Assessment of the Child with Neurologic Alterations

Cerebral Dysfunction in children is defined as any disorder that affects cerebral structure and function.

Assessment:

History of disorder:

- Family history obtained for history of genetic disorders with neurological components
- Health history of infant/child
  - Injuries
  - Febrile illness
  - Animal or insect bite
  - Poison ingestion
  - Chemical inhalation
  - Diabetes mellitus
  - Sickle cell disease
- Changes in movement such as ataxia or seizures; changes noted in behaviors
- Headache, nausea, vomiting, double vision, bowel, or bladder incontinence
- Bladder incontinence in child previously continent

Physical assessment: Specific to Neurological System

- Neurological assessment
- Developmental assessment
- Cranial nerve function

Physical Evaluation: Specific to Neurological System

- Size and shape of head including head circumference measurement
- Movement and reflexes
- Sensory assessment
- Symmetry in movement of extremities
- Twitching movements
- Respiratory Status
  - Apnea
  - Seesaw chest movement
  - Hyperventilation
- Skin and hair texture
- Presence of high-pitched piercing cry
- Inability to suck or swallow
- Muscular activity and coordination
- Developmental level/milestones
- Gait abnormalities
Assessment – Level of Consciousness Definitions

- **Full consciousness**: Awake and alert, oriented to time, place, and person with appropriate behavior for age
- **Confusion**: Unable to make decisions
- **Disorientation**: confusion regarding time, place, decreased level of consciousness
- **Lethargy**: Limited spontaneous motion, sluggish speech, drowsy, falls asleep easily
- **Obtundation**: Sleeping deeply but arouses with stimulation.
- **Stupor**: Remains in deep sleep with response only to deep and repeated painful stimulation. Responses slow – may moan only in response to pain.
- **Coma** – no motor or verbal response to painful stimuli. May have decerebrate posturing
- **Persistent Vegetative State**: Cerebral cortex function permanently lost. Eyes follow objects only by reflex. All four limbs are spastic. Child may groan or cry but has no verbalization.

**General signs of Increased Intracranial Pressure**

- Change in level of consciousness
- Elevated temperature
- Increased systolic blood pressure
- Widening pulse pressure
- Tachycardia initially than becoming bradycardic
- Change in respiratory pattern
- Decorticate posturing: Flexion of upper extremities, extension of the lower extremities, possible plantar flexion
- Decerebrate posturing: Extension of upper extremities with internal rotation of upper arm & wrist – pronation. Lower extremities extend with some internal rotation noted at knees & feet.

**Age specific symptoms of Increased Intracranial Pressure**

**Infant**

- Tense bulging fontanel
- Separated cranial sutures
- Irritability
- High pitched cry
- Increased head circumference
- Distended neck veins
- Feeding changes
- Eyes with setting-sun sign

**Child**

- Headache
- Nausea
• Forceful vomiting without nausea
• Blurred vision, diplopia
• Seizures

**Personality changes - Early**

• Irritable
• Restless
• Drowsiness
• Diminished physical or motor activity
• Increased sleeping
• Memory loss
• Inability to follow simple commands
• Lethargy to drowsiness

**Personality Changes - Late**

• Inability to respond to commands
• Decreased response to painful stimuli
• Alterations in pupil size and reactivity
• Posturing
• Cheyne-Stokes respirations
• Decreased Level of Consciousness
• Coma

**Diagnostics**

• Lumber Puncture
• EEG
• MRI
• CT
• Nuclear brain scan
• Blood gasses

**Nursing Care of Increased Intracranial Pressure**

• Elevate head of bed
• Monitor vital signs and neurologic signs
• Avoid activities that will further increase intracranial pressure
• Cluster nursing activities for minimum disturbance
• Provide quiet environment
• Administer sedation as ordered
• Closely observe for signs of pain – especially changes in behavior or activity
• Maintain patent airway
- Maintain IV fluids if prescribed
- Monitor intake and output, electrolyte imbalance and specific gravity
- Medications as ordered
  - Corticosteroids
  - Antiepileptics
  - Antipyretics
  - Turn frequently

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<th>Nursing Diagnosis</th>
<th>Expected patient outcomes</th>
<th>Nursing Interventions</th>
<th>Rationale</th>
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<tr>
<td>Interrupted family processes related to having a child with cognitive impairment</td>
<td>Family will receive adequate information and support. Family will be prepared for long term care of child. Family will be able to integrate the child in the family system</td>
<td>1. Inform family as soon as possible after birth 2. Give the family written information about the condition 3. Allow time for grieving and give support as needed 4. Assist in identifying appropriate resources as needed on an ongoing basis 5. Refrain from definitive answers about degree of retardation. 6. Demonstrate acceptance of child 7. Assist family in identification of realistic short term and long term goals 8. Encourage family</td>
<td>1. To prevent fears and concerns and provide immediate support 2. To inform parent of disorder 3. Families will cycle through the grief process especially when developmental milestones are not met 4. Programs can help child in reaching maximum potential and provide additional family support. The needs of the child are continuous 5. To encourage hope 6. Demonstrate a caring attitude</td>
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Objective and Subjective Data

Prenatal, perinatal, or postnatal trauma or physical injury

Prenatal maternal infection, alcoholism or drug abuse

Genetic disorders with mental retardation

Lack of disease understanding

Inability to understand plan of care

Lack of family support
members to express their feelings and concerns.

9. Discuss with parents alternatives to home care especially as child grows older or as parents are unable to care for the child

7. Stress and limited knowledge may limit family ability to set realistic goals.

8. To promote adaptation process

9. To facilitate family’s ability to cope with long term care of the child

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<th>Delayed growth and development related to impaired cognitive functioning</th>
<th>Child will achieve optimum growth and development potential.</th>
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<td>Objective and Subjective Data</td>
<td>Child will achieve optimum socialization</td>
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<td>Coping Mechanisms of Family</td>
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<td>Family without a knowledge of development</td>
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<td>Deprived environment</td>
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<td>Child with poor eye contact during feedings</td>
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<td>Child is nonresponsive to touch and the</td>
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<td>Child manifests decreased interaction with environment</td>
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<tr>
<td>1. Involve child and family in an early infant stimulation program</td>
<td>1. To maximize child’s development</td>
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<td>2. Assess child’s developmental progress at regular intervals</td>
<td>2. To revise the plan of care as needed</td>
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<td>3. Help family determine child’s readiness to learn specific tasks</td>
<td>3. Help the family screen for readiness as it may not be easily recognizable</td>
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<td>4. Employ positive reinforcement for specific tasks</td>
<td>4. To improve motivation and learning</td>
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<td>5. Encourage learning of self-care as soon as child is ready</td>
<td>5. Encourage independence in the child</td>
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<td>6. Encourage family to teach child socially appropriate behaviors</td>
<td>6. Encourage socialization in the child</td>
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<td>7. Recommend</td>
<td>7. To encourage socialization</td>
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<td>8. Encourage grooming and age-appropriate dress</td>
<td>9. Emphasize that child has the same needs as other children</td>
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<td>8. To encourage acceptance by others and support self-esteem</td>
<td>9. To optimize development</td>
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