

AVC e Sequelas

X Congresso AMACC

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Ponta Delgada

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Chapter 9

Diseases of the Circulatory System (I00-I99)

AVC e sequelas



<http://www.estadopb.com/s/noticias/acidente-vascular-cerebral-saiba-como-prevenir-e-tratar/>

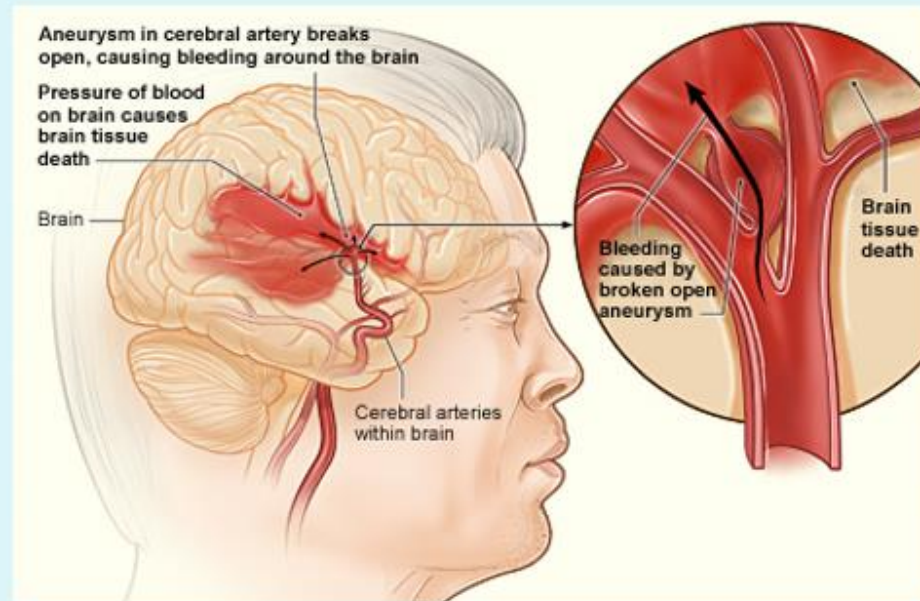
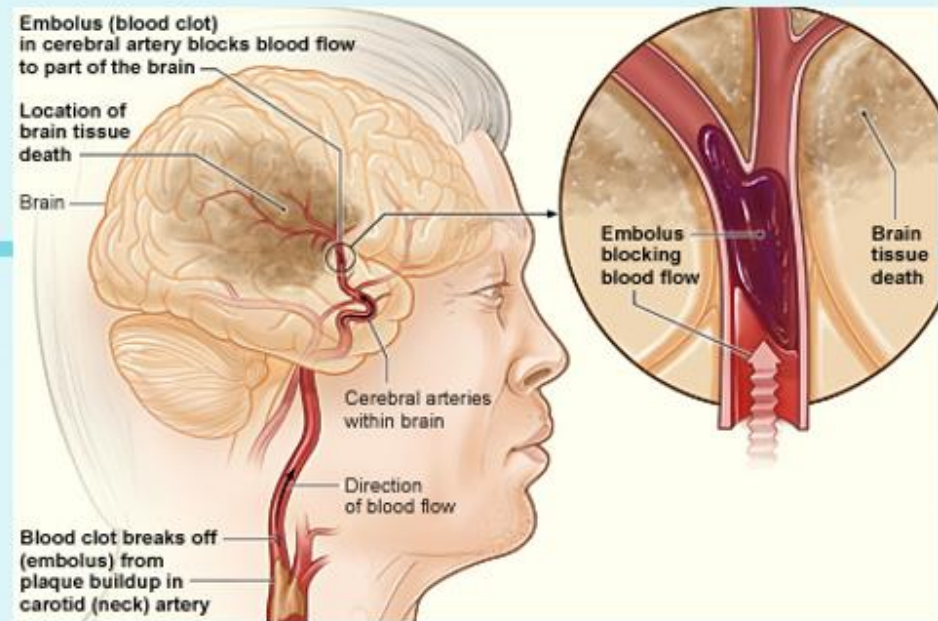
Types of Strokes

Ischemic (80 +%)

- Thrombus (Clot)
- Embolus (MOVING Clot)
- Occlusion
- Stenosis

Hemorrhagic (More Severe)

- Blood vessel in brain leaks or ruptures
- Common types include
 - Intracerebral
 - Subarachnoid
 - Extradural/epidural
 - Subdural hemorrhages



Cerebrovascular diseases (I60-I69)

I60 Nontraumatic subarachnoid **hemorrhage**

I61 Nontraumatic intracerebral **hemorrhage**

I62 Other and unspecified nontraumatic intracranial **hemorrhage**

I63 Cerebral **infarction**

I65 **Occlusion** and **stenosis** of precerebral arteries, not resulting in cerebral infarction

I66 **Occlusion** and **stenosis** of cerebral arteries, not resulting in cerebral infarction

I67 Other cerebrovascular diseases

I68 Cerebrovascular disorders in diseases classified elsewhere

I69 **Sequelae** of cerebrovascular disease

Registos clínicos

- O primeiro problema na codificação dos AVC é a documentação clínica.
- Não é indiferente escrever AVC, enfarte (isquémico), hemorragia, trombose, ...
- O diagnóstico preciso pode não ser fácil para o clínico a partir da imagiologia
- O codificador pode juntar informações separadas e especificar melhor o diagnóstico:
 - “AVC” ... “submetido a trombólise”
 - “AVC” ... “provavelmente cardioembólico”
 - “AVC” ... “oclusão da ACM” ...

Classificação dos AVC

- O “enfarte isquémico” é codificado como enfarte não especificado – I63.9
- Os AVC **hemorrágicos** estão claramente separados dos **enfartes** cerebrais.
- A ICD-10-CM contempla detalhadamente os vasos cerebrais implicados no AVC mas essa informação nem sempre é registada nos diagnósticos clínicos, apesar de ser apontada nos relatórios de imagiologia.

AVC (Stroke)

Stroke (ischemic) (embolic) (thrombotic) I63.9

meaning

cerebral hemorrhage – *code to* Hemorrhage, intracranial

cerebral infarction – *code to* Infarction, cerebral

Hemorrhage

intracranial (nontraumatic) I62.9

Infarction

cerebral I63.9

**I62.9 Nontraumatic intracranial hemorrhage,
unspecified**

I63.9 Cerebral infarction, unspecified

Hemorragia subaracnoideia (HSA)

