Encephalopathy and Other Brain Diseases

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Disclosures

• This presentation is designed to provide accurate and authoritative information in regard to the subject matter covered. The information includes both reporting and interpretation of materials in various publications, as well as interpretation of policies of various organizations. This information is subject to individual interpretation and to changes over time.

• **This subject matter is very controversial and not clear cut.** VP-MA Health Solutions, dba CDIMD, HCPro, ACDIS, the individual speakers, and all affiliated entities do not warrant that the written or oral opinions expressed in this lecture apply to every situation. Prior to implementing any of the suggestions discussed at this meeting or the submission of ICD-10-CM codes affecting payment, the attendee is advised to seek counsel from his or her compliance officer, legal entities, or other appropriate entities.

• CDIMD, HCPro, ACDIS, the individual speakers, and all affiliated entities support accurate coding of every clinical circumstance based upon physician documentation, recognize the role and responsibility of treating physicians to utilize language they deem appropriate to their circumstances, and support compliance to all local, state, and federal laws.
Learning Objectives

• At the completion of this educational activity, the learner will be able to:
  – Understand the fundamental definitions of encephalopathy and other brain diseases along with their manifestations
  – Process the ICD-10-CM coding conventions and official advice essential to the encephalopathies and their manifestations
  – Suggest defendable strategies advocating ICD-10-CM coding compliance
MDC 1 – Nervous System
Altered Mental Status

- **Manifestation**
  - Dementia, delirium, psychosis, vegetative states
  - Stupor, coma

- **Underlying cause**
  - Various encephalopathies or other structural diseases of the brain
  - Stroke, TIA, Alzheimer’s disease, Lewy-body dementia, encephalitis

- **Severity or specificity**
  - Initial encounter (active phase), Subsequent encounter (healing phase), sequela if related to a drug overdose or trauma
  - Acute or chronic
  - Glasgow coma scales

- **Instigating cause**
  - Drug toxicity (declare if it is an overdose or if not properly taken)
  - Cerebral embolus due to atrial fibrillation

- **Consequences or complications**
  - Acute respiratory failure
  - SIADH leading to hyponatremia resulting in a metabolic encephalopathy
Variations of Altered Mental Status

Variations of “Altered Mental Status”

- Altered mental status is a commonly used non-specific term often requiring queries for specificity, duration, and/or underlying or precipitating causes.
- Sources for definitions of the more specific terms:
  - DSM-V
  - Neurology textbooks
- ICD-10-CM does not always consider the symptom to be integral to the underlying cause.
  - Requires close attention to the ICD-10-CM Index to Diseases and Table.
Dementia
AKA “Major Neurocognitive Disorder”

• **Diagnostic Criteria**
  • Evidence of significant cognitive decline from a previous level of performance in one or more cognitive domains (complex attention, executive function, learning and memory, language, perceptual-motor, or social cognition) based on:
    – Concern of the individual, a knowledgeable informant, or the clinician that there has been a significant decline in cognitive function; and
    – A substantial impairment in cognitive performance, preferably documented by standardized neuropsychological testing or, in its absence, another quantified clinical assessment.
  • The cognitive deficits interfere with independence in everyday activities (i.e., at a minimum, requiring assistance with complex instrumental activities of daily living such as paying bills or managing medications).
  • The cognitive deficits do not occur exclusively in the context of a delirium.
  • The cognitive deficits are not better explained by another mental disorder (e.g., major depressive disorder, schizophrenia).
Vascular Dementia

F01 Vascular dementia
Vascular dementia as a result of infarction of the brain due to vascular disease, including hypertensive cerebrovascular disease.

Includes: arteriosclerotic dementia

Code first the underlying physiological condition or sequelae of cerebrovascular disease.

F01.5 Vascular dementia

F01.50 Vascular dementia without behavioral disturbance
Major neurocognitive disorder without behavioral disturbance

F01.51 Vascular dementia with behavioral disturbance
Major neurocognitive disorder due to vascular disease, with behavioral disturbance
Major neurocognitive disorder with aggressive behavior
Major neurocognitive disorder with combative behavior
Major neurocognitive disorder with violent behavior
Vascular dementia with aggressive behavior
Vascular dementia with combative behavior
Vascular dementia with violent behavior

Use additional code, if applicable, to identify wandering in vascular dementia (Z91.83)
“Behavioral Disturbance” with Dementia

Specify:

**Without behavioral disturbance:** If the cognitive disturbance is not accompanied by any clinically significant behavioral disturbance.

**With behavioral disturbance** (*specify disturbance*): If the cognitive disturbance is accompanied by a clinically significant behavioral disturbance (e.g., psychotic symptoms, mood disturbance, agitation, apathy, or other behavioral symptoms).

Behavior disturbances are CCs in MS-DRGs

DSM-V allows for milder manifestations than in ICD-10-CM
F02 – Dementia in Other Diseases

F02 Dementia in other diseases classified elsewhere

Includes: Major neurocognitive disorder in other diseases classified elsewhere

Excludes2: dementia in alcohol and psychoactive substance disorders (F10-F19, with .17, .27, .97) vascular dementia (F01.5-)

F02.8 Dementia in other diseases classified elsewhere

F02.80 Dementia in other diseases classified elsewhere without behavioral disturbance
  Dementia in other diseases classified elsewhere NOS
  Major neurocognitive disorder in other diseases classified elsewhere

F02.81 Dementia in other diseases classified elsewhere with behavioral disturbance
  Dementia in other diseases classified elsewhere with aggressive behavior
  Dementia in other diseases classified elsewhere with combative behavior
  Dementia in other diseases classified elsewhere with violent behavior
  Major neurocognitive disorder in other diseases classified elsewhere with aggressive behavior
  Major neurocognitive disorder in other diseases classified elsewhere with combative behavior
  Major neurocognitive disorder in other diseases classified elsewhere with violent behavior

Use additional code, if applicable, to identify wandering in dementia in conditions classified elsewhere (Z91.83)
F02 Dementia in other diseases classified elsewhere

- Alzheimer's (G30.-)
- cerebral lipidosis (E75.4)
- Creutzfeldt-Jakob disease (A81.0-)
- dementia with Lewy bodies (G31.83)
- dementia with Parkinsonism (G31.83)
- epilepsy and recurrent seizures (G40.-)
- frontotemporal dementia (G31.09)
- hepatolenticular degeneration (E83.0)
- human immunodeficiency virus [HIV] disease (B20)
- Huntington's disease (G10)
- hypercalcemia (E83.52)
- hypothyroidism, acquired (E00-E03.-)
- intoxications (T36-T65)
- Jakob-Creutzfeldt disease (A81.0-)
- multiple sclerosis (G35)
- neurosyphilis (A52.17)
- niacin deficiency [pellagra] (E52)
- Parkinson's disease (G20)
- Pick's disease (G31.01)
- polyarteritis nodosa (M30.0)
- prion disease (A81.9)
- systemic lupus erythematosus (M32.-)
- traumatic brain injury (S06.-)
- trypanosomiasis (B56.-, B57.-)
- vitamin B deficiency (E53.8)

F02 can only be used with these diseases
Manifestation/Underlying Cause
ICD-10-CM Conventions

**Parkinsonism (idiopathic) (primary) G20**
- with neurogenic orthostatic hypotension (symptomatic) G90.3
- arteriosclerotic G21.4
- dementia G31.83 [F02.80]
  - with behavioral disturbance G31.83 [F02.81]

