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.

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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

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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

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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

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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).

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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)

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"Behavioral Disturbance" with 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

F01.51 Vascular dementia with behavioral disturbance
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)

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

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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)

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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

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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

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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

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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.

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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.-)

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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.

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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)

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Variations of Altered Mental Status

Variations of "Altered Mental Status"

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- Sources for definitions of the more specific terms:
  - DSM-V
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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**

ICD-10 requires providers to determine the underlying cause of delirium and dementia

These cannot be coded unless documented

- 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**

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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

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Arboviruses Causing Encephalitis In the United States

Table 1. Arboviruses That Cause Encephalitis in the United States.*

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

* Data are from Tunkel et al.[4] and Salimi et al.[5]

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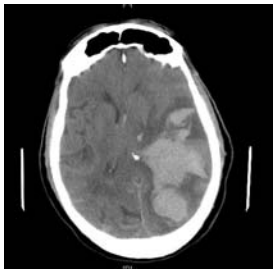
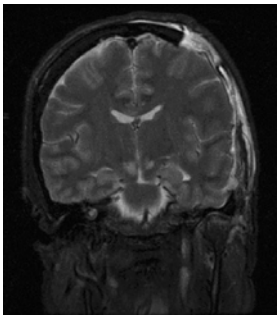
Cerebral Edema – MCC
Cerebral Herniation – MCC

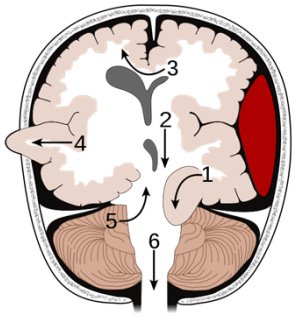
- Decadron treats the edema, not the malignancy
- Note any cerebral herniation or compression



http://en.wikipedia.org/wiki/File:Subfalcine-herniation-001.jpg



http://en.wikipedia.org/wiki/File:Brain_herniation_MRI.jpg



http://commons.wikimedia.org/wiki/File:Brain_herniation_types-2.svg

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CC, 1st Quarter 2010, p. 8
Cerebral Edema Due to Stroke

- **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

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Coding Clinic, 3rd Q 2011, p. 11 "Midline Shift"

- **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.

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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?

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AHA/ASA Scientific Statement

(*Stroke*. 2009;40:2276-2293.)

Definition and Evaluation of Transient Ischemic Attack

A Scientific Statement for Healthcare Professionals From the American Heart Association/American Stroke Association Stroke Council; Council on Cardiovascular Surgery and Anesthesia; Council on Cardiovascular Radiology and Intervention; Council on Cardiovascular Nursing; and the Interdisciplinary Council on Peripheral Vascular Disease

The American Academy of Neurology affirms the value of this statement as an educational tool for neurologists.

- **"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

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TIA Symptoms

acdis

- 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

Symptoms should be reasonably specific for transient ischemic attack or stroke, not "giddiness" or "altered mental status"

Important to localize cerebral versus brain stem ischemia

Source: American College of Physicians. Annals of Internal Medicine *January 3, 2011, Vol. 154 No. 1 ITC1-1.*

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Reason for Elimination of 24-Hour Rule for TIA

2280 Stroke June 2009

Table 3. Frequency of DWI Abnormality in Patients With Transient Neurological Episodes of Different Durations: Pooled Data From 10 MRI Studies Enrolling 818 Patients[45]

Duration of Symptoms, h	DWI Hyperintensity
0–1	33.6
1–2	29.5
2–3	39.5
3–6	30.0
6–12	51.1
12–18	50.0
18–24	49.5

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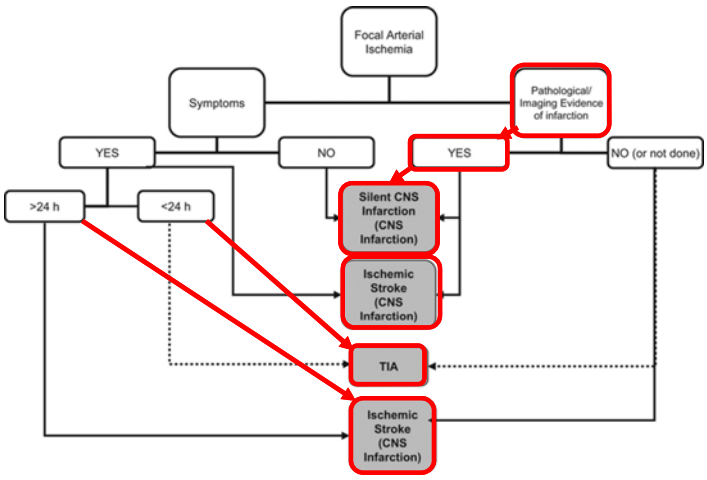
Stroke Differentiation From TIA



