This chapter focuses on clinical indicators of patient conditions, but is in no way exhaustive of all possible conditions requiring greater specificity. Understanding clinical conditions and indicators aids identification of the severity of illness (SOI) of a patient, and affords the clinical documentation improvement (CDI) specialist an opportunity to serve as a resource to physicians.

Review of Medicare Severity diagnosis-related groups (MS-DRG) in a major diagnostic category (MDC) in this chapter will be limited to those that have multiple ICD-9 codes grouping to them, items which typically cause confusion or controversy. Discussion of procedures will be limited to those that frequently influence CDI specialists’ work or are bundled into the medical MS-DRG.

**MDC 1: Diseases and Disorders of the Nervous System**

Several neurological conditions may require greater specificity or indication of SOI. Since many neurological conditions share the same signs and symptoms, it may be necessary to clarify the particular condition that initiated the given symptom.

A patient with a nervous system neoplasm may experience a severe headache, lack of coordination, visual changes, sensory changes, difficulty with speech, seizures, loss of consciousness, or personality changes. A patient suffering from a cerebral infarct may also be admitted with the same signs and symptoms. Further assessment of these conditions is accomplished through use of the same neurological studies, such as a CT or MRI scan of the brain. A neurosurgery consult is also often ordered to provide further evaluation of the underlying cause of the symptoms. Specificity of the condition depends on evaluation and clarification of clinical indicators and clear documentation that identifies the SOI and resources required in the treatment of the patient. (See Figure 4.1 for additional information.)
Determine underlying cause:
Arterial spasm

Temporary interruption of oxygen supply to cerebral tissue
Symptoms last < 24 hours
Head imaging does not reveal acute changes
No residual effects

Determine underlying cause:
• Infarct
• Hemorrhage
Permanent cerebral condition with accompanying ischemia
Symptoms last > 24 hours
Head CT scan may indicate acute changes but is not conclusive
Head MRI is considered conclusive and will indicate acute changes
Residual effects vary and are dependent on location of the brain affected, but may include:
• Loss of function (e.g., hemiplegia, aphasia)
• Loss of sensation (e.g., dysesthesia, vision changes)
• Loss of memory

**CVA documentation**
Effects of a cerebrovascular accident (CVA) may develop over time and may be described as late effects of a previous stroke. The *ICD-9-CM Official Guidelines for Coding and Reporting* indicates that there is no time limit as to when these conditions may develop as long as the documentation is clear that the current condition is related to a previous stroke. Examples of conditions that may be a late effect of a stroke include:

- Aphasia
- Dysphasia
- Hemiplegia
- Ataxia
- Vertigo
Typically, the patient presents with a history of CVA and new, vague symptoms of increasing weakness, gait disturbance, or altered mental status. Use the following tips to ensure the most complete CVA documentation:

- Always obtain proper determination of the most definitive diagnosis
- Specify the type of CVA as ischemic or hemorrhagic
- In an ischemic stroke, the artery or arteries affected should be identified and an infarction should be documented if present
- In a hemorrhagic stroke, the site of the hemorrhage should be documented
- If a stroke was treated with a thrombolytic agent, it should be clearly documented
- If a stroke is aborted through the use of a thrombolytic agent, assign code 434.91, cerebral artery occlusion, with cerebral infarction (Coding Clinic, Q3 2007, p. 12)

**Encephalopathy documentation**

Another condition that often requires clarification is encephalopathy. There are several types of encephalopathy, and physicians typically describe patient signs and symptoms as changes in mental status caused by an underlying condition such as infection or metabolic disturbance. Unfortunately, most physicians document this condition as an alteration in mental status, delirium, or even worsening dementia. With treatment of the condition that caused the altered mental status the patient improves to his or her baseline condition.

Encephalopathy may be caused by advanced and severe disease states, by infections, or as a result of taking certain medications. The three main causes of encephalopathy are liver disease, kidney disease, and lack of oxygen to the brain typically related to infection. The associated symptoms can include subtle personality changes, inability to concentrate, lethargy, progressive loss of memory, progressive loss of consciousness, and abnormal involuntary movements. Elderly patients may also exhibit a combative personality. Encephalopathy may vary in severity from only subtle changes in mental state to a more advanced state that can lead to deep coma. Cerebral edema is a common manifestation of severe encephalopathy, which causes an increase in intracranial pressure resulting in the changes in mental status.

Causes of encephalopathy include:

- Brain tumor or increased intracranial pressure
• Exposure to toxins (including solvents, excess animal protein, drugs, alcohol, paints, industrial chemicals, and certain metals)
• Radiation
• Trauma
• Poor nutrition
• Organ failure

The diagnosis of encephalopathy (see Figure 4.2) depends on the presence of underlying conditions that may contribute to altered mental states such as confusion, stupor, or coma and may include symptoms of central nervous system damage visible on an encephalogram. Head CTs and MRIs are often ordered to assist in ruling out neurological causes of the change in mental status such as acute infarct or ischemia.

Treatment is aimed at eliminating the cause and increasing oxygenation of the brain. The outcome for patients who present with symptoms of encephalopathy depends on the cause. If the cause can be corrected in time, the outcome can be favorable.

**Figure 4.2 | ENCEPHALOPATHY**

<table>
<thead>
<tr>
<th>Type of Encephalopathy</th>
<th>Causes</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metabolic</td>
<td>Infection&lt;br&gt;Metabolic or mitochondrial dysfunction&lt;br&gt;Poor nutrition&lt;br&gt;Tumors&lt;br&gt;Increased intracranial pressure (nontraumatic):&lt;br&gt;• Seizures&lt;br&gt;• CVA</td>
<td>Antibiotics&lt;br&gt;TPN, PEG, improved diet&lt;br&gt;Chemo, radiation&lt;br&gt;Reduction of pressure</td>
</tr>
<tr>
<td>Toxic</td>
<td>Prolonged exposure to toxic elements (including solvents, drugs, radiation, paints, industrial chemicals, and certain metals)</td>
<td>Removal of toxic agent&lt;br&gt;Hydration</td>
</tr>
<tr>
<td>Hepatic</td>
<td>Liver failure resulting in increased ammonia levels&lt;br&gt;• Hepatitis&lt;br&gt;• Cirrhosis</td>
<td>Lactulose&lt;br&gt;Low-protein diet</td>
</tr>
</tbody>
</table>