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CDI IN BLOOM | **acdis 2023**

MAY 8–11, 2023



Neurology CDI Review Tips: Using Your Brain

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Presented By



Cindy Hestir, MSN, RN, CCDS, is a CDI specialist at University of Missouri Healthcare in Columbia, Missouri, has more than 30 years of experience, and has been the CDI lead for the neurology and neurosurgery service line for five years. She is a member of the Missouri state conference planning committee, a past member of the ACDIS Events Committee, and a past ACDIS conference speaker.

Presented By

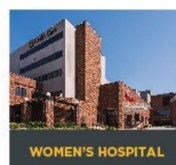
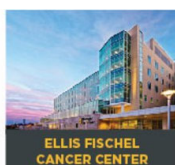
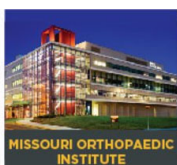


Lorilie A. Parker, RRT, MEd, is a CDI specialist at the University of Missouri Healthcare in Columbia, Missouri. She has 30 years of experience in healthcare, including three years of CDI experience performing chart reviews for quality and financial integrity as well as provider education. She also has 16 years' experience as an associate professor teaching respiratory care at the University of Missouri School of Health Professions and 30 years' experience as an ICU and general care Registered Respiratory Therapist.

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MU Health Care (University of Missouri Health Care) Columbia, Missouri

Level I
STEMI Center
Stroke Center
Trauma Center



MUHealth.org | [Facebook/MUHealthCare](https://www.facebook.com/MUHealthCare) | [Twitter.com/MUHealth](https://twitter.com/MUHealth) | [Instagram.com/MUHealth](https://www.instagram.com/MUHealth)

Medicine.missouri.edu | [Facebook/MissouriMedicine](https://www.facebook.com/MissouriMedicine) | [Twitter.com/MUMedicine](https://twitter.com/MUMedicine)

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MU Health Care

(Based on FY 2022)

312,770
radiological exams + treatments

790,770
clinic visits (all sites)

26,792
patient discharges

25,771
MAJOR
surgical operations

406
PATIENTS
transported
by helicopter

263,116 TOTAL
PATIENTS
 256,144 Missourians
6,972 out-of-state

83,599
ER + trauma visits

2,582,798
lab tests

5,977,241
pharmacy orders

6 HOSPITALS

- Children's Hospital
- Ellis Fischel Cancer Center
- Missouri Orthopaedic Institute
- Missouri Psychiatric Center
- University Hospital
- Women's Hospital



2,280
BIRTHS

6,324 total staff

750 MEDICAL STAFF
5,574 OTHER STAFF

613 BEDS
174 intensive care • 439 acute care

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Learning Outcomes

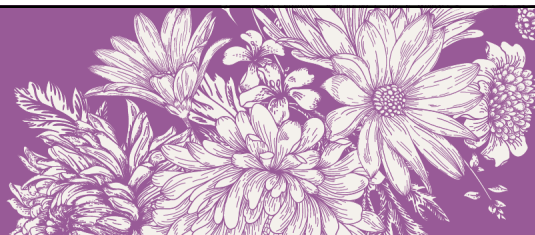
- At the completion of this educational activity, the learner will be able to:
 - Select the optimal principal diagnosis (PDx) for patients presenting with symptoms related to Transient Ischemic Attacks (TIA) and Cerebral Infarcts in 50% of cases reviewed.
 - Identify query opportunities to clarify secondary diagnoses to optimize the severity of illness, mortality indicators and/or diagnostic related group (DRG) in 75% of TIA and cerebral infarct cases reviewed.
 - Describe an educational collaborative with physicians and clinicians to enhance and maintain clinical documentation integrity within the healthcare system.

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Neurology Presentation Agenda

1. Principal diagnosis (PDX)/Optimizing the Diagnostic-Related Group (DRG)
 - Transient Ischemic Attack (TIA)
 - Cerebral Infarct
2. Secondary diagnoses/opportunities
 - CT/MRI reports
 - Echocardiogram reports
 - EKG
 - Physical exam
3. *Coding Clinics*
4. Collaborative education to enhance and maintain clinical documentation integrity within the healthcare system

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The Chart Review for the Neurology Principal Diagnosis (Optimizing the DRG)

- TIA
- Cerebral Infarct

Scenario #1 PDx/Optimize the Neurology DRG: Transient Ischemia Attack (TIA)

Discharge Diagnosis: **TIA**

Where to focus??

- Medications given?
- Procedures performed?