**Pick's**
- cerebral atrophy G31.01 [F02.80]
  - with behavioral disturbance G31.01 [F02.81]
- disease or syndrome (brain) G31.01 [F02.80]
  - with behavioral disturbance G31.01 [F02.81]
  - brain G31.01 [F02.80]
    - with behavioral disturbance G31.01 [F02.81]
- pericardium (pericardial pseudocirrhosis of liver) I31.1
- syndrome
  - brain G31.01 [F02.80]
    - with behavioral disturbance G31.01 [F02.81]
    - of heart (pericardial pseudocirrhosis of liver) I31.1
F03 – Unspecified Dementia

F03 Unspecified dementia

Presenile dementia NOS
Presenile psychosis NOS
Primary degenerative dementia NOS
Senile dementia NOS
Senile dementia depressed or paranoid type
Senile psychosis NOS

Excludes1: senility NOS (R41.81)

Excludes2: mild memory disturbance due to known physiological condition (F06.8)
  senile dementia with delirium or acute confusional state (F05)

F03.9 Unspecified dementia

F03.90 Unspecified dementia without behavioral disturbance
  Dementia NOS
Brief Psychosis

- Presence of one (or more) of the following symptoms. At least one of these must be (1), (2), or (3):
  - Delusions.
  - Hallucinations.
  - Disorganized speech (e.g., frequent derailment or incoherence).
  - Grossly disorganized or catatonic behavior.
  - Note: Do not include a symptom if it is a culturally sanctioned response.
- Duration of an episode of the disturbance is at least 1 day but less than 1 month, with eventual full return to premorbid level of functioning.
- The disturbance is not better explained by major depressive or bipolar disorder with psychotic features or another psychotic disorder such as schizophrenia or catatonia, and is not attributable to the physiological effects of a substance (e.g., a drug of abuse, a medication) or another medical condition.
Psychosis Due to Known Physiological Condition

F06 Other mental disorders due to known physiological condition

Includes: mental disorders due to endocrine disorder
mental disorders due to exogenous hormone
mental disorders due to exogenous toxic substance
mental disorders due to primary cerebral disease
mental disorders due to somatic illness
mental disorders due to systemic disease affecting the brain

Code first the underlying physiological condition

Excludes1: unspecified dementia (F03)

Excludes2: delirium due to known physiological condition (F05)
dementia as classified in F01-F02
other mental disorders associated with alcohol and other psychoactive substances (F10-F19)

F06.0 Psychotic disorder with hallucinations due to known physiological condition
Organic hallucinatory state (nonalcoholic)

Excludes2: hallucinations and perceptual disturbance induced by alcohol and other psychoactive substances
(F10-F19 with .151, .251, .951)
schizophrenia (F20-.)
Delirium

A. A disturbance in attention (i.e., reduced ability to direct, focus, sustain, and shift attention) and awareness (reduced orientation to the environment).

B. The disturbance develops over a short period of time (usually hours to a few days), represents a change from baseline attention and awareness, and tends to fluctuate in severity during the course of a day.

C. An additional disturbance in cognition (e.g., memory deficit, disorientation, language, visuospatial ability, or perception).

D. The disturbances in Criteria A and C are not better explained by another preexisting, established, or evolving neurocognitive disorder and do not occur in the context of a severely reduced level of arousal, such as coma.

E. There is evidence from the history, physical examination, or laboratory findings that the disturbance is a direct physiological consequence of another medical condition, substance intoxication or withdrawal (i.e., due to a drug of abuse or to a medication), or exposure to a toxin, or is due to multiple etiologies.
Delirium “Due to” Known Physiological Condition

F05 Delirium due to known physiological condition
- Acute or subacute brain syndrome
- Acute or subacute confusional state (nonalcoholic)
- Acute or subacute infective psychosis
- Acute or subacute organic reaction
- Acute or subacute psycho-organic syndrome
- Delirium of mixed etiology
- Delirium superimposed on dementia
- Sundowning

*Code first* the underlying physiological condition

*Excludes1:* delirium NOS (R41.0)

*Excludes2:* delirium tremens alcohol-induced or unspecified (F10.231, F10.921)
Variations of Altered Mental Status

• Altered mental status is a commonly used non-specific term often requiring queries for specificity, duration, and/or underlying or precipitating causes

• Sources for definitions of the more specific terms:
  – DSM-V
  – Neurology textbooks

• ICD-10-CM does not always consider the symptom to be integral to the underlying cause
  – Requires close attention to the ICD-10-CM Index to Diseases and Table
ICD-10 Rules for Dementia/Delirium
“Code First” Requirements

- F01 – Vascular dementia
  - Code first the underlying physiological condition or sequelae of cerebrovascular disease
- F02 – Dementia in other diseases classified elsewhere
  - Code first the underlying physiological condition
- F03 – Unspecified dementia
- F04 – Amnestic disorder due to known physiological condition
  - Code first the underlying physiological condition
- F05 – Delirium due to known physiological condition
  - Code first the underlying physiological condition
- F06 – Other mental disorders due to known physiological condition
  - Code first the underlying physiological condition
- F07 – Personality and behavioral disorders due to known physiological condition
  - Code first the underlying physiological condition
- F09 – Unspecified mental disorder due to known physiological condition
  - Code first the underlying physiological condition

ICD-10 requires providers to determine the underlying cause of delirium and dementia. These cannot be coded unless documented.
Underlying Causes

Encephalitis

- A syndrome characterized by altered mental status and various combinations of acute fever, seizures, neurologic deficits, cerebrospinal fluid (CSF) pleocytosis, and neuroimaging and electroencephalographic (EEG) abnormalities, commonly associated with neurotrophic viruses.
## Arboviruses Causing Encephalitis in the United States