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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

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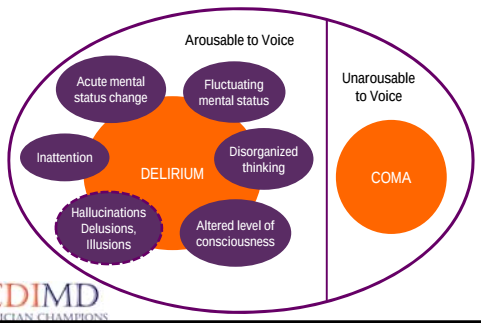
Delirium - Manifestation
Encephalopathy – Underlying Cause

- 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. behaviorial disturbance with Alzheimer's Disease), then the term "encephalopathy" alone is integral to that disease
    - Exacerbation of a neurodegenerative condition is NOT an encephalopathy

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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 isoimmunization (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

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(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

A MCC In 2018

G94 Other disorders of brain in diseases classified elsewhere

NOT A MCC

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)

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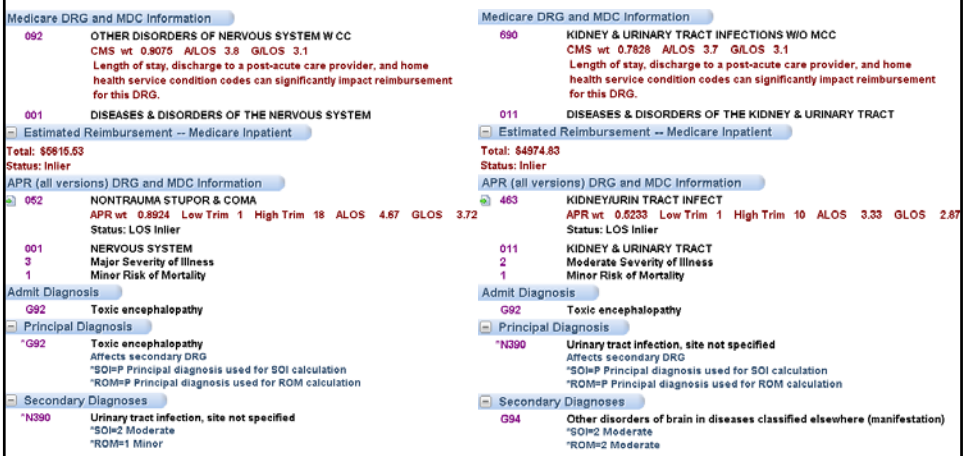
Encephalopathy (w/ & w/o Adjective) Due to UTI



Medicare DRG and MDC Information
092 OTHER DISORDERS OF NERVOUS SYSTEM W CC
CMS wt 0.9075 ALOS 3.8 GLOS 3.1
Length of stay, discharge to a post-acute care provider, and home health service condition codes can significantly impact reimbursement for this DRG.
001 DISEASES & DISORDERS OF THE NERVOUS SYSTEM
Estimated Reimbursement -- Medicare Inpatient
Total: $5815.53
Status: Inlier
APR (all versions) DRG and MDC Information
052 NONTRAUMA STUPOR & COMA
APR wt 0.8924 Low Trim 1 High Trim 18 ALOS 4.67 GLOS 3.72
Status: LOS Inlier
001 NERVOUS SYSTEM
3 Major Severity of Illness
1 Minor Risk of Mortality
Admit Diagnosis
G92 Toxic encephalopathy
Principal Diagnosis
*G92 Toxic encephalopathy
Affects secondary DRG
*SOI=P Principal diagnosis used for SOI calculation
*ROM=P Principal diagnosis used for ROM calculation
Secondary Diagnoses
*N390 Urinary tract infection, site not specified
*SOI=2 Moderate
*ROM=1 Minor

Medicare DRG and MDC Information
690 KIDNEY & URINARY TRACT INFECTIONS W/O MCC
CMS wt 0.7828 ALOS 3.7 GLOS 3.1
Length of stay, discharge to a post-acute care provider, and home health service condition codes can significantly impact reimbursement for this DRG.
011 DISEASES & DISORDERS OF THE KIDNEY & URINARY TRACT
Estimated Reimbursement -- Medicare Inpatient
Total: $4974.83
Status: Inlier
APR (all versions) DRG and MDC Information
463 KIDNEY/URIN TRACT INFECT
APR wt 0.6233 Low Trim 1 High Trim 10 ALOS 3.33 GLOS 2.87
Status: LOS Inlier
011 KIDNEY & URINARY TRACT
2 Moderate Severity of Illness
1 Minor Risk of Mortality
Admit Diagnosis
G92 Toxic encephalopathy
Principal Diagnosis
*N390 Urinary tract infection, site not specified
Affects secondary DRG
*SOI=P Principal diagnosis used for SOI calculation
*ROM=P Principal diagnosis used for ROM calculation
Secondary Diagnoses
G94 Other disorders of brain in diseases classified elsewhere (manifestation)
*SOI=2 Moderate
*ROM=2 Moderate