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Scenario #1 (cont.) PDx/Optimize DRG

Discharge summary:

80-year-old male presents with TIA symptoms of left-sided weakness, tPA given, weakness resolved within 10hrs.

Discharge diagnosis: Aborted stroke

Raise-your-hand question:

What would be the principal diagnosis?

- a. TIA
- b. Acute stroke
- c. Query for clarification

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Scenario #1 (cont.):

Answer: **Query for clarification**

- TIAs are brief episodes of neurological dysfunction resulting from focal cerebral ischemia not associated with permanent cerebral infarction.
- TIAs are defined as any focal cerebral ischemic event with symptoms lasting <24 hours.
- TIA with a thrombolytic treatment prevents a stroke; thus, it is coded differently than TIA without thrombolytic treatment.

DRG 069	DRG 063 (62 with CC, 61 with MCC)
Transient Cerebral Ischemic Attack, unspecified	Transient Cerebral Ischemic Attack, unspecified with tPA administration
CMS weight 0.7871	CMS weight 1.7097 (1.9883, 2.8912)

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Scenario #1 (cont.) PDx/Optimize DRG

Risk Factors: 80-year-old male, smoker, history CAD

Clinical findings: Admission note states, "Patient reported left-sided weakness 4 hours prior to arrival to emergency department."

Physical exam on admission: 3/4 left upper arm strength, 3/4 left lower leg strength

Progress note: Weakness resolved within 10 hours of onset

Treatment: tPA

Discharge summary documents aborted stroke

Per review of medical record, patient admitted with aborted stroke, treated with tPA, weakness of left upper and lower leg, which resolved within 10 hours of onset. Based on your medical judgment and above clinical findings, please clarify diagnosis of aborted stroke:

☐ TIA

☐ Acute Stroke

☐ Other, please specify: _____

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Scenario #2 PDx/Optimize Neurology DRG: Hemiplegia/Hemiparesis

- Admit Dx: Hemiparesis 2/2 previous stroke and UTI

Where to focus??

- Medications given?
- Procedures performed?

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Optimize PDx/DRG Scenario #2 (cont.)

76-year-old male PMH: Cerebral infarct. Presents with increase in right sided weakness and UTI treated with Ceftriaxone. Acute infarct ruled out via CT.

Primary diagnoses treated this admission:

- Hemiplegia due to previous stroke
- UTI

Raise-your-hand question:

What would be the principal diagnosis?

- a. Hemiplegia/hemiparesis following cerebral infarction affecting right dominate side
- b. UTI

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PDx/Optimize DRG Scenario #2 (cont.):

Answer: PDX: I69.351, Hemiplegia and hemiparesis following cerebral infarction affecting right dominant side (*Excludes2 note: transient ischemia attack*)

- DRG 057

DRG 057 (056 with MCC)	DRG 690
Degenerative Nervous System Disorders	UTI
CMS weight 1.2675 (2.1953)	CMS weight 0.7940

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Scenario #3 Primary Diagnosis/Optimize Neurology DRG: TIA

Admit Dx: TIA

Where to focus??

- Medications given?
- Procedures performed?

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Scenario #3 (cont.) PDx/Optimize DRG: TIA

8/8 Admit Note: 82-year-old chief complaint: Dizziness, CAD, smoker

8/8 Cerebral angiogram: Right carotid artery stenosis of 80%

8/8 Treatment: Stent to right carotid artery

8/9 Discharge diagnosis documents: TIA

- Discharge summary documents: TIA

Raise-your-hand question:

What would be the principal diagnosis?

- TIA
- Occlusion and Stenosis of Right Carotid Artery
- Query for clarification

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Scenario #3 (cont.) What caused the TIA?

8/8 Admit Note: 82 year old chief complaint: dizziness, CAD, smoker

8/8 Cerebral angiogram: right carotid artery stenosis of 80%

8/8 Treatment : stent to right carotid artery

8/9 Discharge diagnosis documents: TIA

- Discharge summary documents: TIA
- Cerebral angiogram states: Right carotid artery stenosis that was treated with a carotid stent.

Based on these findings, please further clarify the cause of the TIA:

☐ TIA due to or related to right carotid artery stenosis

☐ TIA, cause of unknown

☐ Other, please specify: _____

*Dr. didn't link it
= query*

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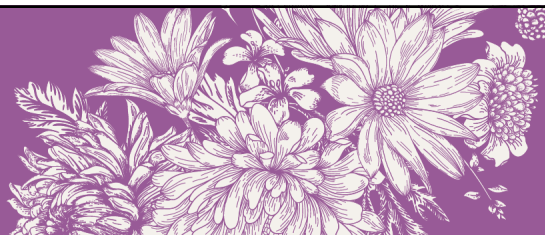
Scenario #3 PDx/Optimize Neurology DRG: TIA?