<table>
<thead>
<tr>
<th>Virus</th>
<th>Region of the U.S.</th>
<th>Reservoir</th>
<th>Vector</th>
<th>Susceptible Group</th>
<th>Mortality %</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alphaviruses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eastern equine encephalitis virus</td>
<td>East and Gulf Coasts</td>
<td>Birds</td>
<td>Culex melanura, aedes species</td>
<td>Children, elderly persons</td>
<td>50–70</td>
<td>Severe encephalitis</td>
</tr>
<tr>
<td>Western equine encephalitis virus</td>
<td>West, Midwest</td>
<td>Birds, jackrabbits</td>
<td>Culex tarsalis</td>
<td>Infants, elderly persons</td>
<td>5–10</td>
<td>No cases in the U.S. since 1994</td>
</tr>
<tr>
<td>Venezuelan equine encephalitis virus</td>
<td>Florida, Texas, and Gulf Coast</td>
<td>Horses, birds, rodents</td>
<td>Culex species, aedes species, others</td>
<td>Children, elderly persons</td>
<td>10–20</td>
<td>Encephalitis</td>
</tr>
<tr>
<td><strong>Flaviviruses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>West Nile virus</td>
<td>All regions</td>
<td>Birds</td>
<td>Culex species</td>
<td>Elderly persons</td>
<td>10–15</td>
<td>Encephalitis, meningitis, anterior horn-cell paralysis</td>
</tr>
<tr>
<td>St. Louis encephalitis virus</td>
<td>All regions</td>
<td>Birds</td>
<td>Culex species</td>
<td>Elderly persons</td>
<td>5–25</td>
<td>Encephalitis, meningitis, anterior horn-cell paralysis</td>
</tr>
<tr>
<td>Zika virus</td>
<td>Texas, Florida, Puerto Rico</td>
<td>Humans, nonhuman primates</td>
<td>Aedes species</td>
<td>Fetus</td>
<td></td>
<td>Congenital Zika microcephaly syndrome, Guillain–Barré syndrome; encephalitis is rare</td>
</tr>
<tr>
<td>Powassan virus</td>
<td>Northeast</td>
<td>Squirrels, mice, small mammals</td>
<td>Ixodes species</td>
<td></td>
<td>10–15</td>
<td>Encephalitis</td>
</tr>
<tr>
<td>Dengue virus</td>
<td>Florida, Texas, Hawaii, and Puerto Rico</td>
<td>Humans, nonhuman primates</td>
<td>Aedes aegypti, A. albopictus</td>
<td></td>
<td>&lt;1</td>
<td>Guillain–Barré syndrome; encephalitis is rare</td>
</tr>
<tr>
<td><strong>Bunyaviruses</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>La Crosse virus</td>
<td>East and Midwest</td>
<td>Squirrels, chipmunks</td>
<td>A. albopictus, A. triseriatus</td>
<td>Children</td>
<td>&lt;1</td>
<td></td>
</tr>
<tr>
<td>Jamestown Canyon virus</td>
<td>Various regions</td>
<td>White-tailed deer</td>
<td>Aedes species, C. imitans</td>
<td>Adults</td>
<td>&lt;1</td>
<td></td>
</tr>
<tr>
<td>California encephalitis virus</td>
<td>West</td>
<td>Rabbits, rodents</td>
<td>A. melanomol, A. donalts</td>
<td>Children</td>
<td>&lt;1</td>
<td>Rare</td>
</tr>
<tr>
<td>Coltivirus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colorado tick fever virus</td>
<td>West</td>
<td>Squirrels, chipmunks, small mammals</td>
<td>Dermacentor andersoni</td>
<td></td>
<td>&lt;1</td>
<td>Meningitis; encephalitis is rare</td>
</tr>
</tbody>
</table>

* Data are from Tunkel et al. and Salimi et al.
Cerebral Edema – MCC
Cerebral Herniation – MCC

- Decadron treats the edema, not the malignancy
- Note any cerebral herniation or compression
**Question:** A patient is admitted and diagnosed with intracerebral hemorrhage (ICH). The provider also documented “vasogenic edema.” Is it appropriate to code the vasogenic edema?

**Answer:** Assign code 431, Intracerebral hemorrhage, as the principal diagnosis. Assign code 348.5, Cerebral edema, as an additional diagnosis. It is appropriate to code the cerebral edema separately since it is not inherent in cerebral hemorrhage.

Cerebral edema is an MCC

**Treatment**
- Intensive care
- Likely intubation
- Hyperventilation
- Mannitol or hypertonic saline
- Glycerol
- Diuretics
- High-dose steroids (e.g., Decadron)
- Possibly surgery
**Question:** The patient suffered an acute subdural hematoma with shift and mass effect. We have been instructed by a consultant that shift and mass effect are clinically synonymous with brain compression and should be coded as such.

- Would it be appropriate to assign code 348.4, Compression of brain, based on the provider’s documentation of "mass effect or midline shift"?

**Answer:** The coder should not make the assumption that midline shift or mass effect is synonymous with brain compression.

- The coder should query the provider and if the provider clarifies and documents that the "mass effect" or "midline shift" is brain compression, the coder may then assign a code for the brain compression.
Case Study
Brain Herniation

Radiology Report

1. No significant interval change in volume of a mixed density right-sided subdural hematoma with associated mass effect on the underlying brain parenchyma. Persistent right to left midline shift measuring 7 to 8 mm with a mild component of subfalcine herniation.

Operative Report

PREOPERATIVE DIAGNOSES
Large mixed blood product age, right subdural hematoma, and left hemiplegia

POSTOPERATIVE DIAGNOSES
Large mixed blood product age, right subdural hematoma, and left hemiplegia

PROCEDURES
1. Right-sided craniotomy for evacuation of subdural hematoma
2. Complex reconstruction of cranial bone flap with Lorenz plating system, greater than 5 cm

• Not documented by the neurosurgeon, thus not coded
• Is there a subfalcine herniation?
“TIA” – brief cerebral, spinal, or retinal ischemia without acute infarction – no time limit (e.g., 1 hour or 24 hour) in definition
  - Cerebral embolus or thrombus WITHOUT INFARCTION are usual underlying causes
“Stroke” – neurological symptoms with evidence of stroke on neuroimaging
“Aborted stroke” – “stroke in evolution” – transient neurologic symptoms due to ischemia with a normal MRI
  - Therapeutic efforts (e.g., tPA) may play a role
  - “Aborted stroke,” “stroke in evolution,” & “RIND” coded as strokes
TIA Symptoms

- Impaired speech and/or language
- Visual loss in one or both eyes
- Double vision
- Facial drooping
- Swallowing dysfunction
- Weakness on one side of the body
- Sensory loss on one side of the body
- Impaired coordination of limbs
- Vertigo
- Gait dysfunction

Table 3. Frequency of DWI Abnormality in Patients With Transient Neurological Episodes of Different Durations: Pooled Data From 10 MRI Studies Enrolling 818 Patients

<table>
<thead>
<tr>
<th>Duration of Symptoms, h</th>
<th>DWI Hyperintensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–1</td>
<td>33.6</td>
</tr>
<tr>
<td>1–2</td>
<td>29.5</td>
</tr>
<tr>
<td>2–3</td>
<td>39.5</td>
</tr>
<tr>
<td>3–6</td>
<td>30.0</td>
</tr>
<tr>
<td>6–12</td>
<td>51.1</td>
</tr>
<tr>
<td>12–18</td>
<td>50.0</td>
</tr>
<tr>
<td>18–24</td>
<td>49.5</td>
</tr>
</tbody>
</table>
Stroke
Differentiation From TIA

- Symptoms
  - YES
    - >24 h
  - NO
    - <24 h
- Focal Arterial Ischemia
  - YES
    - Pathological/Imaging Evidence of infarction
  - NO (or not done)
- Silent CNS Infarction (CNS Infarction)
- Ischemic Stroke (CNS Infarction)
- TIA
- Ischemic Stroke (CNS Infarction)
MDC 1 – Encephalopathy
Global Disease or Dysfunction

• Adams and Victor Neurology, 10e - Global disturbance of cerebral function
• NIH – any diffuse disease of the brain that alters brain function or structure.
  – May be caused by infectious agent (bacteria, virus, or prion), metabolic or mitochondrial dysfunction, brain tumor or increased pressure in the skull, prolonged exposure to toxic elements (including solvents, drugs, radiation, paints, industrial chemicals, and certain metals), chronic progressive trauma, poor nutrition, or lack of oxygen or blood flow to the brain.
  – The hallmark of encephalopathy is an altered mental state.

www.ninds.nih.gov/disorders/encephalopathy/encephalopathy.htm
Delirium - Manifestation
Encephalopathy – Underlying Cause

- Delirium
  - Acute change or fluctuation in mental status and inattention, accompanied by either disorganized thinking or an altered level of consciousness

- Encephalopathy
  - Global brain dysfunction resulting in an altered mental status

- Dr. Kennedy’s opinion
  - If the global brain dysfunction can be explained by an named condition (e.g. Alzheimer’s Disease) or its exacerbation (e.g. behavioral disturbance with Alzheimer’s Disease), then the term “encephalopathy” alone is integral to that disease