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

(Acute) Encephalopathy due to UTI
N390 – UTI as PDx

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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]

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Encephalopathy
2019 IPPS Proposal

- 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.

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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 reason, 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.

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PHYSICIAN CHAMPIONS

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acdis

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]

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Static Encephalopathy

acdis

CC: Vomiting associated symptoms pertinent negatives: no abdominal pain, no chest pain, no diarrhea and no fever.

9 yo male **with static encephalopathy, cerebral palsy,** s/p gastrostomy and Hx GI bleeds (thought to be secondary to gastritis and esophageal candidiasis) presenting with 6 episodes of hematemesis (black in color) since last night. No fever/diarrhea/recent illnesses/change in UOP. Has been on prevacid 15mg BID with no NSAIDS/Aspirin ingestions. Last admitted on protonix drip in July.

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."

Ferry FC. Static Encephalopathies of Infancy and Childhood *Am J Dis Child.* 1993;147(6):696.

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.

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Cerebral Palsy

ICD-10 Code	Description	2015 HCC#	2015 CM RW	2015 IN RW	AHRQ PSI	MS-DRG MCC/CC	MS-DRG HAC	APR-DRG SOI	APR-DRG ROM
G800	**Spastic quadriplegic cerebral palsy**	**74**	**0.046**	**-**		**MCC**		**2**	**1**
G801	Spastic diplegic cerebral palsy	74	0.046	-		CC		1	1
G802	Spastic hemiplegic cerebral palsy	74	0.046	-		CC		1	1
G803	Athetoid cerebral palsy	74	0.046	-		CC		2	1
G804	Ataxic cerebral palsy	74	0.046	-				1	1
G808	**Other cerebral palsy**	**74**	**0.046**	**-**				**1**	**1**
G809	Cerebral palsy, unspecified	74	0.046	-				1	1

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"

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MedPar #	Hospital Name	City	ST	G93.40 as SDx in DRG w/MCC (%)
450102	MOTHER FRANCES HOSPITAL	Tyler	TX	18.82
450021	BAYLOR UNIVERSITY MEDICAL CENTER	Dallas	TX	17.79
450462	TEXAS HEALTH PRESBYTERIAN HOSPITAL DALLAS	Dallas	TX	15.80
450037	GOOD SHEPHERD MEDICAL CENTER	Longview	TX	13.94
450101	HILLCREST BAPTIST MEDICAL CENTER	Waco	TX	12.14
450766	UT SOUTHWESTERN UNIVERSITY HOSPITAL-ZALE LIPSHY	Dallas	TX	11.85
450039	JPS HEALTH NETWORK	Fort Worth	TX	11.09
450135	TEXAS HEALTH HARRIS METHODIST FORT WORTH	Fort Worth	TX	10.54
450617	CLEAR LAKE REGIONAL MEDICAL CENTER	Webster	TX	9.72
450083	EAST TEXAS MEDICAL CENTER	Tyler	TX	9.63
450563	BAYLOR SCOTT & WHITE MEDICAL CENTER GRAPEVINE	Grapevine	TX	8.93
450034	CHRISTUS SOUTHEAST TEXAS- ST ELIZABETH	Beaumont	TX	8.88
450844	METHODIST WILLOWBROOK HOSPITAL	Houston	TX	8.88
450647	MEDICAL CITY DALLAS HOSPITAL	Dallas	TX	8.48
450771	TEXAS HEALTH PRESBYTERIAN HOSPITAL PLANO	Plano	TX	8.34
450011	ST JOSEPH REGIONAL HEALTH CENTER	Bryan	TX	8.19

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Coding Clinic, 2nd Q, 2017, pp 8-9

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

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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***

MS-DRG MCC
APR-DRG
- SOI – 3 of 4
- ROM – 3 of 4

HCC
- No relative weight

Reference: UpToDate. http://www.tinyurl.com/toxicmetabolicencephalopathy

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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 isoimmunization (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

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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

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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