I60 Nontraumatic subarachnoid hemorrhage

I60.0- ... from **carotid** siphon and bifurcation

I60.1- ... from **middle** cerebral artery

I60.2 ... from **anterior** communicating artery

I60.3- ... from **posterior** communicating artery

I60.4 ... from **basilar** artery

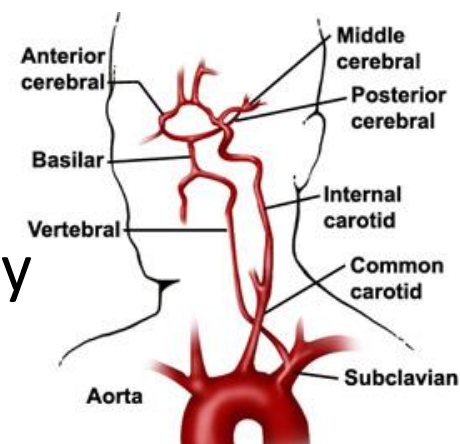
I60.5- ... from **vertebral** artery

I60.6 ... from **other** intracranial arteries

I60.7 ... from **unspecified** intracranial artery

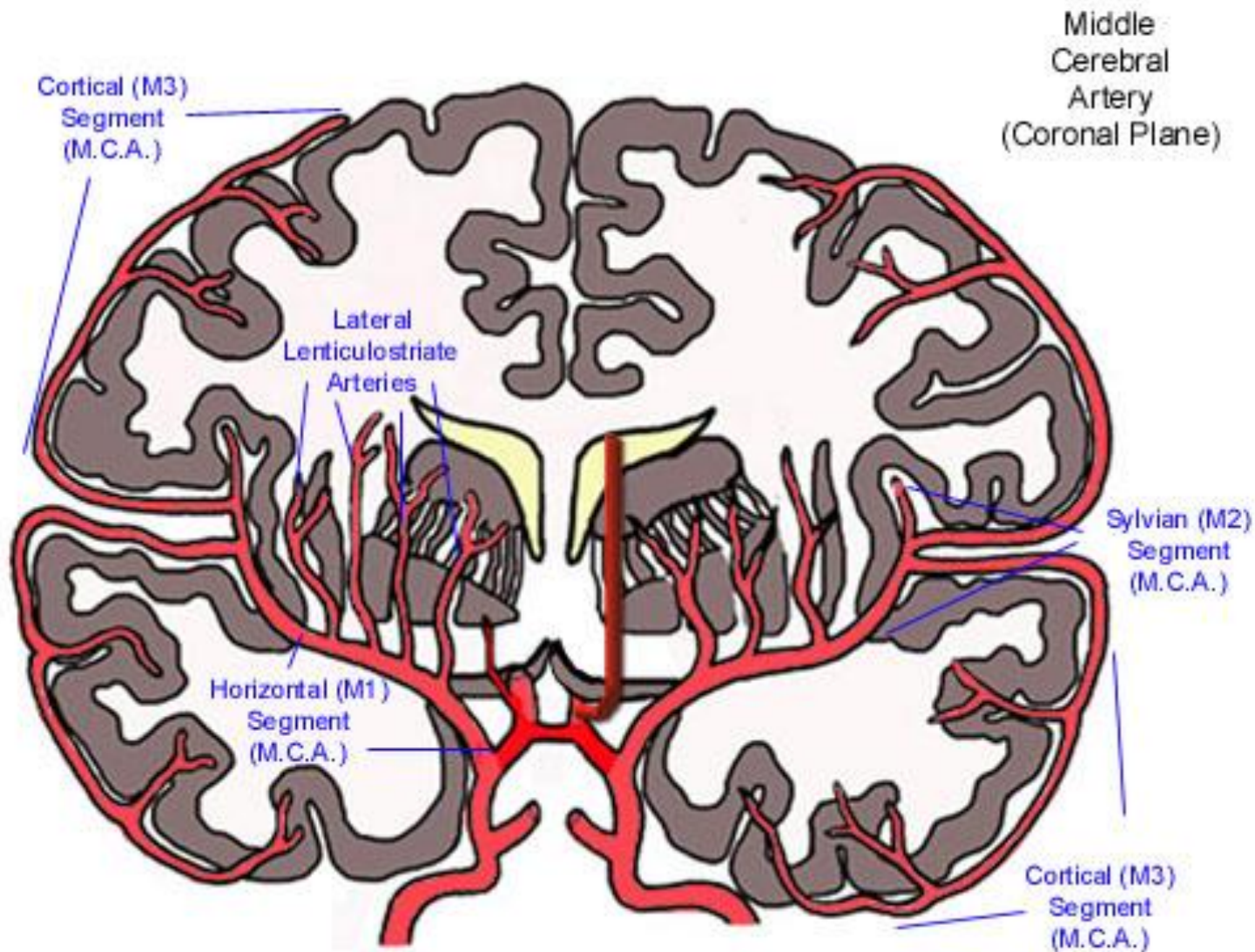
I60.8 **Other** nontraumatic subarachnoid hemorrhage

I60.9 ... unspecified



+ direita, esquerda, ou não especificada

Artéria Cerebral Média



Hemorragia intracerebral

I61 Nontraumatic intracerebral hemorrhage

I61.0 ... in **hemisphere**, subcortical

I61.1 ... in **hemisphere**, cortical

I61.2 ... in **hemisphere**, unspecified

I61.3 ... in **brain stem**

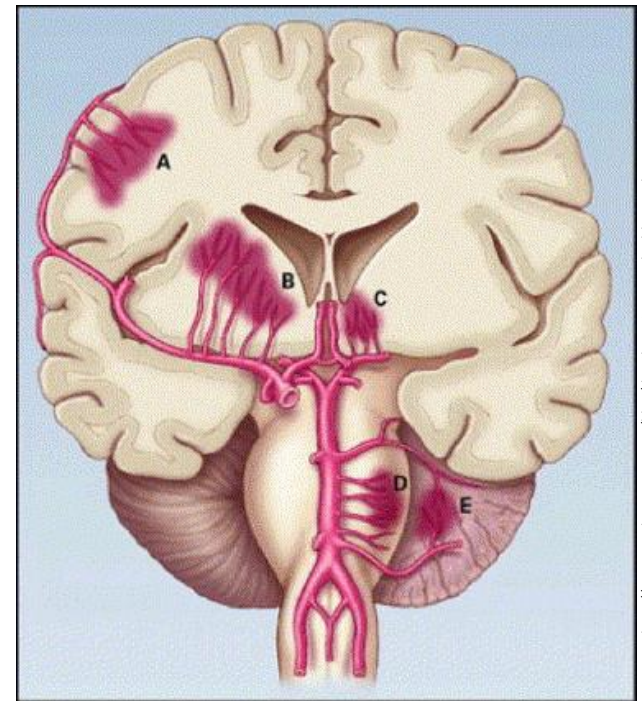
I61.4 ... in **cerebellum**

I61.5 ... **intraventricular**

I61.6 ... **multiple** localized

I61.8 Other nontraumatic intracerebral hemorrhage

I61.9 ... unspecified



Outras hemorragias intracranianas

I62 Other and unspecified nontraumatic intracranial hemorrhage

I62.0 ... **subdural** hemorrhage

I62.00 ... **subdural** hemorrhage, unspecified

I62.01 ... **acute subdural** hemorrhage

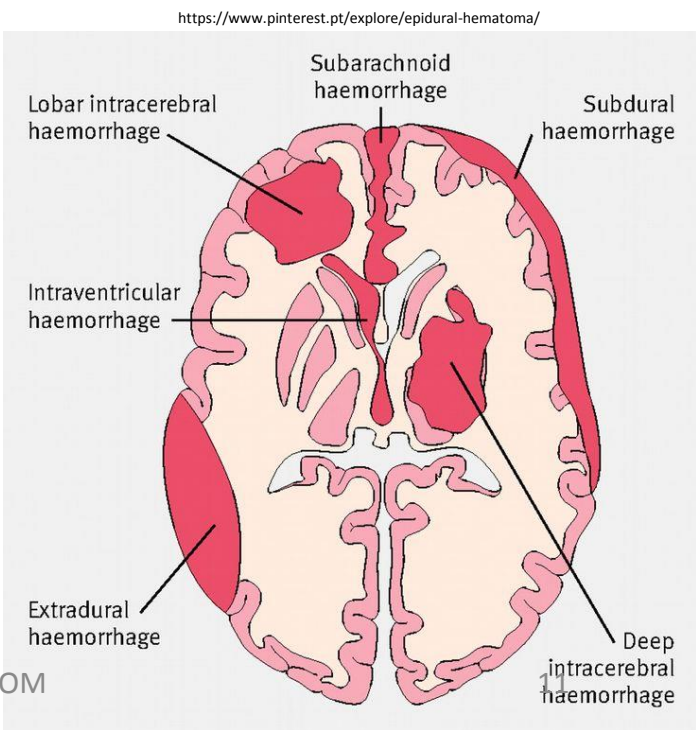
I62.02 ... **subacute subdural** hemorrhage

