated laboratory environment, and is completed nearer to, or at the site of the patient/client. This includes all testing performed by non-laboratory personnel regardless of the location of the examination.

REFERENCES

- Appendix A: *Los Angeles Motor Scale (LAMS) Score*
- Alberta Health Services Governance Documents:
  - *Treatment of Pain and/or Fever with Acetaminophen or Ibuprofen* Protocol #(HCS-251-01)
  - *Assessment and Reassessment of Patients* Guideline (# HCS-181-01)
  - *Consent to Treatment/Procedure(s)* Policy (#PRR-01)
  - *Treatment of Hypoglycemia – Adult* Procedure (# HCS-206-01)
- Non-Alberta Health Services Resources:
  - Los Angeles Motor Scale (LAMS) Score

APPENDIX A

Los Angeles Motor Scale (LAMS) Score