  - Exacerbation of a neurodegenerative condition is NOT an encephalopathy
MDC 1 – Encephalopathy
Multiple Options in ICD-10-CM

Encephalopathy (acute) G93.40
- acute necrotizing hemorrhagic G04.30
- postimmunization G04.32
- postinfectious G04.31
- specified NEC G04.39
- alcoholic G31.2
- anoxic — see Damage, brain, anoxic
- arteriosclerotic I67.2
- centrolobar progressive (Schilder) G37.0
- congenital Q07.9
- degenerative, in specified disease NEC G32.89
- demyelinating callosal G37.1
- due to
  - drugs (see also Table of Drugs and Chemicals) G92
    - hepatic — see Failure, hepatic
    - hyperbilirubinemic, newborn P57.9
    - due to isomunization (conditions in P55) P57.0
    - hypertensive I67.4
    - hypoglycemic E16.2
    - hypoxic — see Damage, brain, anoxic
    - hypoxic ischemic P91.60
    - mild P91.61
    - moderate P91.62
    - severe P91.63
  - in (due to) (with)
    - birth injury P11.1
    - hyperinsulinism E16.1 [G94]
    - influenza — see Influenza, with, encephalopathy
    - lack of vitamin (see also Deficiency, vitamin) E56.9 [G32.89]
    - neoplastic disease (see also Neoplasm) D49.9 [G13.1]
    - serum (see also Reaction, serum) T80.69
    - syphilis A52.17
    - trauma (postconcussional) F07.81
    - current injury — see Injury, intracranial
    - vaccination G04.02
    - lead — see Poisoning, lead
    - metabolic G93.41
    - drug induced G92
    - toxic G92
    - myoclonic, early, symptomatic — see Epilepsy, generalized, specified NEC
- necrotizing, subacute (Leigh) G31.82
- pellagrous E52 [G32.89]
- portosystemic — see Failure, hepatic
- postcontusional F07.81
- current injury — see Injury, intracranial, diffuse
- posthypoglycemic (coma) E16.1 [G94]
- postradiation G93.89
- saturnine — see Poisoning, lead
- septic G93.41
- specified NEC G93.49
- spongioform, subacute (viral) A81.09
- toxic G92
- metabolic G92
- traumatic (postconcussional) F07.81
- current injury — see Injury, intracranial
- vitamin B deficiency NEC E53.9 [G32.89]
- vitamin B1 E51.2
- Wernicke’s E51.2

(Acute) Encephalopathy by itself must be queried for specificity
Red = MCC
(Acute) Encephalopathy “in” a Disease (e.g. UTI) Not Classified In the Index

G93.4 Other and unspecified encephalopathy
Excludes1: alcoholic encephalopathy (G31.2)
encephalopathy in diseases classified elsewhere (G94)
hypertensive encephalopathy (I67.4)
toxic (metabolic) encephalopathy (G92)

G93.40 Encephalopathy, unspecified

G93.41 Metabolic encephalopathy
Septic encephalopathy

G93.49 Other encephalopathy
Encephalopathy NEC

G94 Other disorders of brain in diseases classified elsewhere
Code first underlying disease
Excludes1: encephalopathy in congenital syphilis (A50.49)
encephalopathy in influenza (J09.X9, J10.81, J11.81)
encephalopathy in syphilis (A52.19)
hydrocephalus in diseases classified elsewhere (G91.4)

A MCC
In 2018

NOT A MCC
Encephalopathy (w/ & w/o Adjective) Due to UTI

Toxic Metabolic Encephalopathy 2° UTI
G92 – Toxic Encephalopathy As PDx

(Acute) Encephalopathy due to UTI
N390 – UTI as PDx
Where Does the Index Use G94?

- Cyst (colloid) (mucous) (simple) (retention)
  - brain (acquired) G93.0
    - hydatid B67.99 [G94]
  - hydatid -see also Echinococcus B67.90
    - brain B67.99 [G94]
- Disease, diseased -see also Syndrome
  - brain G93.9
    - parasitic NEC B71.9 [G94]
  - parasitic B89
    - cerebral NEC B71.9 [G94]

One has to pay special attention to the encephalopathy in hyperinsulinism and posthypoglycemic encephalopathy

- Encephalopathy (acute) G93.40
  - in (due to) (with)
    - hyperinsulinism E16.1 [G94]
    - posthypoglycemic (coma) E16.1 [G94]
- Epilepsy
  - parasitic NOS B71.9 [G94]
- Hyperinsulinism
  - with
    - encephalopathy E16.1 [G94]
- Malaria
  - cerebral B50.0 [G94]
  - falciparum B50.9
    - with complications NEC B50.8
      - cerebral B50.0 [G94]
- Typhus (fever) A75.9
  - brain A75.9 [G94]
  - cerebral A75.9 [G94]
As discussed in the FY 2019 IPPS/LTCH PPS proposed rule (83 FR 20241), we also received a request to change the severity level for ICD-10-CM diagnosis code G93.40 (Encephalopathy, unspecified) from an MCC to a non-CC.

– The requestor pointed out that the nature of the encephalopathy or its underlying cause should be coded.
– The requestor also noted that unspecified heart failure is a non-CC.

Our clinical advisors reviewed this request and agreed that, from a clinical standpoint, the resources involved in caring for a patient with this condition are aligned with those of an MCC. Therefore, we did not propose a change to the severity level for ICD-10-CM diagnosis code G93.40.
Encephalopathy
Medicare’s Response

• Several commenters supported the proposal to maintain the severity level for ICD-10-CM diagnosis code G93.40 as an MCC.
  – One commenter opposed the proposal, stating that unspecified encephalopathy is poorly defined, not all specified encephalopathies are MCCs, and the MCC status creates an incentive for coding personnel to not pursue specificity of encephalopathy which could lead to a lower relative weight.
• Response: We appreciate the commenters’ support. After reviewing the rationale provided by the commenter who opposed our proposal, we concur with the commenter that unspecified encephalopathy is poorly defined, not all encephalopathies are MCCs, and the MCC status creates an incentive for coding personnel to not pursue specificity of encephalopathy. For these reasons, our clinical advisors agree that it is appropriate to change the severity level from an MCC to a CC.
  – After consideration of the public comments we received, we are changing the severity level for ICD-10-CM diagnosis code G93.40 (and G93.49) from an MCC to a CC.
June 4, 2018

Centers for Medicare & Medicaid Services,
Department of Health and Human Services,
Attention: CMS-1694-P,  
P.O. Box 8011,  
Baltimore, MD 21244-1850

Comment on the FY2019 IPPS Proposed Rule  
Encephalopathy as a MCC

Dear Sirs and Madams:

Allow me to comment on CMS’s proposed refusal to downgrade ICD-10-CM code G93.40,  
Encephalopathy, unspecified, from its current MCC status to a non-CC status as outlined in the 2019 IPPS proposed rule.

I understand that CMS’s analytics demonstrate that patients with code G93.40 have increased costs commensurate with a MCC. I hope that at the end of my comment, you would at least consider unspecified encephalopathy to be a CC (and not a MCC) which is equivalent to a specified acute delirium (F05) or psychosis (F06.0 or F06.2), reserving MCC status for specified encephalopathies that are currently listed as a MCC (e.g. G92, Toxic encephalopathy; G93.41, Metabolic encephalopathy) and non-CC status for those that are not (e.g. hepatic encephalopathy without coma). The benefit of this designation is to encourage documentation and coding that provided essential specificity, which was one of CMS’s stated goals in its transition from ICD-9-CM to ICD-10-CM.1
Static Encephalopathy

What is “static encephalopathy”?

