

M12: Neonatal Neurological

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Reviewed:

Introduction

Neonatal neurological emergencies encompass a large variety of conditions varying from cerebral vascular accident, developmental conditions, space-occupying lesions to infectious encephalopathies. The majority of these conditions require advanced imaging to diagnose, and will need long-term therapy.

Paramedic management of the neonatal neurological emergency involves determining the time of onset of condition, and management of symptoms created by the condition, including seizures, hypotonia, apnea or variations in respiratory pattern, and absent or delayed primitive reflexes.

Essentials

- Neurological emergencies in the neonate generally present through altered mental status. This may be the result of
 - Seizures
 - Hypoglycemia
 - Infection
 - Trauma
- Neonates may present with respiratory compromise from repeated seizures, or central apnea.
- The primary treatment is management of symptoms and supportive care in accordance with the appropriate clinical practice guideline. In particular, seizures should be treated if paramedics feel confident in their diagnosis, remembering that seizures can be subtle in neonates (lip smacking, blinking, and bicycle movement of the legs are common signs).

Additional Treatment Information

- The majority of neonates who experience respiratory compromise secondary to a neurological condition are treated as though they have an infectious encephalopathy, until blood and cerebrospinal fluid cultures have been completed.
- Patients should be transported to a hospital with appropriate pediatric resources, if there are multiple hospitals to choose from.
- Patients experiencing multiple apneic events may require placement of an advanced airway in order to oxygenation and ventilate effectively.

Interventions

First Responder

- Prevent heat loss
- Provide supplemental oxygen as required
 - → [A07: Oxygen and Drug Administration](#)
- Provide on-going care as per neonatal resuscitation guidelines
 - → [M09: Neonatal Resuscitation](#)

Emergency Medical Responder – All FR interventions, plus:

- Transport urgently to closest facility

Primary Care Paramedic – All FR and EMR interventions, plus:

- Consider use of supraglottic airway if unable to oxygenate or ventilate with bag-valve mask alone

- [→ PR08: Supraglottic Airway](#)
- Consider need for vascular access based on clinical scenario
 - [→ D03: Vascular Access](#)
 - REQUIRES SPECIFIC TRAINING AND CLINICAL CONSULTATION (1-833-829-4099)
- Correct documented hypoglycemia:
 - [→ E01: Hypoglycemia and Hyperglycemia](#)

Advanced Care Paramedic – All FR, EMR, and PCP interventions, plus:

- Advanced airway intervention if unable to oxygenate or ventilate
- [MIDAZOLAM](#) for seizure control
- Consider intraosseous access
 - [→ PR12: Intraosseous Cannulation](#)