G92 Toxic encephalopathy
Toxic encephalitis
Toxic metabolic encephalopathy
Code first (T51-T65) to identify toxic agent

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

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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

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Alcohol Poisoning

National Institute on Alcohol Abuse and Alcoholism

NIH…Turning Discovery Into Health®

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Home » Publications » Brochures and Fact Sheets » Alcohol Overdose: The Dangers of Drinking Too Much

Alcohol Overdose: The Dangers of Drinking Too Much

Print version

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 5 drinks at one time.[1] 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 impairs 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

Identifying Alcohol Poisoning

Critical Signs and Symptoms of Alcohol Poisoning

- 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

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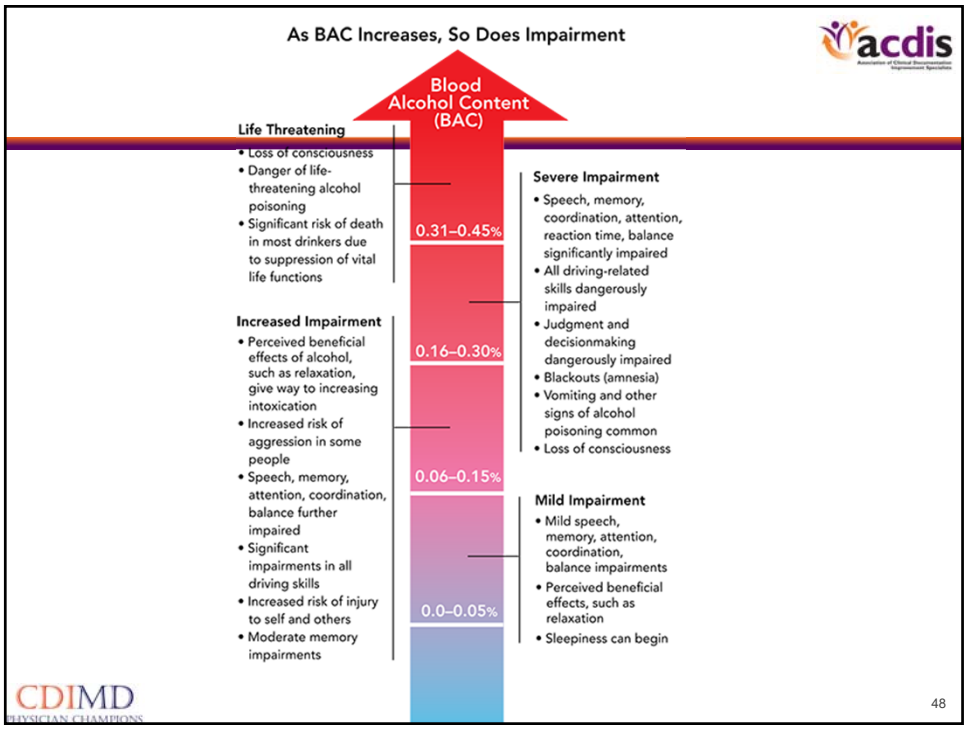

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Coding Clinic Advice
Toxic Encephalopathy 2º Lithium OD

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

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Coding Clinic Advice
Toxic Encephalopathy 2º Cipro

- **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

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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

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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

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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

Ropper AH, Samuels MA, Klein JP. Ropper A.H., Samuels M.A., Klein J.P. Ropper, Allan H., et al.Chapter 40. The Acquired Metabolic Disorders of the Nervous System. In: Ropper AH, Samuels MA, Klein JP. Ropper A.H., Samuels M.A., Klein J.P. Eds. Allan H. Ropper, et al.eds. *Adams & Victor's Principles of Neurology, 10e.* New York, NY: McGraw-Hill; 2014.

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Metabolic Encephalopathy Coding Clinic 3rd Quarter 2015

- **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.

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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.

Coding Clinic, 3rd Quarter, 2016, page 42

Recent Clarification

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 nondiabetic 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.

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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)**

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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**

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

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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

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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)

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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

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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

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AASLD Position Paper Acute Liver Failure

POSITION PAPER

AASLD Position Paper: The Management of Acute Liver Failure: Update 2011

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)

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"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"

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Hepatic Encephalopathy Coding Clinic, 2Q, 2016, p. 35

- **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.

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Hepatic Encephalopathy
Coding Clinic, 2Q, 2016, p. 35

- **Question:** We were given advice to assign a code for "hepatic failure with hepatic coma" anytime "hepatic encephalopathy" is documented. Is this correct?
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  - When coding hepatic encephalopathy, it is the physician's responsibility to document whether or not the patient has hepatic encephalopathy "with" coma.