• “The term *static encephalopathy* is a fancy phrase used by neurologists in recent years to refer to chronic nonprogressive brain disorders in children, primarily cerebral palsy and mental retardation.”


*Question to Coding Clinic on whether to code “static encephalopathy” was answered that the treating physician should be queried to determine if the term should be added.*
# Cerebral Palsy

<table>
<thead>
<tr>
<th>ICD-10 Code</th>
<th>Description</th>
<th>2015 HCC#</th>
<th>2015 CM RW</th>
<th>2015 IN RW</th>
<th>AHRQ PSI</th>
<th>MS-DRG MCC/CC</th>
<th>MS-DRG HAC</th>
<th>APR-DRG SOI</th>
<th>APR-DRG ROM</th>
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<tbody>
<tr>
<td>G800</td>
<td>Spastic quadriplegic cerebral palsy</td>
<td>74</td>
<td>0.046</td>
<td>-</td>
<td>MCC</td>
<td>2</td>
<td>1</td>
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<td>-</td>
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<td>1</td>
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<tr>
<td>G802</td>
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<td>74</td>
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<td>-</td>
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<td>1</td>
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<tr>
<td>G803</td>
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<tr>
<td>G804</td>
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<td>-</td>
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<td>1</td>
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<tr>
<td>G808</td>
<td>Other cerebral palsy</td>
<td>74</td>
<td>0.046</td>
<td>-</td>
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<td>1</td>
<td>1</td>
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<tr>
<td>G809</td>
<td>Cerebral palsy, unspecified</td>
<td>74</td>
<td>0.046</td>
<td>-</td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note that “spastic quadriplegic” cerebral palsy is a MCC
- Quadriparesis = Quadriplegia
- Hemiparesis = Hemiplegia

The term “cerebral palsy with quadriparesis” doesn’t add weight without the word “spastic”
<table>
<thead>
<tr>
<th>MedPar #</th>
<th>Hospital Name</th>
<th>City</th>
<th>ST</th>
<th>G93.40 as SDx in DRG w/MCC (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>450102</td>
<td>MOTHER FRANCES HOSPITAL</td>
<td>Tyler</td>
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<td>450462</td>
<td>TEXAS HEALTH PRESBYTERIAN HOSPITAL DALLAS</td>
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<td>Longview</td>
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<td>Fort Worth</td>
<td>TX</td>
<td>11.09</td>
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<td>Webster</td>
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<tr>
<td>450083</td>
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<td>BAYLOR SCOTT &amp; WHITE MEDICAL CENTER GRAPEVINE</td>
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<td>8.93</td>
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<td>450034</td>
<td>CHRISTUS SOUTHEAST TEXAS- ST ELIZABETH</td>
<td>Beaumont</td>
<td>TX</td>
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<tr>
<td>450844</td>
<td>METHODOIST WILLOWBROOK HOSPITAL</td>
<td>Houston</td>
<td>TX</td>
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<tr>
<td>450647</td>
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<td>TX</td>
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<td>Bryan</td>
<td>TX</td>
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</tr>
</tbody>
</table>
Question:
A patient is admitted to the hospital due to altered mental status, and is diagnosed with an acute lacunar infarct and encephalopathy secondary to the lacunar infarction. Would the encephalopathy be coded separately or is it considered inherent to the acute lacunar infarct?

Answer:
Assign code G93.49, Other encephalopathy, for encephalopathy that occurs secondary to an acute cerebrovascular accident/stroke. Although the encephalopathy is associated with an acute lacunar infarct, it is not inherent, and therefore is coded when it occurs.

G93.49 is a MCC in 2018; CC in 2019

• Dr. Kennedy disagreed with this advice and registered his complaint to the Coding Clinic
• Sadly, Coding Clinic said “no” in the 2nd Quarter, 2018
Toxic/Metabolic Encephalopathies
Definitions

• **Acute toxic-metabolic encephalopathy** (TME), which encompasses delirium and the acute confusional state, is an **acute** condition of global cerebral dysfunction in the **absence of primary structural brain disease**

• **Coded as G92, Toxic Encephalopathy**
  – Best to get the words “toxic” if due to a drug or “metabolic” if due to a metabolic issue if these can be identified

MDC 1 – Encephalopathy
Multiple Options in ICD-10-CM

Encephalopathy (acute) G93.40
- acute necrotizing hemorrhagic G04.30
- postimmunization G04.32
- postinfectious G04.31
- specified NEC G04.39
- alcoholic G31.2
- anoxic —see Damage, brain, anoxic
- arteriosclerotic I67.2
- centrolobar progressive (Schilder) G37.0
- congenital Q07.9
- degenerative, in specified disease NEC G32.89
- demyelinating callosal G37.1
- due to
  - - drugs (see also Table of Drugs and Chemicals) G92
    - hepatic —see Failure, hepatic
    - hyperbilirubinemic, newborn P57.9
    - due to immunization (conditions in P55) P57.0
    - hypertensive I67.4
    - hypoglycemic E16.2
    - hypoxic —see Damage, brain, anoxic
    - hypoxic ischemic P91.60
    - mild P91.61
    - moderate P91.62
    - severe P91.63
  - - in (due to) (with)
    - - birth injury P11.1
    - - hyperinsulinism E16.1 [G94]
    - - influenza —see Influenza, with, encephalopathy
    - - lack of vitamin (see also Deficiency, vitamin) E56.9 [G32.89]
    - - neoplastic disease (see also Neoplasm) D49.9 [G13.1]
    - - serum (see also Reaction, serum) T80.69
    - - syphilis A52.17
    - - trauma (postconcussional) F07.81
    - - - current injury —see Injury, intracranial
    - - vaccination G04.02
    - - lead —see Poisoning, lead
    - - metabolic G93.41
    - - drug induced G92
    - - toxic G92
    - myoclonic, early, symptomatic —see Epilepsy, generalized, specified NEC
  - - necrotizing, subacute (Leigh) G31.82
  - - pellagrous E52 [G32.89]
  - - portosystemic —see Failure, hepatic
  - - postcontusional F07.81
  - - current injury —see Injury, intracranial, diffuse
  - - posthypoglycemic (coma) E16.1 [G94]
  - - postradiation G93.89
  - - saturnine —see Poisoning, lead
    - - septic G93.41
  - - specified NEC G93.49
  - - spongioform, subacute (viral) A81.09
  - - toxic G92
  - - metabolic G92
  - - traumatic (postconcussional) F07.81
  - - current injury —see Injury, intracranial
  - - vitamin B deficiency NEC E53.9 [G32.89]
  - - vitamin B1 E51.2
  - - Wernicke's E51.2

(Acute) Encephalopathy by itself must be queried for specificity
Red = MCC
Code Title Suggested by Index Conflicting with Clinical Diagnoses

(If the index is confusing), A basic rule of coding is that further research is done if the title of the code suggested by the index clearly does not identify the condition correctly.