I62.03 ... **chronic subdural** hemorrhage

I62.1 ... **extradural** hemorrhage

... **epidural** hemorrhage

I62.9 ... intracranial hemorrhage,
unspecified



Enfarte cerebral

I63 Cerebral infarction

I63.0 ... due to **thrombosis** of **precerebral** arteries

I63.1 ... due to **embolism** of **precerebral** arteries

I63.2 ... due to **unspecified** occlusion or stenosis of **precerebral** arteries

I63.3 ... due to **thrombosis** of **cerebral** arteries

I63.4 ... due to **embolism** of **cerebral** arteries

I63.5 ... due to **unspecified** occlusion or stenosis of **cerebral** arteries

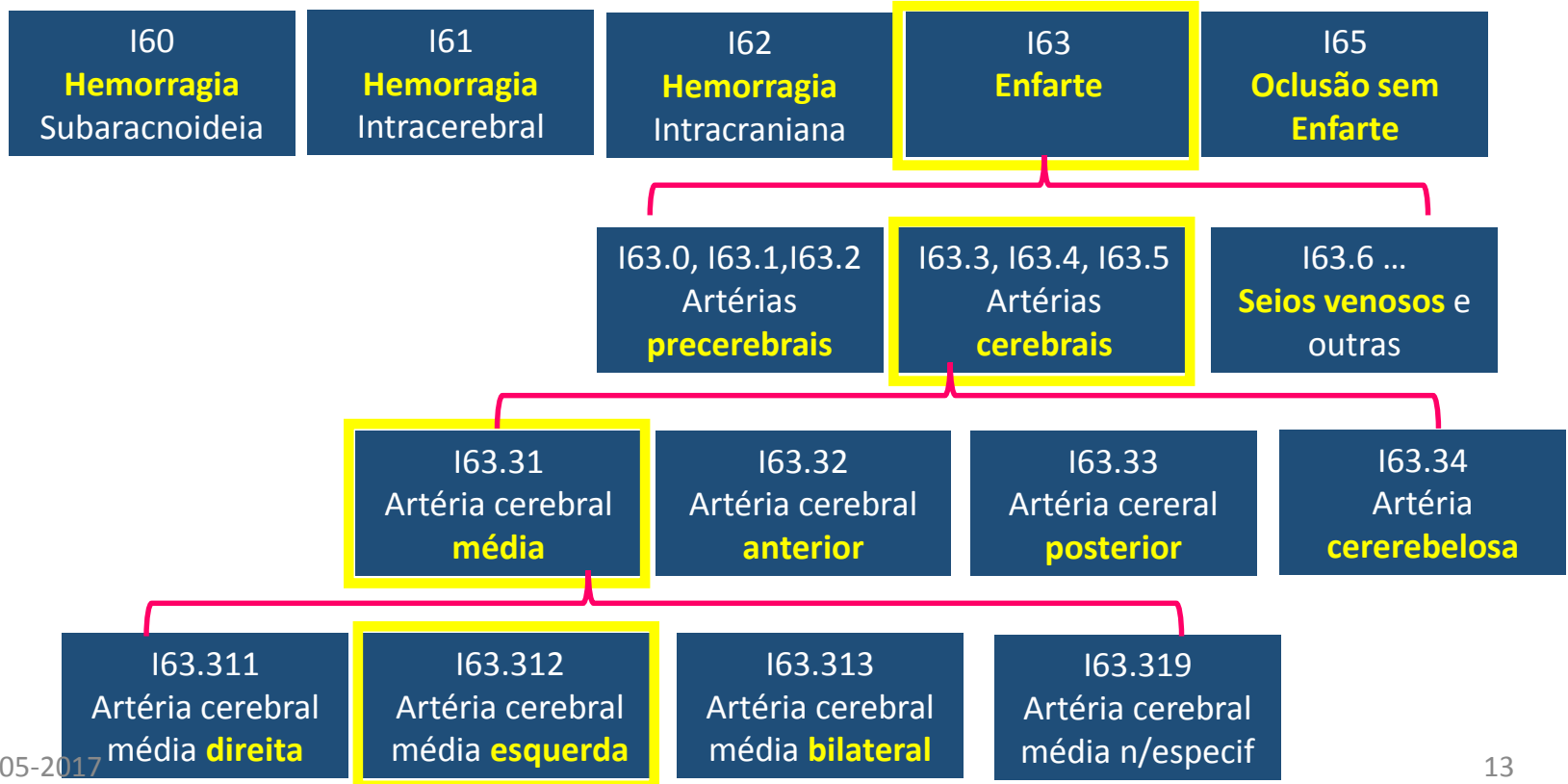
I63.6 ... due to **cerebral venous thrombosis**, nonpyogenic