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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)

***Adams and Victor's Principles of Neurology*, 9th Edition, 2009**

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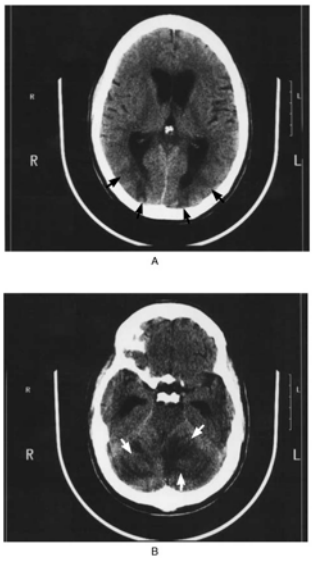
Posterior Reversible Encephalopathy Syndrome

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



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Hypoxemic-Ischemic Encephalopathy

Discharge

Final Diagnosis:

Active Hospital Problems

Diagnosis	Date Noted
• Developmental concern	10/14/2013
• Term birth of female newborn	09/26/2013
• HIE (hypoxic-ischemic encephalopathy)	09/26/2013

Resolved Hospital Problems

Diagnosis	Date Noted	Date Resolved
• Atelectasis	10/03/2013	10/13/2013
• Hypoxemia requiring supplemental oxygen	10/03/2013	10/13/2013
• Feeding problems in newborn	09/29/2013	10/14/2013
• Hypertonia	09/27/2013	10/03/2013
• Need for observation and evaluation of newborn for sepsis	09/26/2013	10/03/2013
• Hyperglycemia	09/26/2013	09/29/2013
• Metabolic acidosis	09/26/2013	09/29/2013

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Hypoxemic-Ischemic Encephalopathy

Code	Title	SOI	ROM
P9160	Hypoxic ischemic encephalopathy [HIE], unspecified	2	1
P9161	Mild hypoxic ischemic encephalopathy [HIE]	2	1
P9162	Moderate hypoxic ischemic encephalopathy [HIE]	3	2
P9163	Severe hypoxic ischemic encephalopathy [HIE]	4	3
P918	Other specified disturbances of cerebral status of newborn	1	1

- 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

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Sarnet Classification of HIE

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

- 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**

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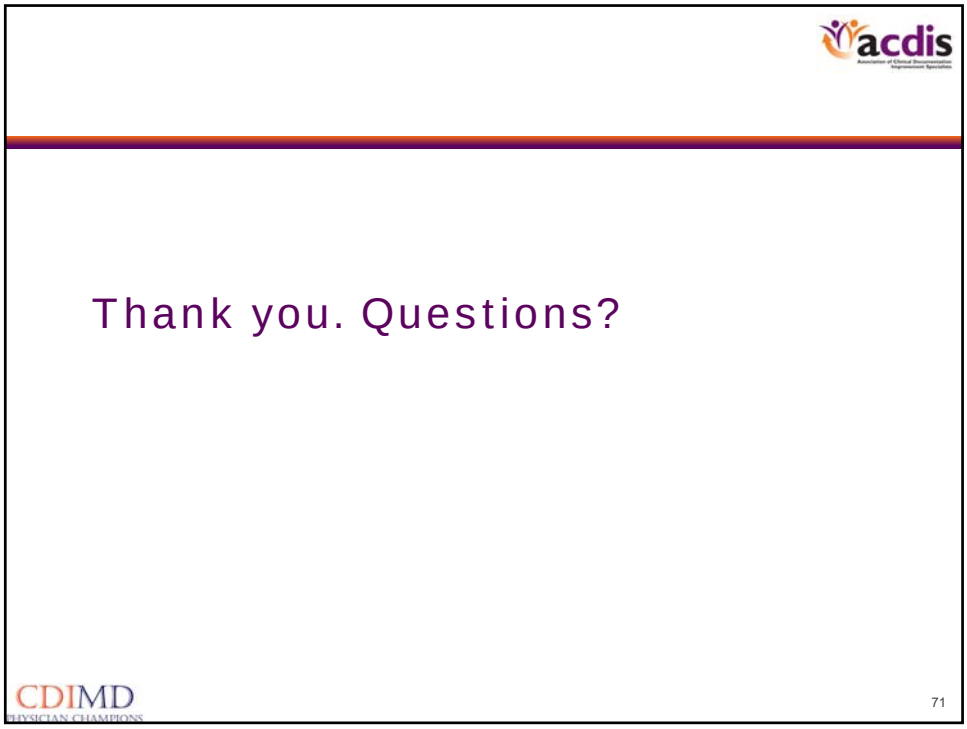
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Thank you. Questions?
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