Querying for a “link” can optimize a DRG!

DRG 069	DRG 068
Transient Ischemia Attack, unspecified	Occlusion and Stenosis of Right Carotid Artery
CMS weight 0.7871	CMS weight 0.8889

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Which Type of Stroke Is It?

Ischemic vs. Hemorrhagic vs. Ischemic With Hemorrhagic Conversion

Cerebral Infarction—Ischemic

- Ischemic stroke occurs when a vessel supplying blood to the brain is obstructed.
- Causes:
 - Thrombosis
 - Embolism
 - Stenosis
 - Occlusion

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Cerebral Infarct—Hemorrhagic

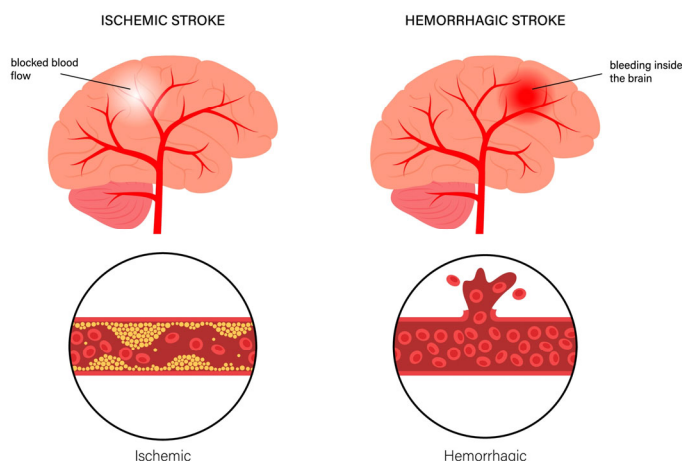
- Hemorrhagic stroke occurs when blood from an artery suddenly begins to bleed in the brain.
- Causes:
 - Ruptured AVM
 - Hypertensive crisis
 - Trauma
 - Tumor
 - Medication (i.e., TPA)

2022 Guideline for Management of Patients with Spontaneous Intracerebral Hemorrhage: A Guideline from the American Heart Association/American Stroke Association; Steven M. Greenberg, Wendy C. Ziai, Charlotte Cordonnier, Dar Dowlatshahi, Brandon Francis, Joshua N. Goldstein, J. Claude Hemphill III, Rhonda Johnson, Kiffon M. Keigher, William J. Mack, J. Mocco, Eileena J. Newton, Ilana M. Ruff, Lauren H. Sansing, Sam Schulman, Magdy H. Selim, Kevin N. Sheth, Nikola Sprigg, ...
Originally published 17 May 2022 <https://doi.org/10.1161/STR0000000000000407> | Stroke.2022;53:e282-e361

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Cerebral Infarction—Ischemic *Turned* Hemorrhagic

Are you looking for it?



Continued evolution of ischemic with hemorrhagic transformation.

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Scenario: Ischemic Stroke Conversion to Intraparenchymal Hemorrhage

Pt transferred from OSH with right-sided weakness.

- Admit Dx: Left MCA ischemic infarction, inferior territory
- Admit Procedure: Emergent thrombectomy
- Head CT Impression: Continued evolution of ischemic changes within the left posterior MCA distribution with hemorrhagic transformation. Minimal right midline shift.

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The Neurology Chart Review for Secondary Diagnoses

Are you paying close attention to assessments and reports requiring a query?

- Physical exams
- EKG/echocardiogram
- Radiology: CT/MRI

CT and Radiology Reports – Watch for Query Opportunities

1. Cerebral edema: Manifested as an area of decreased/low brain density and sometimes described as vasogenic (may not always be clinically significant):
 - Cerebral- see Edema, brain
 - Brain (cytotoxic) (vasogenic) G93.6
2. Brain compression: Imaging studies may show mass effect, midline shift, effacement/compression of ventricles (always clinically significant):
 - Compression/Brain (stem) G93.5
 - **Note: Traumatic brain compression with or without herniation:
 - Traumatic – see also Injury, Intracranial, diffuse S06.A0
 - Traumatic – with Herniation S06.A1

Scenario #4 CT Documentation

Did Dr. say it?