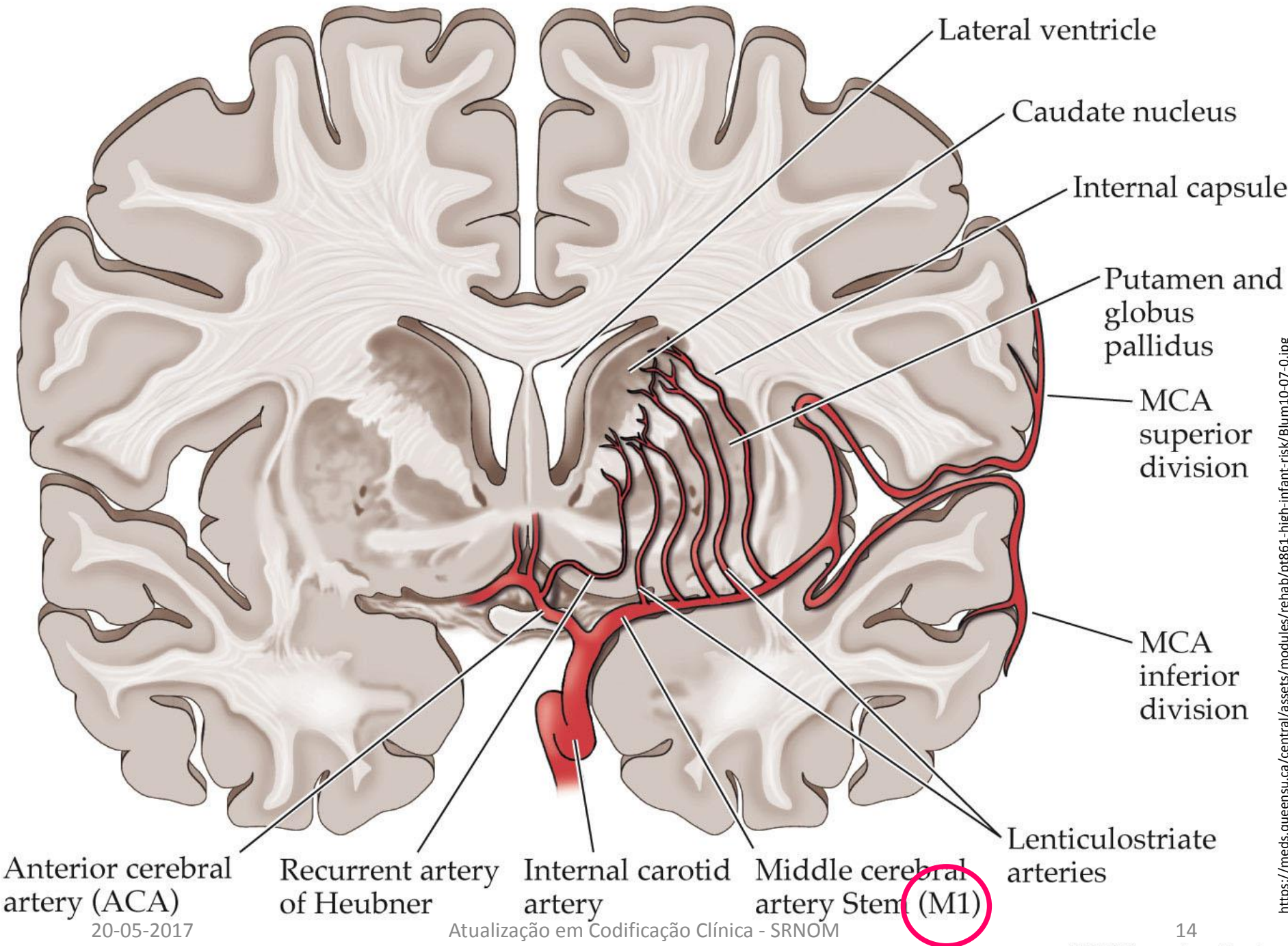
I63.8 Other cerebral infarction

I63.9 Cerebral infarction, unspecified

AVC isquêmico em território da ACME com trombo documentado em M1/M2, submetido a trombectomia

- O AVC é descrito como isquêmico mas a informação de trombose especifica-o. A localização na artéria cerebral média esquerda especifica ainda mais a situação:





Lateral ventricle

Caudate nucleus

Internal capsule

Putamen and globus pallidus

MCA superior division

MCA inferior division

Lenticulostriate arteries

Anterior cerebral artery (ACA)

Recurrent artery of Heubner

Internal carotid artery

Middle cerebral artery Stem (M1)

20-05-2017

Atualização em Codificação Clínica - SRNOM

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<https://meds.queensu.ca/central/assets/modules/rehab/pt861-high-infant-risk/Blum10-07-0.jpg>

I65 Occlusion and stenosis of **precerebral arteries**, **not resulting in cerebral infarction**

I65.0 Occlusion and stenosis of vertebral artery

- I65.01 ... of right vertebral artery
- I65.02 ... of left vertebral artery
- I65.03 ... of bilateral vertebral arteries
- I65.09 ... of unspecified vertebral artery

I65.1 Occlusion and stenosis of basilar artery

I65.2 Occlusion and stenosis of carotid artery

- I65.21 ... of right carotid artery
- I65.22 ... of left carotid artery
- I65.23 ... of bilateral carotid arteries
- I65.29 ... of unspecified carotid artery

I65.8 Occlusion and stenosis of other precerebral arteries

I65.9 Occlusion and stenosis of unspecified precerebral artery

I66 Occlusion and stenosis of cerebral arteries, not resulting in cerebral infarction

I66.0 ... of middle cerebral artery

I66.1 ... of anterior cerebral artery

I66.2 ... of posterior cerebral artery

I66.3 ... of cerebellar arteries

I66.8 ... of other cerebral arteries

I66.9 ... of unspecified cerebral artery

Inclui:
oclusão
estenose
embolia
estreitamento
obstrução
trombose
...
sem enfarte

+ direita, esquerda, bilateral
ou não especificada

Outras doenças cérebro-vasculares

167 Other cerebrovascular diseases

167.0 Dissection of cerebral arteries, nonruptured

167.1 Cerebral aneurysm, nonruptured

167.2 Cerebral atherosclerosis

167.3 Progressive vascular leukoencephalopathy

167.4 Hypertensive encephalopathy

167.5 Moyamoya disease

167.6 Nonpyogenic thrombosis of intracranial venous system

167.7 Cerebral arteritis, not elsewhere classified

167.8- Other specified cerebrovascular diseases

167.9 Cerebrovascular disease, unspecified

168 Cerebrovascular disorders in diseases classified elsewhere

168.0 Cerebral amyloid angiopathy

Code first underlying amyloidosis (E85.-)

168.2 Cerebral arteritis in other diseases classified elsewhere

Code first underlying disease

Excludes1:

cerebral arteritis (in):

listeriosis (A32.89)

systemic lupus erythematosus (M32.19)

syphilis (A52.04)

tuberculosis (A18.89)

168.8 Other cerebrovascular disorders in diseases classified elsewhere

Code first underlying disease

Excludes1: *syphilitic cerebral aneurysm (A52.05)*

Como analisar os registos

- “AVC isquémico do território na Artéria Cerebral Anterior Direita por provável doença de grandes vasos”
 - Codificar como enfarte
 - Localizar na artéria cerebral anterior direita
 - Codificar arterosclerose dos vasos do pescoço (?)

Sequelas dos AVC

169 Sequelae of cerebrovascular disease

169.1 ... of nontraumatic **intracerebral hemorrhage**

169.2 ... of other nontraumatic **intracranial
hemorrhage**

169.3 ... of cerebral **infarct**

169.8 ... of **other** cerebrovascular diseases

169.9 ... of **unspecified** cerebrovascular disease

Sequelas dos AVC

- As manifestações dos AVC (hemiparesia, disartria, afasia, paralisia facial...) codificam-se como agudas nos episódios iniciais

G81.91 Hemiplegia, unspecified affecting right dominant side

- Depois do doente ter alta do episódio inicial, se voltar a ser internado, as manifestações do AVC, se ainda presentes, codificam-se como efeitos tardios (sequelas)

I69.351 Hemiplegia and hemiparesis following cerebral infarction affecting right dominant side

Sequelas dos AVC (I69.-)

- Quando um doente, ainda com sequelas de um AVC, voltar a ser internado por um novo evento, com manifestações de novo (agudas), codifica-se o evento atual, as suas manifestações agudas, e as sequelas do AVC anterior. Por exemplo:

I63.311 Cerebral infarction due to thrombosis of right middle cerebral artery

R47.01 Aphasia

I69.351 Hemiplegia and hemiparesis following cerebral infarction affecting right dominant side