– Coding Clinic, Second Quarter 1991 Page: 20
– Coding Clinic, Third Quarter 2004 Page: 5 to 6
– Coding Clinic, First Quarter 2013 Pages: 13-14
Toxic Encephalopathy

- In relation to chemicals or drugs, what’s the definition of the word “toxic”?  
  - Poisoning?  
  - Direct neural injury?  
  - Adverse effect?  
- Does “toxic” involve  
  - Pharmaceuticals?  
  - Heavy metals?  
  - Street drugs?  
  - Endogenous chemicals (e.g. ammonia)

- ICD-10-CM Index  
  - Encephalopathy (acute)  
    - Due to drug – G92  
    - Metabolic-Toxic – G92  
    - Toxic – G92

The provider must determine and document if the encephalopathy due to a drug is integral to the drug’s effect or a “toxic encephalopathy” that is an adverse effect or the result of a poisoning.
Toxic Encephalopathy
Alcohol as a Toxin

If the event can be viewed as an poisoning, then T51-T65 is coded first followed by G92

T51  Toxic effect of alcohol
The appropriate 7th character is to be added to each code from category T51
A - initial encounter
D - subsequent encounter
S - sequela

G92  Toxic encephalopathy
Toxic encephalitis
Toxic metabolic encephalopathy

Code first (T51-T65) to identify toxic agent

T51.0  Toxic effect of ethanol
Toxic effect of ethyl alcohol

Excludes2: acute alcohol intoxication or 'hangover' effects (F10.129, F10.229, F10.929)
drunkenness (F10.129, F10.229, F10.929)
pathological alcohol intoxication (F10.129, F10.229, F10.929)

T51.0X  Toxic effect of ethanol

T51.0X1  Toxic effect of ethanol, accidental (unintentional)
Toxic effect of ethanol NOS

T51.0X2  Toxic effect of ethanol, intentional self-harm

T51.0X3  Toxic effect of ethanol, assault

T51.0X4  Toxic effect of ethanol, undetermined
Alcohol Overdose: The Dangers of Drinking Too Much

Celebrating at parties, cheering a favorite sports team, and simply enjoying a break from work are common activities throughout the year. For some people, these occasions also may include drinking—even drinking to excess. And the results can be deadly.

Although many people enjoy moderate drinking, defined as 1 drink per day for women or 2 for men, drinking too much can lead to an overdose. An overdose of alcohol occurs when a person has a blood alcohol content (or BAC) sufficient to produce impairments that increase the risk of harm. Overdoses can range in severity, from problems with balance and slurred speech to coma or even death. What tips the balance from drinking that has pleasant effects to drinking that can cause harm varies among individuals. Age, drinking experience, gender, the amount of food eaten, even ethnicity all can influence how much is too much.

Underage drinkers may be at particular risk for alcohol overdose. Research shows that people under age 20 typically drink about 6 drinks at one time. Drinking such a large quantity of alcohol can overwhelm the body’s ability to break down and clear alcohol from the bloodstream. This leads to rapid increases in BAC and significantly impair brain function.

As BAC increases, so do alcohol’s effects—as well as the risk for harm. Even small increases in BAC can decrease coordination, make a person feel sick, and cloud judgment. This can lead to injury from falls or car crashes, leave one vulnerable to sexual assault or other acts of violence, and increase the risk for unprotected or unprotected sex. When BACs are over treaty levels (or thresholds), one may experience:

- Mental confusion, stupor, coma, or inability to wake up
- Vomiting
- Seizures
- Slow breathing (fewer than 8 breaths per minute)
- Irregular breathing (10 seconds or more between breaths)
- Hypothermia (low body temperature), bluish skin color, paleness
As BAC Increases, So Does Impairment

**Blood Alcohol Content (BAC)**

- **Life Threatening**
  - Loss of consciousness
  - Danger of life-threatening alcohol poisoning
  - Significant risk of death in most drinkers due to suppression of vital life functions
  - **0.31–0.45%**

- **Severe Impairment**
  - Speech, memory, coordination, attention, reaction time, balance significantly impaired
  - All driving-related skills dangerously impaired
  - Judgment and decisionmaking dangerously impaired
  - Blackouts (amnesia)
  - Vomiting and other signs of alcohol poisoning common
  - Loss of consciousness
  - **0.06–0.15%**

- **Increased Impairment**
  - Perceived beneficial effects of alcohol, such as relaxation, give way to increasing intoxication
  - Increased risk of aggression in some people
  - Speech, memory, attention, coordination, balance further impaired
  - **0.16–0.30%**

- **Mild Impairment**
  - Mild speech, memory, attention, coordination, balance impairments
  - Perceived beneficial effects, such as relaxation
  - Sleepiness can begin
  - **0.0–0.05%**
Assign

- Code T43.592A, Poisoning by other antipsychotics and neuroleptics, intentional self harm, initial encounter, as the principal diagnosis.
- Code G92, Toxic encephalopathy, should be assigned as an additional diagnosis.

The code first note is intended to provide sequencing guidance when coding toxic effects, and does not preclude assigning code G92 along with poisoning codes.

Coding Clinic, 1st Quarter, 2017, page 40
Question: A patient with dementia, who is confined to a nursing home, was admitted to the hospital after falling from his wheelchair.
   - The provider's final diagnostic statement listed, "Toxic encephalopathy due to ciprofloxacin."
   - When queried, the provider confirmed that the antibiotic had been properly administered.
Answer: Yes. Since this is an adverse reaction to medication, assign
   - G92, Toxic encephalopathy, as the principal diagnosis.
   - T36.8X5A, Adverse effect of other systemic antibiotics, initial encounter, as an additional diagnosis.

Coding Clinic, 1st Quarter, 2017, page 39
Toxic Encephalopathy
Ifosfamide

University of Michigan Pediatric Heme/Onc Program
Clinical Practice Guideline

Ifosfamide Neurotoxicity Guidelines

Date of Origin: June 2010   Date of Revision: Sept 2010   Date of Next Revision: Sept 2011

I. PURPOSE: Ifosfamide is an alkylating agent with a broad spectrum of antineoplastic activity and is used against several different kinds of tumors in children. Neurotoxicity is one of its most worrisome side effects and is reported to occur in 10% - 50% of patients receiving ifosfamide depending upon route of administration and patient population. Prevention and management of neurotoxicity is necessary to optimize dosing of ifosfamide and reduce morbidity associated with this chemotherapeutic agent.

Neurotoxicity has no code in ICD-10-CM
Toxic Encephalopathy
Ifosfamide

Ifosfamide central nervous system toxicity displays a wide spectrum of signs and symptoms. The most common manifestations include:

- Confusion and disorientation
- Decreased level of arousal
- Stupor and mutism, rarely evolving into coma
- Seizures
- Hallucinations
- Personality changes
- Blurred vision
- Extrapyramidal symptoms
- Cerebellar symptoms
- Weakness
- Urinary incontinence

Rx with methylene blue

Neurotoxicity has no code in ICD-10-CM
Metabolic Encephalopathy
Code G93.41 (not G92)

- Metabolic diseases presenting as a syndrome of confusion, stupor, or coma
  - Ischemia-hypoxia
  - Hypercapnia
  - **Hypoglycemia**
  - Hyperglycemia
  - Hepatic failure
  - Reye syndrome
  - Azotemia
  - Disturbances of sodium, water balance, and osmolality
  - Hypercalcemia
  - Other metabolic encephalopathies: acidosis due to diabetes mellitus or renal failure
  - Hashimoto disease steroid-responsive encephalopathy
  - Myxedema

- Metabolic diseases presenting as a progressive extrapyramidal syndrome
  - Acquired hepatocerebral degeneration
  - Hyperbilirubinemia and kernicterus
  - Hypoparathyroidism

- Metabolic diseases presenting as cerebellar ataxia
  - Hypothyroidism
  - Hyperthermia
  - Celiac sprue disease

- Metabolic diseases causing psychosis, or dementia
  - Cushing disease and steroid encephalopathy
  - Hyperthyroid psychosis and hypothyroidism (myxedema)
  - Hyperparathyroidism
  - Pancreatic encephalopathy

• **Question:** A patient with diabetes mellitus was admitted when she was found to be lethargic. Her blood sugar readings were low. Discharge diagnosis was documented as *acute encephalopathy secondary to hypoglycemia*. What are the diagnosis code assignments for *encephalopathy due to hypoglycemia* in a diabetic patient?