Diagnosis: Traumatic brain injury, traumatic SAH

- Treatment: Mannitol, left frontotemporal craniotomy (skull fracture & evacuation of epidural hematoma)
- CT scan findings:
 - Brain: Increasing size of now 1.8 cm thick left frontal convexity epidural hematoma. Worsening mass effect upon the left frontal lobe with increasing now 0.5 cm left-to-right midline shift. Redemonstration of scattered foci of subarachnoid hemorrhage throughout left cerebral sulci and punctate intraparenchymal hemorrhages in the left temporal lobe and left occipital lobe. Unchanged left lateral cerebral convexity subdural hematoma measuring 0.6 cm in thickness. No ventriculomegaly.
- CT IMPRESSION: Increasing size of now 1.8 cm thick left frontal convexity epidural hematoma with **increasing now 0.5 cm left-to-right midline shift.**

Reminder: No coding from CT or radiology reports directly.
Coding is per primary physician/clinician documentation—with assessment/evaluation, monitoring or treatment.

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Scenario #4 (cont.) Excellent Primary Physician/Clinician Documentation



- Progress note: 08/07/2022: Cranial vault fracture and epidural hematoma with **brain compression (R) which necessitated urgent decompression in OR.**
- Progress Note 08/08/22: Patient remains critically ill due to the following conditions:
 - Moderate TBI complicated by L epidural hematoma necessitated evacuation in the OR, multicompartiment EVD Remains on **osmotherapy for management of brain compression.**

😊 No Query required – Dr. said it in progress notes!😊

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Scenario/Query #5 Echocardiogram Report

Patient admitted with acute cerebral infarct, left vertebral artery atherosclerotic plaque, paroxysmal atrial fibrillation.

7/26/22 echocardiogram findings: A bubble study was performed. There was a right-to-left shunt, at baseline.

Treatment: ASA

— Is query required? If so what?

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Scenario/Query #5 (cont.) Echocardiogram Report

**Never documented in primary physician/clinician notes =
Query required**

8/1/22 progress note documents patient admitted with acute stroke, paroxysmal fibrillation. 7/26/22 echocardiogram findings document right to left shunt. Please provide clinical diagnosis for echocardiogram findings.

☐ Patent Foramen Ovale (PFO)

☐ Other, please specify: _____

Possible CC!

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Watch for Query Opportunities:

CXR:

- Signs of atelectasis?
- Signs of pneumonia?
- Dysphagia? *(Was a swallow study completed?)*

EKG: Arrhythmias

- Atrial fibrillation
- Atrial Flutter
- Bradycardia

Scenario/Query #6 CXR: Is There an Opportunity?

Code stroke called upon arrival to ED for sudden onset of right-sided facial weakness and lethargy, and his LKW was at 1900 on 8/4/2022.

- PMH and medication was initially unknown upon arrival to the ED
- Patient arrived on supplemental oxygen 2/2 desaturating after an episode of vomiting en route, reportedly vomited at home prior to transport per EMS
- Respiratory:
 - COPD, on supp. O₂ @ home
 - On 4L NC currently and satting well
 - Started on Unasyn x 3 days
- CXR:
 1. Right perihilar/lower lobe pneumonia
 2. Right greater than left small-to-moderate pleural effusions and bibasilar subsegmental atelectasis

Scenario/Query #6 (cont.) CXR

Assessment/clinical indicators: Leukocytosis (no cultures)

8/5/22 CXR impression: Right perihilar/lower lobe pneumonia, right greater than left small to moderate pleural effusions and bibasilar subsegmental atelectasis.

8/8/22 death summary documents: Stroke

Risk Factor: Dysphagia, vomited at home prior to transport, desaturating after an episode of vomiting en route

Treatment: Unasyn & oxygen 4 lpm nasal cannula

Patient admitted with stroke; clinical findings on chest x-ray right lower lobe pneumonia. Pt being treated with Unasyn. Please further clarify clinical diagnosis for this finding.

☐ Aspiration Pneumonia

☐ Pneumonia unspecified

☐ Other – please specify _____

Possible MCC!