Evento atual

Sequela de evento anterior

169.3 Sequelae of cerebral infarction

169.30 Unspecified sequelae of cerebral infarction

169.31 **Cognitive deficits** following cerebral infarction

169.32 **Speech and language deficits** following cerebral infarction

169.33 **Monoplegia of upper limb** following cerebral infarction

169.34 **Monoplegia of lower limb** following cerebral infarction

169.35 **Hemiplegia and hemiparesis** following cerebral infarction

169.39 **Other** sequelae of cerebral infarction

169.31 Cognitive deficits following cerebral infarction

169.310 **Attention** and **concentration** deficit following cerebral infarction

169.311 **Memory** deficit following cerebral infarction

169.312 **Visuospatial** deficit and spatial neglect following cerebral infarction

169.313 **Psychomotor** deficit following cerebral infarction

169.314 **Frontal lobe** and **executive function** deficit following cerebral infarction

169.315 **Cognitive social or emotional** deficit following cerebral infarction

169.318 **Other** symptoms and signs involving cognitive functions following cerebral infarction

169.319 Unspecified symptoms and signs involving cognitive functions following cerebral infarction

169.32 Speech and language deficits following cerebral infarction

169.320 **Aphasia** following cerebral infarction

169.321 **Dysphasia** following cerebral infarction

169.322 **Dysarthria** following cerebral infarction

169.323 **Fluency disorder** following cerebral infarction
Stuttering following cerebral infarction

169.328 **Other** speech and language deficits following cerebral infarction

169.35 Hemiplegia and hemiparesis following cerebral infarction

169.351 ... affecting **right** dominant side

169.352 ... affecting **left** dominant side

169.353 ... affecting **right** non-dominant side

169.354 ... affecting **left** non-dominant side

169.359 ... affecting unspecified side

169.39 Other sequelae of cerebral infarction

169.390 Apraxia following cerebral infarction

169.391 Dysphagia following cerebral infarction

Use additional code to identify the type of dysphagia, if known (R13.1-)

169.392 Facial weakness following cerebral infarction

Facial droop following cerebral infarction

169.393 Ataxia following cerebral infarction

169.398 Other sequelae of cerebral infarction

Alteration of **sensation** following cerebral infarction

Disturbance of **vision** following cerebral infarction

Use additional code to identify the sequelae

ICD-10 coding tables for stroke

Acute stroke codes for pre-cerebral arteries

ICD-10-CM code	ICD-10-CM description	Coding tip	Coding tip
163.0 -	Cerebral infarction due to thrombosis of pre-cerebral arteries	(-) Add 5th character:	
163.1 -	Cerebral infarction due to embolism of pre-cerebral arteries	0 - unspec. pre-cerebral artery	(-) Add 6th character, <i>when applicable</i>
163.2 -	Cerebral infarction due to unspecified occlusion or stenosis of pre-cerebral arteries	1 - vertebral artery 2 - basilar artery 3 - carotid artery 9 - other pre-cerebral artery	1 - right artery 2 - left artery 3 - bilateral arteries 9 - unspecified artery

Acute stroke codes for cerebral arteries

ICD-10-CM code	ICD-10-CM description	Coding tip	Coding tip
163.3 -	Cerebral infarction due to thrombosis of cerebral arteries	(-) Add 5th character:	
163.4 -	Cerebral infarction due to embolism of cerebral arteries	0 - unspec. cerebral artery 1 - middle cerebral artery 2 - anterior cerebral artery 3 - posterior cerebral artery	(-) Add 6th character, <i>when applicable</i> 1-right artery 2-left artery 3-bilateral arteries
163.5 -	Cerebral infarction due to unspecified occlusion or stenosis of cerebral arteries	4 - cerebellar artery 9 - other cerebral artery	9-unspecified artery

ICD-10 coding tables for stroke cont'd

Acute codes for Stroke/TIA		
ICD-10-CM code	ICD-10-CM description	Definition and tip
I63.6	Cerebral infarction due to cerebral venous thrombosis, non-pyrogenic	
I63.8	Other cerebral infarction	
I63.9	Cerebral infarction unspecified	Stroke NOS
G45.9	Transient Ischemic Attack, unspecified	TIA

Sequela of Stroke codes – Monoplegia/hemiplegia/hemiparesis		
ICD-10-CM code	ICD-10-CM description	Definition and tip
I69.33 -	Monoplegia of upper limb following cerebral infarction	(-) Add 6th character: 1 - right dominant side
I69.34 -	Monoplegia of lower limb following cerebral infarction	2 - left dominant side 3 - right non-dominant side
I69.35 -	Hemiplegia and Hemiparesis following cerebral infarction	4 - left non-dominant side 9 - unspecified side

Sequela of Stroke – Other deficits

ICD-10-CM code	ICD-10-CM description
I69.30	Unspecified sequela of cerebral infarction
I69.31-	Cognitive deficits following cerebral infarction <i>Add 6th character for specific cognitive deficit separation</i>
I69.320	Aphasia following cerebral infarction
I69.321	Dysphasia following cerebral infarction
I69.322	Dysarthria following cerebral infarction
I69.323	Fluency disorder following cerebral infarction
I69.328	Other speech and language deficits following cerebral infarction
I69.390	Apraxia following cerebral infarction
I69.391	Dysphagia following cerebral infarction <i>Use add'l code to identify type of dysphagia (R13.1-)</i>
I69.392	Facial weakness following cerebral infarction
I69.393	Ataxia following cerebral infarction
I69.398	Other sequela of cerebral infarction <ul style="list-style-type: none"> • Alteration of sensation • Disturbance of vision <i>Use additional code to identify sequela</i>

NIHSS

ICD-10-CM Guideline I.C.18.i.

- **NIHSS Stroke Scale: The NIH stroke scale (NIHSS) codes (R29.7- -) can be used in conjunction with acute stroke codes (I63) to identify the patient's neurological status and the severity of the stroke. The stroke scale codes should be sequenced after the acute stroke diagnosis code(s).**
- **At a minimum, report the initial score documented. If desired, a facility may choose to capture multiple stroke scale scores.**
- ***See Section I.B.14. for information concerning the medical record documentation that may be used for assignment of the NIHSS codes.***

Escala de Comas de Glasgow (ECG)

ICD-10-CM Guideline I.C.18.e.

- **Coma scale** The coma scale codes (R40.2-) can be used in conjunction with traumatic brain injury codes, **acute cerebrovascular disease or sequelae of cerebrovascular disease codes**. **These codes are primarily for use by trauma registries, but they may be used in any setting where this information is collected. The coma scale may also be used to assess the status of the central nervous system for other non-trauma conditions, such as monitoring patients in the intensive care unit regardless of medical condition.** The coma scale codes should be sequenced after the diagnosis code(s).
- These codes, one from each subcategory, are needed to complete the scale. The 7th character indicates when the scale was recorded. The 7th character should match for all three codes.
- At a minimum, report the initial score documented on presentation at your facility. This may be a score from the emergency medicine technician (EMT) or in the emergency department. If desired, a facility may choose to capture multiple coma scale scores.
- Assign code R40.24, Glasgow coma scale, total score, when only the total score is documented in the medical record and not the individual score(s).