• **Answer:** Assign code **E11.649, Type 2 diabetes mellitus with hypoglycemia without coma**, as the principal diagnosis. Assign also code **G93.41, Metabolic encephalopathy**, as an additional diagnosis.

Very confusing advice, given that an adjective to the term “encephalopathy” or the term “metabolic encephalopathy” was not documented, hypoglycemic encephalopathy is classified as **E16.2** in the Index to Diseases (not E11.649 and G93.41), and G94 was not used.
Encephalopathy due to Diabetic Hypoglycemia

Question:
The Central Office has received several requests to clarify advice published in Coding Clinic, Third Quarter, 2015, page 21, about encephalopathy due to diabetic hypoglycemia. When the terms “encephalopathy, hypoglycemic” are referenced, the Index directs to code E16.2, Hypoglycemia. Additionally, there was no recommendation to query the provider regarding the underlying cause, which could be due to insulin or another hypoglycemic agent; and there was no mention of metabolic encephalopathy in the question.

Answer:
Codes E11.649, Type 2 diabetes mellitus with hypoglycemia without coma, and G93.41, Metabolic encephalopathy, are the correct code assignments for metabolic encephalopathy due to diabetic hypoglycemia. The fact that the provider specifically documented “metabolic encephalopathy” in his final diagnostic statement was inadvertently omitted from the published question.

Although the Index directs to code E16.2, Hypoglycemia, unspecified, under “encephalopathy, hypoglycemic,” code E16.2 is not appropriate as it refers to non-diabetic hypoglycemia. In addition, the patient had taken his antidiabetic medication as prescribed and there was no indication in the health record of adverse effect, underdosing, and/or poisoning.
Clinical Indicators and/or Treatment:

Labs: No obvious electrolyte abnormalities or positive drug screens

Imaging: CT normal

Progress Notes: AMS due to Imipenem. No focal neurological findings. Changed to Zosyn.

Based on the above, could you clarify in the Progress Note and/or DC Summary the appropriate diagnosis, that supports the above clinical indicators and additional monitoring, evaluation and/or treatment rendered:

- A neurodegenerative disorder w/behavioral disturbances – Please cite the underlying brain disease
- Toxic encephalopathy as an adverse reaction to imipenem
- Metabolic encephalopathy – please cite the metabolic issue
- Encephalopathy due to another cause – please cite
- A delirium of unknown cause
- A psychiatric illness – please cite
- Other
- Unable to determine (Explain)
Hepatic Encephalopathy

- A wide array of transient and reversible neurologic and psychiatric manifestations usually found in patients with chronic liver disease and portal hypertension, but also seen in patients with acute liver failure
  - Occurs in 50%–70% of patients with cirrhosis
  - Coded as hepatic failure in ICD-10
- Treatment options
  - Diet – low protein
  - Medications – lactulose, neomycin, rifaximin, probiotics
- ICD-10 consideration
  - May service as a reason for admission
  - **Only an MCC if with coma or unconsciousness**

### Impairment

<table>
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<tr>
<th>Grade</th>
<th>Intellectual function</th>
<th>Neuromuscular function</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>Minimal, subclinical</td>
<td>Normal examination findings. Subtle changes in work or driving.</td>
<td>Minor abnormalities of visual perception or on psychometric or number tests</td>
</tr>
<tr>
<td>1</td>
<td>Personality changes, attention deficits, irritability, depressed state</td>
<td>Tremor and incoordination</td>
</tr>
<tr>
<td>2</td>
<td>Changes in sleep-wake cycle, lethargy, mood and behavioral changes, cognitive dysfunction</td>
<td>Asterixis, ataxic gait, speech abnormalities (slow and slurred)</td>
</tr>
<tr>
<td>3</td>
<td>Altered level of consciousness (somnolence), confusion, disorientation, and amnesia</td>
<td>Muscular rigidity, nystagmus, clonus, Babinski sign, hyporeflexia</td>
</tr>
<tr>
<td>4</td>
<td>Stupor and coma</td>
<td>Oculocephalic reflex, unresponsiveness to noxious stimuli</td>
</tr>
</tbody>
</table>
Hepatic Encephalopathy
See Failure, Hepatic

**Encephalopathy (acute)** G93.40
- acute necrotizing hemorrhagic G04.30
- postimmunization G04.32
- postinfectious G04.31
- specified NEC G04.39
- alcoholic G31.2
- anoxic - see Damage, brain, anoxic
- arteriosclerotic I67.2
- centrolobar progressive (Schilder) G37.0
- congenital Q07.9
- degenerative, in specified disease NEC G32.89
- demyelinating callosal G37.1
- due to
  - drugs - see also Table of Drugs and Chemicals G92
  - hepatic - see Failure, hepatic
  - hyperbilirubinemic, newborn P57.9
  - due to isoimmunization (conditions in P55) P57.0
  - hypertensive I67.4

**Failure**
- hepatic K72.90
  - with coma K72.91
  - acute or subacute K72.00
    - with coma K72.01
    - due to drugs K71.10
    - with coma K71.11
  - alcoholic (acute) (chronic) (subacute) K70.40
    - with coma K70.41
    - chronic K72.10
    - with coma K72.11
    - due to drugs (acute) (subacute) (chronic) K71.10
      - with coma K71.11
  - due to drugs (acute) (subacute) (chronic) K71.10
    - with coma K71.11
  - postprocedural K91.82

**RED** = **MCC**
Hepatic Failure

• Definition
  – Hepatic encephalopathy – essential element
    • ICD-10-CM classifies the term “hepatic encephalopathy” as “hepatic failure”
    • Prolonged PT (INR ≥1.5) may be present
      – Documenting a coagulopathy adds additional weight

• Acuity
  – Hyperacute (<7 days)
    • More likely to develop cerebral edema
  – Acute (7 to 21 days)
  – Subacute (>21 days and <26 weeks)
    • Less likely to develop cerebral edema (but still possible)
  – Chronic (> 26 weeks)
Chronic vs. Acute
Differing Definitions – Coding Clinic

• **Question:** *Coding Clinic*, Third Quarter 2008, p. 12, states (that for ICD-9-CM) “decompensated indicates that there has been a flare-up (acute phase) of a chronic condition.”
  – Should this general definition of decompensated be applied when assigning ICD-10-CM codes as well?
  – For example, what is the appropriate ICD-10-CM code assignment for a diagnosis of chronic systolic heart failure, currently decompensated?

• **Answer:** Assign code I50.23, Acute on chronic systolic heart failure, for decompensated systolic heart failure.
  – As previously stated, “decompensated” indicates that there has been a flare-up (acute phase) of a chronic condition.

*Coding Clinic*, 2nd Quarter, 2013, page 33
(If the index is confusing), A basic rule of coding is that further research is done if the title of the code suggested by the index clearly does not identify the condition correctly.