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Watch for Query Opportunities

Lab Values:

- Sodium level
- Platelet levels
- Creatinine level
- CK levels
- PT/PTT
- HCT/Hgb
- Troponin levels

Medications:

- Tissue Plasminogen Activator (TPA)
- Tenecteplase (TNK)
- Dexamethasone
- Keppra
- Hx of Anticoagulants

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Query Opportunities: Physical Exam

Physical Assessments	Query/Missed Coding Opportunity	Notes (Does your facility/institute have CDI guidelines?)
Respiratory rate, intubated, oxygen requirement, P/F ratio <300	Acute Hypoxic or Hypercapnic Respiratory Failure	Clinical Indicators such as physical exam are needed for the diagnosis (<i>Institutional CDI Guidelines</i>)
Altered Mental Status	Encephalopathy	Physical exam should match diagnosis. Encephalopathy unspecified is a cc. (<i>Institutional CDI Guidelines</i>)
NIHS Score	Code NIHS Score	*Per guidelines GCS and NIHS scores can be coded from nonphysician providers, such as RN *Can affect Mortality Indicators

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Coding Clinics Related to Neurology Reviews

- Hemiplegia
- Encephalopathy
- Vasogenic edema
- Hemorrhagic disorder 2/2 extrinsic anticoagulation therapy

Coding Clinic: Hemiplegia

Hemiplegia whether it resolves, with or without treatment can be coded. G81.___ codes

(Reference: Coding Clinic 2010, First Quarter p. 5)

How should left-sided weakness due to an acute cerebral infarction be coded when there is no specific mention of hemiplegia/hemiparesis?

(Reference: Coding Clinic First Quarter 2015, p. 25-26)

Dr. did not link it ≠ hemiplegia

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Coding Clinic: Encephalopathy

When encephalopathy is attributed to other medical conditions such as a stroke it is appropriate to use the code “encephalopathy (other)” G93.49.

If the provider specifies the type of encephalopathy associated with the CVA/stroke, such as metabolic, then assign a code for the specified type of encephalopathy (i.e., metabolic encephalopathy) and do not assign a code for encephalopathy (other).

(Reference: Coding Clinic, 2nd Quarter 2018, pages 24-25)

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Coding Clinic: Intracerebral Hemorrhage With Vasogenic Edema

- Is it appropriate to code “vasogenic edema” when physician/clinician documents, “ ICH with vasogenic edema”?

Yes, *Cerebral Edema is not considered inherent to ICH!*

- PDx: ICH
- 2ndary Dx: Cerebral Edema

Intracerebral hemorrhage with vasogenic edema
ICD-9-CM Coding Clinic, First Quarter 2010 Page: 8 Effective with discharges: April 1, 2010

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Coding Clinic: D68.32 Hemorrhagic Disorder Due to Extrinsic Circulating Anticoagulants

Any bleeding such as hemoptysis, hematuria, hematemesis due to anti-coagulation therapy, assign code D68.32, Hemorrhagic disorder due to extrinsic circulating anticoagulants.

(Reference: Coding Clinic 1st Quarter, 2016 page 14)

****Query if link is not made between the anticoagulation therapy and hemorrhagic disorder*****

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Sample Query


PHYSICIAN OR CLINICIAN REQUEST FOR ADDITIONAL INFORMATION

Please provide further clarification of information based on documentation located in the Electronic Medical Record

Risk Factors: list antithrombotic meds (does not include ASA)

Assessment/ Clinical Indicators: type of bleed

Treatment/ Monitoring: any reversal meds given

Please select the modify icon , check (X) the box if any of the following are applicable and then sign the note.

Based on the clinical findings above and your medical judgement, please clarify a diagnosis evaluated, assessed, monitored and/or treated, such as:

☐ {insert type of bleed, ie: Subdural hemorrhage, GI etc} enhanced due to {insert extrinsic anticoagulant Rx}

☐ {insert type of bleed, ie: Subdural hemorrhage, GI etc} not related to/ due to {insert extrinsic anticoagulant Rx}

☐ Other please specify

This electronic query and response will be part of the medical record.

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Watch for Neurology Procedures

- Craniotomy
- Ventriculoperitoneal shunt (VP)
- Angioplasty-stent placement
- Stent retriever thrombectomy
- AVM embolization
- Neurostimulator lead placement
- ***Other: implantable loop recorder***



Education & Collaboration

- Stroke coordinator-Certified Comprehensive Stroke Center
- Neurology/neurosurgery mortality rounds
- QI dept-HACs, PSI
- Denials Team
- Utilization Review
- Annual new resident in-services
- Rounding with providers
- CDI availability: webpage/e-mail/TEAMS messaging
- Neurology/neurosurgery quarterly newsletter

Physician/Clinician Education Example:

THE NEUROTRANSMITTER

Documentation

Documentation query notes are sent to your Powerchart Message Center inbox to assure accurate medical documentation and track patient outcomes. To decrease the number of queries asking for CT or MRI findings such as cerebral edema, please include findings such as cerebral edema and brain compression in your medical documentation.



Thank you. Questions?

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In order to receive your continuing education certificate(s) for this program, you must complete the online evaluation. The link can be found in the continuing education section of the program guide.