Glasgow Score Coma

R40.2xxx Coma - ICD-10 Symptom

Define, Diagnose, Document

- Coma results from dysfunction of either the **brainstem reticular activating system** above the mid pons or of **both cerebral hemispheres**
- **Clinical (not coding) Stages**
 - **Deepest stages:** no reaction of any kind is obtainable: corneal, pupillary, pharyngeal, tendon, and plantar reflexes are absent, and tone in the limb muscles is diminished.
 - **With lesser degrees:** pupillary reactions, reflex ocular movements, and corneal and other brainstem reflexes are preserved in varying degree, and muscle tone in the limbs may be increased. Respiration may be slow or rapid, periodic, or deranged in other ways.
 - **Lighter stages:** most of the above reflexes can be elicited, and the plantar reflexes may be either flexor or extensor (Babinski sign).

Score	Eye Opening	Verbal Response	Motor Response
1	None	None	None
2	To pain	Vocal but not verbal	Extension
3	To voice	Verbal but not conversational	Flexion
4	Spontaneous	Conversational but disoriented	Withdraws from pain
5	—	Oriented	Localizes pain
6	—	—	Obeys commands

ICD-10 allows for GSC coding based on EMT and nursing documentation

Glasgow Coma Scale APR-DRG Implication

ICD-10 Code	Description	2014 HCC#	2014 CM RW	2014 IN RW	APR-DRG SOI	APR-DRG ROM	APR-DRG PPC
R402110	Coma scale, eyes open, never	80	0.570	0.104	3	4	2
R402120	Coma scale, eyes open, to pain	80	0.570	0.104	3	4	2
R402130	Coma scale, eyes open, to sound				1	1	
R402140	Coma scale, eyes open, spontaneous				1	1	
R402210	Coma scale, best verbal response, none	80	0.570	0.104	3	4	2
R402220	Coma scale, best verbal response, incomprehensible words	80	0.570	0.104	3	4	2
R402230	Coma scale, best verbal response, inappropriate words				1	1	
R402240	Coma scale, best verbal response, confused conversation				1	1	
R402250	Coma scale, best verbal response, oriented				1	1	
R402310	Coma scale, best motor response, none	80	0.570	0.104	3	4	2
R402320	Coma scale, best motor response, extension	80	0.570	0.104	3	4	2
R402330	Coma scale, best motor response, abnormal				1	1	
R402340	Coma scale, best motor response, flexion withdrawal	80	0.570	0.104	3	4	2
R402350	Coma scale, best motor response, localizes pain				1	1	
R402360	Coma scale, best motor response, obeys commands				1	1	
R40241	Glasgow coma scale score 13-15				1	1	
R40242	Glasgow coma scale score 9-12				1	1	
R40243	Glasgow coma scale score 3-8				1	1	

Sinais e sintomas nos AVC

- Droop (weakness) Facial: R29.810 (I69.992);
 - não confundir com paralisia de Bell (G51.0)
- Hemianópsia /quadrantopsia: H53.46x (x: 1=Right; 2=Left)
- Trombose artéria central retina: H34.xy
(x: 0=transitória; 1=central artery; 2=other artery; 8=other vascular)
(y: 0=unspecified; 1=Right; 2=Left; 3=bilateral)
- AIT: G45.x
(0=vertebro-basilar; 1=carotídeo; 2=múltiplo; 3=amaurose fugaz; 4=AGT; 8=outras; 9=inespecífico)

Tobacco (Nicotine)

- Nicotine dependence
 - F17.2xy
 - (x: 0=unspecified; 1=cigarettes; 2=chewing; 9=other)
 - (y: 0=não complicada; 1=remissão; 3=abstinência;
8=outras alterações; 9=não especificada)
- Tobacco use (NOS): Z72.0
- Occupational exposure: Z57.31
- History of tobacco use (dependence): Z87.891

Clinical Case

62 WF with HTN, atrial fibrillation (INR 1.3) ischemic cardiomyopathy, diabetes, and hyperlipidemia presents with 8 hours of right-sided weakness, numbness, ataxia, and altered mental status concerning for acute stroke.

Diagnostics: Head CT reveals hypodensity in left temporal lobe. MRI/MRA reveals occlusion of branch of left middle cerebral artery with associated hypodensity and edema with midline shift. Echocardiogram reveals no evidence of clot.

Hospital course: Patient is placed on clopidogrel with plans to start coumadin outpatient. Repeat head CT is performed in 72 hours with stable findings. Patient's weakness and mental status changes improve, and after risk stratification, patient is discharged to rehab.

Discharge diagnoses: Acute left CVA, weakness, mental status change

**What are opportunities for documentation improvement?
Impact and specification**

Specificity in Documentation

- Acute left CVA
 - I63.512, Cerebral infarction due to unspecified occlusion or stenosis of left middle cerebral artery
 - **Query for embolism?**
- Right weakness (R53.1)
 - Hemiparesis (**CC**): **dominant vs. nondominant; flaccid vs. spastic**
- Mental status change (R41.82)
 - Encephalopathy (**MCC**): metabolic vs. other
- Edema and midline shift
 - Cerebral edema (**MCC**) and brain compression (**MCC**)
- Atrial fibrillation (I48.91)
 - **Persistent (CC) vs. chronic**

EXEMPLO

- Doente apresenta-se no S.U. com hemiparesia direita e alterações da linguagem. TC-CE revela enfarte território ACM esquerda. Inicia trombólise e repete TC-CE que revela transformação hemorrágica. Na documentação do doente é assumida a hemorragia como devida à alteplase. Como se codifica ?
- I63.512 (oclusão inespecífica da ACM esquerda)
- I61.2 (hemorragia cerebral hemisférica, não traumática)
- T45.615A (efeito adverso trombolítico, encontro inicial)

TCE

- S06.X

0=concussão (com/sem perda conhecimento)

1=edema

2=lesão (axonal) difusa

3.X=focal (4=R hemorragia cerebral;5=L; 6=I;

7=cerebelo; 8=tronco)

4= hemorragia epidural;

5=HSD;

6=HSA;

8=outras;

9=I

Procedimentos

• Rx torax PA	87.44/87.49	BW03ZZZ
• TC-CE	87.03	B020ZZZ
• AngioTC-CE		B020Y(0,Z)Z
• RM-CE	88.91	B030ZZZ
• AngioRM-CE		B030Y0Z
• Angiografia (fluoroscopia) (cerebral; carótida; vertebral)	88.41	B31(R;3-C;F-G)YZZ
• Ecodoppler vasos pescoço	88.71	B348ZZZ
• Ecodoppler Vasos Membros	88.77	B(3:4:5)4(FGH)ZZZ
• Ecocardiograma TT	88.72	B246ZZZ
• Ecocardiograma TE	88.72	B246ZZ4
• ECG	89.52	4A02X4Z
• Holter	89.50	4A12X45
• MAPA	89.61	4A133B1

• Gasometria	89.65	4A033R1
• O2	93.96	3E0F7GC
• Aerosol	93.94	3E0F7(3:6:7:B:G)Z
• VNI (C/BIPAP)	93.90(1)	5A09(3:4:5)57
• Ventilação Invasiva	93.70(1:2)	F0(C:6)Z(1:3)ZZ
• ENG (descompressão)	96.07	0D9670Z
• ENG (alimentação)	96.6	0DH67UZ
• Avaliação MFR	93.01	F0UZHZZ (deglutição)
• Algaliação	57.94	0T9B70Z
• Sangue, urina, expectoração	90(1).XX	Não codificável ICD 10
• Soros	99.18	3E0(3,4)37Z (3,4 periférico/central)
• Antibióticos	99.21	3E0(3,4)329
• Oxazolidinona (Linezolid)	00.14	3E0(3,4)328
• Trombólise	99.10	3E03317
• Trombectomia cerebral	39.74	03CG3ZZ
• Embolização (coil aneurisma)	39.75(6)	03VG 3DZ (3=percut.; D=intraluminal)
• Clipping (surgical) aneurisma	39.51	03VG OBZ (O=open; B=extraluminal)