– Coding Clinic, Second Quarter 1991 Page: 20
– Coding Clinic, Third Quarter 2004 Page: 5 to 6
– Coding Clinic, First Quarter 2013 Pages: 13-14
The most widely accepted definition of ALF includes evidence of coagulation abnormality, usually an International Normalized Ratio (INR) ≥1.5, and any degree of mental alteration (encephalopathy) in a patient without preexisting cirrhosis and with an illness of <26 weeks’ duration.

The speaker does not believe that a “decompensation” of chronic hepatic encephalopathy in the setting of chronic cirrhosis should be considered as “acute hepatic failure” unless the clinical circumstances justify a new injury to the liver (e.g. Tylenol overdose, new acute hepatitis B).
“Shock Liver”
Transaminases > 1000

- **Question:** A patient was admitted to our facility with acute on chronic systolic heart failure and found to be in cardiogenic shock with acute renal failure and acidosis. The physician documented that the patient had “shock liver” as well. What is the correct diagnosis code for shock liver in ICD–10-CM?

- **Answer:** Assign code K72.0-, Acute and subacute hepatic failure, for shock liver. The assignment of the fifth digit would be dependent on the presence or absence of coma.

Coding Clinic, 2nd Quarter, 2014, page 13

No code in ICD-10-CM for “acute ischemic hepatitis”
• **Question:** We were given advice to assign a code for “hepatic failure with hepatic coma” anytime “hepatic encephalopathy” is documented. Is this correct?

• **Answer:** Hepatic encephalopathy is not synonymous with hepatic coma.
  
  – The appropriate code assignment for hepatic encephalopathy would depend on the underlying cause.
  
  – When coding hepatic encephalopathy, it is the physician’s responsibility to document whether or not the patient has hepatic encephalopathy “with” coma.
Hepatic Encephalopathy Coding Clinic, 2Q, 2016, p. 35

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Hypertensive Encephalopathy

- Hypertensive encephalopathy is the term applied to a relatively rapidly evolving syndrome of severe hypertension in association with headache, nausea and vomiting, visual disturbances, confusion, and—in advanced cases—stupor and coma
  - Multiple seizures are frequent and may be more marked on one side of the body
  - Diffuse cerebral disturbance may be accompanied by focal or lateralizing neurologic signs, either transitory or lasting, which should suggest cerebral hemorrhage or infarction, i.e., the more common cerebrovascular complications of severe chronic hypertension
  - A clustering of multiple microinfarcts and petechial hemorrhages in one region may occasionally result in a mild hemiparesis, aphasic disorder, or rapid failure of vision
- Special characteristics of signal changes in the occipital white matter may occur
  - The terms reversible posterior leukoencephalopathy (RPLE) and posterior or reversible leukoencephalopathy syndrome (PRES)

Posterior Reversible Encephalopathy Syndrome

PRES is characterized by alterations of mental status, posterior predominant radiographic white-matter changes, and, in most cases, reversibility of symptoms and imaging abnormalities with appropriate treatment

- Associated with renal failure, blood pressure fluctuations, sepsis, use of cytotoxic drugs, autoimmune disorders, or pre-eclampsia/eclampsia

The principal imaging methods used to identify PRES are CT and MRI.

The parietal and occipital lobes are the most commonly affected regions of the brain, although edema can extend into the cerebellum and brainstem
**Hypoxemic-Ischemic Encephalopathy**

**Discharge**

### Final Diagnosis:

<table>
<thead>
<tr>
<th>Active Hospital Problems</th>
<th>Date Noted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis</td>
<td></td>
</tr>
<tr>
<td>Developmental concern</td>
<td>10/14/2013</td>
</tr>
<tr>
<td>Term birth of female newborn</td>
<td>09/26/2013</td>
</tr>
<tr>
<td>HIE (hypoxic-ischemic encephalopathy)</td>
<td>09/26/2013</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Resolved Hospital Problems</th>
<th>Date Noted</th>
<th>Date Resolved</th>
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<tbody>
<tr>
<td>Diagnosis</td>
<td></td>
<td></td>
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<tr>
<td>Atelectasis</td>
<td>10/03/2013</td>
<td>10/13/2013</td>
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<tr>
<td>Hypoxemia requiring supplemental oxygen</td>
<td>10/03/2013</td>
<td>10/13/2013</td>
</tr>
<tr>
<td>Feeding problems in newborn</td>
<td>09/29/2013</td>
<td>10/14/2013</td>
</tr>
<tr>
<td>Hypertonia</td>
<td>09/27/2013</td>
<td>10/03/2013</td>
</tr>
<tr>
<td>Need for observation and evaluation of newborn for sepsis</td>
<td>09/26/2013</td>
<td>10/03/2013</td>
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<tr>
<td>Hyperglycemia</td>
<td>09/26/2013</td>
<td>09/29/2013</td>
</tr>
<tr>
<td>Metabolic acidosis</td>
<td>09/26/2013</td>
<td>09/29/2013</td>
</tr>
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</table>
Hypoxemic-Ischemic Encephalopathy

<table>
<thead>
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<th>Code</th>
<th>Title</th>
<th>SOI</th>
<th>ROM</th>
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</thead>
<tbody>
<tr>
<td>P9160</td>
<td>Hypoxic ischemic encephalopathy [HIE], unspecified</td>
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<td>1</td>
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<tr>
<td>P9161</td>
<td>Mild hypoxic ischemic encephalopathy [HIE]</td>
<td>2</td>
<td>1</td>
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<tr>
<td>P9162</td>
<td>Moderate hypoxic ischemic encephalopathy [HIE]</td>
<td>3</td>
<td>2</td>
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<tr>
<td>P9163</td>
<td>Severe hypoxic ischemic encephalopathy [HIE]</td>
<td>4</td>
<td>3</td>
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<tr>
<td>P918</td>
<td>Other specified disturbances of cerebral status of newborn</td>
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</tbody>
</table>

• ICD-10 categorizes HIE by severity
  – Moderate and severe HIE have higher severity and risk than HIE not otherwise specified
  – The term “neonatal encephalopathy” not otherwise specified is not weighted
Sarnet Classification of HIE

<table>
<thead>
<tr>
<th>SARNET HIE Classification</th>
<th>Grade I mild</th>
<th>Grade II moderate</th>
<th>Grade III severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alertness</td>
<td>Hyperalert</td>
<td>Lethargy</td>
<td>Coma</td>
</tr>
<tr>
<td>Muscle tone</td>
<td>Normal or increased</td>
<td>Hypotonic</td>
<td>Flaccid</td>
</tr>
<tr>
<td>Seizures</td>
<td>None</td>
<td>Frequent</td>
<td>Uncommon</td>
</tr>
<tr>
<td>Pupils</td>
<td>Dilated, reactive</td>
<td>Small, reactive</td>
<td>Variable, fixed</td>
</tr>
<tr>
<td>Respiration</td>
<td>Regular</td>
<td>Periodic</td>
<td>Apnoeic</td>
</tr>
<tr>
<td>Duration</td>
<td>&lt;24h</td>
<td>2 - 14 days</td>
<td>Weeks</td>
</tr>
</tbody>
</table>

- Described as having “hypertonia”
- No seizures during admission
- Was apneic upon transfer to TCH
- Ventilated for over 96 hours at TCH while on hypothermia protocol
- **Physician specificity of the HIE severity needed for proper coding**
Thank you. Questions?