Stroke and Late Effects of Prior Stroke

SOME EXAMPLES

Example 1:	Stroke, initial incident; CVA	I63.9
Example 2:	Prior stroke with no deficits (history of CVA)	Z86.73
Example 3:	Stroke, initial incident with deficits from prior stroke. Acute embolic CVA with infarction; previous CVA with residual dysphagia	I63.40, I69.391
Example 4:	Office visit follow-up for evaluation of hemiplegia due to a CVA one month earlier	I69.35x
Example 5:	Office visit follow-up for evaluation of cognitive deficits and aphasia from prior CVA	I69.31, I69.320
Example 6:	The patient suffered a post-operative stroke following cardiac surgery; acute embolic CVA with infarction	I97.820, I63.40

- **I69 Sequelae of cerebrovascular disease**
- **Note:**
- Category I69 is to be used to indicate conditions in I60-I67.1 and I67.4-I67.9 as the cause of sequelae, themselves classified elsewhere. The "sequelae" include conditions specified as such or as late effects, or those present one year or more after onset of the causal condition.
- Not to be used for chronic cerebrovascular disease. Code these to I60-I67.
- **I69.0 Sequelae of subarachnoid hemorrhage**
- **I69.1 Sequelae of intracerebral hemorrhage**
- **I69.2 Sequelae of other nontraumatic intracranial hemorrhage**
- **I69.3 Sequelae of cerebral infarction**
- **I69.4 Sequelae of stroke, not specified as hemorrhage or infarction**
- **I69.8 Sequelae of other and unspecified cerebrovascular diseases**

While Hemiparesis = Hemiplegia, Monoparesis ≠ Monoplegia

- I69.34 **Monoplegia** of lower limb following cerebral infarction
 - I69.341 Monoplegia of lower limb following cerebral infarction affecting right dominant side
 - I69.342 Monoplegia of lower limb following cerebral infarction affecting left dominant side
 - I69.343 Monoplegia of lower limb following cerebral infarction affecting right non-dominant side
 - I69.344 Monoplegia of lower limb following cerebral infarction affecting left non-dominant side
 - I69.349 Monoplegia of lower limb following cerebral infarction affecting unspecified side
- I69.35 **Hemiplegia and hemiparesis** following cerebral infarction
 - I69.351 Hemiplegia and hemiparesis following cerebral infarction affecting right dominant side
 - I69.352 Hemiplegia and hemiparesis following cerebral infarction affecting left dominant side
 - I69.353 Hemiplegia and hemiparesis following cerebral infarction affecting right non-dominant side
 - I69.354 Hemiplegia and hemiparesis following cerebral infarction affecting left non-dominant side
 - I69.359 Hemiplegia and hemiparesis following cerebral infarction affecting unspecified side

- I69.098 **Other sequelae following nontraumatic subarachnoid hemorrhage**
Alterations of sensation following nontraumatic subarachnoid hemorrhage
Disturbance of vision following nontraumatic subarachnoid hemorrhage
Use additional code to identify the sequelae

Monoparesis after a stroke =

I69.x98 (depending on the underlying event)

Plus

M62.81 – Muscle weakness

- **I67 Other cerebrovascular diseases**
- ***Excl.:***
- sequelae of the listed conditions ([I69.8](#))
- **I67.0 Dissection of cerebral arteries, nonruptured**
- ***Excl.:***
- ruptured cerebral arteries ([I60.7](#))
- **I67.1 Cerebral aneurysm, nonruptured**
- Cerebral:
- aneurysm NOS
- arteriovenous fistula, acquired
- ***Excl.:***
- congenital cerebral aneurysm, nonruptured ([Q28.-](#))
- ruptured cerebral aneurysm ([I60.-](#))
- **I67.2 Cerebral atherosclerosis**
- Atheroma of cerebral arteries

- **I67.3 Progressive vascular leukoencephalopathy**
- Binswanger disease
- ***Excl.:***
- subcortical vascular dementia ([F01.2](#))
- **I67.4 Hypertensive encephalopathy**
- **I67.5 Moyamoya disease**
- **I67.6 Nonpyogenic thrombosis of intracranial venous system**
- Nonpyogenic thrombosis of:
- cerebral vein
- intracranial venous sinus
- ***Excl.:***
- when causing infarction ([I63.6](#))
- **I67.7 Cerebral arteritis, not elsewhere classified**
- **I67.8 Other specified cerebrovascular diseases**
- Acute cerebrovascular insufficiency NOS
- Cerebral ischaemia (chronic)
- **I67.9 Cerebrovascular disease, unspecified**

- **I68* Cerebrovascular disorders in diseases classified elsewhere**
- **I68.0* Cerebral amyloid angiopathy ([E85.-†](#))**
- **I68.2* Cerebral arteritis in other diseases classified elsewhere**
- Cerebral arteritis in systemic lupus erythematosus ([M32.1†](#))
- **I68.8* Other cerebrovascular disorders in diseases classified elsewhere**
- Uraemic apoplexia in chronic kidney disease ([N18.5†](#))

Stroke Consequences

“Bilateral” “Sided” Weakness

169.36 Other paralytic syndrome following cerebral infarction

Use additional code to identify type of paralytic syndrome, such as:

locked-in state (G83.5)
quadriplegia (G82.5-)

Excludes1: hemiplegia/hemiparesis following cerebral infarction (169.35-)
monoplegia of lower limb following cerebral infarction (169.34-)
monoplegia of upper limb following cerebral infarction (169.33-)

169.361 Other paralytic syndrome following cerebral infarction affecting right dominant side

169.362 Other paralytic syndrome following cerebral infarction affecting left dominant side

169.363 Other paralytic syndrome following cerebral infarction affecting right non-dominant side

169.364 Other paralytic syndrome following cerebral infarction affecting left non-dominant side

169.365 Other paralytic syndrome following cerebral infarction, bilateral

169.369 Other paralytic syndrome following cerebral infarction affecting unspecified side

- In ICD-10-CM, “quadriparesis” = “quadriplegia”
- Explicit documentation of neurologic quadriparesis due to (multiple) stroke(s) adds weight to hospital and physician risk adjustment

Cognitive Sequelae

Memory Loss

- Ability to remember names/faces/shapes can be compromised
- Difficulty learning new information or skill
- Difficulty organizing thoughts/perform sequential tasks (Frontal lobe)

Agnosia - Inability to recognize specific familiar object, (e.g., own body hand, face, shape, or sound)

- Ex: "finger agnosia" due to stroke in dominant language parietal lobe, pt can easily recognize/name car or TV, but not own thumb

Agraphia - Loss of writing ability resulting from damage to language areas of brain

- After stroke often incomplete, many stroke survivors can rapidly re-learn to write some words/sentences

Dysphagia Example

I63.4 Cerebral infarction due to embolism of cerebral arteries

I63.44 Cerebral infarction due to embolism of cerebellar artery

I63.441 Cerebral infarction due to embolism of right cerebellar artery

I63.442 Cerebral infarction due to embolism of left cerebellar artery

I63.449 Cerebral infarction due to embolism of unspecified cerebellar artery

I69.391 Dysphagia following cerebral infarction

- **Use additional** code to identify the type of dysphagia, if known (R13.1-)

Types of Aphasia

Broca's Aphasia – AKA, Motor Aphasia

- Production of language is affected, (speaking) But other aspects of language are mostly preserved
- Usu. prevents forming own intelligible words/sentences, but still ability to understand others. Some aphasics can say few words - **telegraphic speech**
- Often w/other impairments –hemiparesis/hemiplegia on R side of body, **alexia** and **agraphia**

Wernicke's Aphasia

- Pts can't understand others', or even their own speech
- Speech is incomprehensible, but pt feels being understood. (**Anosagnosia**)
- Ex: "My door sat through the lamp in the sky." (**Logorrhea**)
- With time, Wernicke's aphasics may know others can't understand them - might become angry, paranoid, & depressed

Global Aphasia

- Involves both areas
- Pts can't understand spoken language or speak
- Some pts can still communicate by using written language

Other Neurological Muscle Weaknesses

G82 Paraplegia (paraparesis) and quadriplegia (quadriparesis)

Note: This category is to be used only when the listed conditions are reported without further specification, or are stated to be old or longstanding but of unspecified cause. The category is also for use in multiple coding to identify these conditions resulting from any cause

Excludes1: congenital cerebral palsy (G80.-)
functional quadriplegia (R53.2)
hysterical paralysis (F44.4)

G82.2 Paraplegia

Paralysis of both lower limbs NOS

Paraparesis (lower) NOS

Paraplegia (lower) NOS

G82.20 Paraplegia, unspecified

G82.21 Paraplegia, complete

G82.22 Paraplegia, incomplete

G82.5 Quadriplegia

G82.50 Quadriplegia, unspecified

G82.51 Quadriplegia, C1-C4 complete

G82.52 Quadriplegia, C1-C4 incomplete

G82.53 Quadriplegia, C5-C7 complete

G82.54 Quadriplegia, C5-C7 incomplete

If the coding system asks you to specify if a muscle weakness is due to

- A stroke or not
- Cerebral palsy
- Spinal cord injury
- Other specified neurological diseases

Pay attention!

Paralisia facial nos AVC

- A paralisia facial nos AVC não é periférica mas central e faz parte do quadro de hemiplegia ou de hemiparésia causados pela isquemia / enfarte cerebral
- O código **G51.0 Bell's palsy** (paralisia de Bell) não é aplicável por se tratar duma lesão do nervo facial, ou seja, uma lesão periférica, não central
- A codificação aplicável para a paralisia facial de causa central é:
 - R29.810 Facial weakness (facial droop)**
 - I69.x92 Facial weakness, following ... (hemorrhage, infarction...)**

Paresia facial na hemiplegia

- **Hemiparesis**

The most common movement impairment is hemiparesis, which refers to one-sided (“hemi”) weakness (“paresis”). Hemiparesis affects roughly 80 percent of stroke survivors, causing weakness or the inability to move one side of the body. Weakness can impact arms, hands, legs and facial muscles. Those impacted may have trouble performing everyday activities such as eating, dressing, using the bathroom and grabbing objects. (National Stroke Association)

Hemiplegia G81.9-
G81.9- Hemiplegia, unspecified

Paralysis / facial G51.0
G51.0 Bell’s palsy

Droop / facial R29.810
R29.810 Facial weakness

Excludes1: Bell's palsy (G51.0)
facial weakness following
cerebrovascular disease (I69. with
final characters -92)

ICD 10 PCS TABELA

SECÇÃO	BODY SYSTEM	ROOT OPERATIONS	BODY PART	APPROACH	DEVICE	QUALIFIER
MEDICAL/SURGICAL (0) (475) *OBSTETRICS (3) 1 Pregnancy 0 Placement (6) 2W/Y (regions/orifices) Administration (14) 3 0(circ.)/C(device)/E(Systems) Measure/monitor (4) 4A/B (system/devices) Extracorporeal Assistance(2) 5A Extracorporeal Therapies (2) 6A Osteopathic (1) 7W Other (2) 8C/E (device/system) Chiropractic (1) 9WB? IMAGING (33) B Nuclear (11) C Radiation (16) D REHABILITATION (15) F 0/1 Mental (2) GZ Substance abuse (3) HZ New Technology (2) X	<u>SNC</u> 0 SNP 1 <u>Heart/Vessels</u> 2 <u>Upper Arteries</u> 3 <u>Lower Arteries</u> 4 <u>Upper Veins</u> 5 Lower Veins 6 <u>Lymphatic</u> /Hemic 7 Eye 8 <u>Ear/nose</u> 9 Physiol. System A <u>Respiratory</u> B <u>Mouth/Throat(9)</u> C <u>Gastrointestinal</u> D <u>Hepatobiliar</u> F <u>Endocrine</u> G <u>Skin/Breast</u> H <u>TCS (H)/Fascia</u> J Muscles K Tendons (<u>connective Tissue</u>) L Ligaments/Bursa M <u>Bones</u> N/P/Q U/L Joints R(<u>axial</u>)/S <u>Urinary</u> T <u>Female</u> U Male V Anatomic regions (G/U/L) <u>W</u> /X/Y Anatomic orifices Y <u>Fetus/Obstetrical</u> Y	Introduction 0 Bypass 1 *Change 2 Control 3 Creation 4 Destruction 5 Detachment 6 Dilatation 7 Division 8 *Drainage 9 *Abortion A Excision B Extirpation C *Extraction D *Delivery E Fragmentation F Fusion G *Insertion H *Inspection J MAP K Occlusion L Reattachment M Release N *Removal P *Repair Q Replacement R *Reposition S *Resection T Supplement U Restriction V Revision W Transfer X *Transplantation Y	0-9 A-S Variável com Body System *Products Conception 0 * P. Conception retained 1 * P.Conception Ectopic 2	0-8 Open 0 Percutaneous 3 P. Endoscopic 4 Natural/artificial opening 7 Natural/artificial opening endoscopic 8 External X Z	Drainage 0 Radioactive 1 Monitor 2 Infusion 3 Intraluminal device (drug eluting) 4,5,6,7 External Fixation 5 Autologous Tissue Substitute 7 Spacer/Zooplastic tissue 8 Autologous venous tissue 9 Autologous arterial tissue A Bioactive intraluminal B Extraluminal C Intraluminal D,E,F,G Synthetic substitute J Non autologous tissue substitute/Cardiac lead/Defibrillator K Cardiac Lead M Intracardiac pacemaker N Implantable Heart Assisted System Q Extrernal Heart Assisted System R Intraluminal radioactiv T Other Y No device Z	Diagnostic X No qualifier Z

Reason for Elimination of 24 hour rule for TIA

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Table 3. Frequency of DWI Abnormality in Patients With Transient Neurological Episodes of Different Durations: Pooled Data From 10 MRI Studies Enrolling 818 Patients⁴⁵

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