

# Critical Limb Ischemia Coding in ICD-10-CM

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on behalf of

**CLI GLOBAL SOCIETY**  
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# OVERVIEW

## Critical Limb Ischemia

- Clinical Nature
- Treatment
- ICD-10-CM Coding
- Sample Coding Scenarios

# BURDEN OF CRITICAL LIMB ISCHEMIA

- After a diagnosis of critical limb ischemia, risk of mortality is 24% at 1 year and 60% over 5 years.
- Inpatient hospitalization is common and up to 60% of patients are readmitted within 6 months.
- About 150,000 amputations occur in the US annually due to critical limb ischemia.
- Patients with CLI are at increased risk of major cardiovascular complications, eg, AMI, stroke.
- The annual US economic burden of CLI was recently estimated at over \$200 billion.

“Overall, the high incidence of critical limb ischemia in combination with its highly fatal course make the disease an under-recognized major threat to public health.”

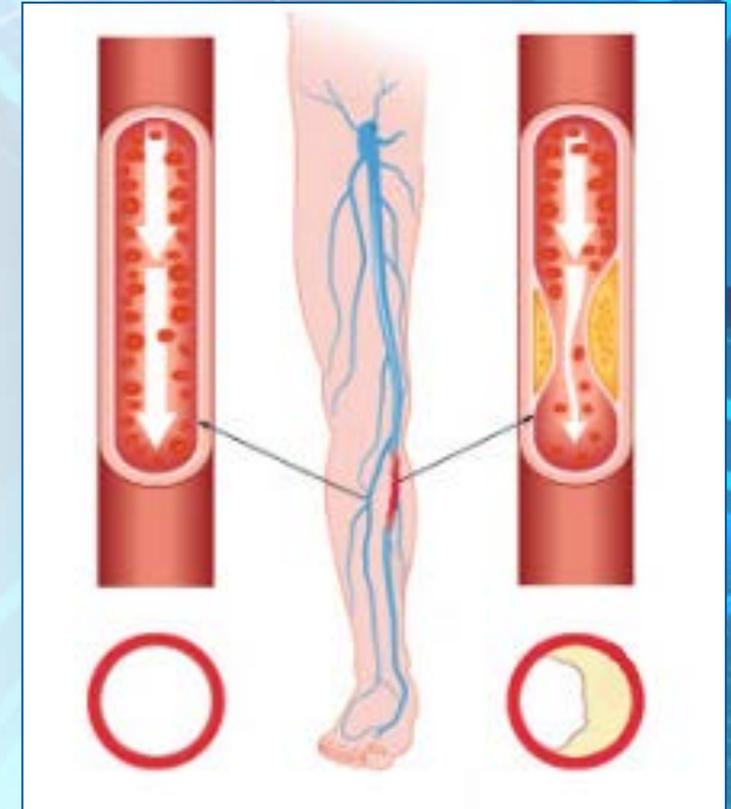
Mustapha JA, Katzen BT, Neville RF, Lookstein RA, et al. *Critical limb Ischemia: a threat to life and limb.* *Endovasc Today.* 2019;18(5):80-82

# CLINICAL NATURE OF CRITICAL LIMB ISCHEMIA



# PERIPHERAL ARTERY DISEASE

- In peripheral artery disease, plaque builds up in the peripheral arteries over time, narrowing or blocking the lumen of the vessel.
- This reduces or obstructs blood flow through the artery, preventing sufficient oxygen from reaching the distal extremities.
- About 12% of US adults have some degree of clinically significant peripheral artery disease.



# CRITICAL LIMB ISCHEMIA

- Of those with peripheral artery disease, about 11% eventually go on to develop critical limb ischemia.
  - The prevalence of critical limb ischemia in the US is about 1.3% .
- *Critical limb ischemia is essentially end-stage peripheral artery disease of the lower extremities.*
- *In critical limb ischemia, the limb is endangered.*

## Commonly Used Abbreviations

**CLI** = Critical Limb Ischemia

**CLTI** = Chronic Limb-Threatening Ischemia

The abbreviations are interchangeable.

# CLINICAL DEFINITION OF CLI

- CLI is characterized by the hallmarks of chronic ischemia with inadequate blood supply to the tissues.
- A diagnosis of CLI requires at least one of manifestations.
- By its nature, CLI is a chronic condition.

*“Clinically, critical limb ischemia (CLI) is defined as ischemic rest pain, tissue loss, or gangrene in the presence of peripheral artery disease (PAD) and hypoperfusion of the lower extremity.”*

Critical Limb Ischemia: An Expert Statement, MH Shishehbor et al, *Journal of the American College of Cardiology*, 2016, Volume 68, No 18.

# PROGRESSION : PAD → CLI

- ❌ Asymptomatic peripheral artery disease
- ❌ Intermittent Claudication
  - Pain affecting the calf, thigh, or buttock, induced by exercise and relieved by rest

- 
- ✅ Rest Pain
    - Ischemic pain, usually in the foot and usually at night, when at rest or lying down
  - ✅ Tissue Loss (Ulceration)
    - Skin breakdown, chronic and non-healing
  - ✅ Gangrene
    - Tissue death

Critical limb ischemia does not always progress through the various stages.



# OTHER CLASSIFICATIONS

- Other classifications of critical limb ischemia may be documented in the medical record.

Rutherford	
Category	Symptoms
0	Asymptomatic
1	Mild claudication
2	Moderate claudication
3	Severe claudication
4	Ischemic rest pain
5	Minor tissue loss (ulceration, focal gangrene)
6	Major tissue loss (extensive gangrene, “no option”)

SVS Wifl (Wound-Ischemia-Foot Infection)			
Wound Grade	Ulcer	Gangrene	Clinical
0	No	No	Ischemic rest pain
1	Distal, small, shallow, no exposed bone	No	Minor tissue loss
2	Deep ulcer with exposed bone, joint or tendon, except heel / Shallow heel ulcer without calcaneus	Limited to digits	Major tissue loss
3	Extensive deep ulcer of forefoot or midfoot / Deep heel ulcer with calcaneus	Extensive, full thickness	May not be salvageable

# COEXISTING DIABETES MELLITUS

- Peripheral artery disease progresses more rapidly in patients with diabetes and the risk of developing CLI is about four times higher.
- Patients with diabetes often have more extensive CLI, eg, multiple arteries, long lesions.
- They are also more likely to present with higher severity, ie, ulcers or gangrene.
- CLI patients with diabetes are also at a significantly higher risk of major amputation than CLI patients without diabetes.

Patients with CLI who have coexisting diabetes are a notable subgroup at particular risk.

# TREATMENT OF CRITICAL LIMB ISCHEMIA



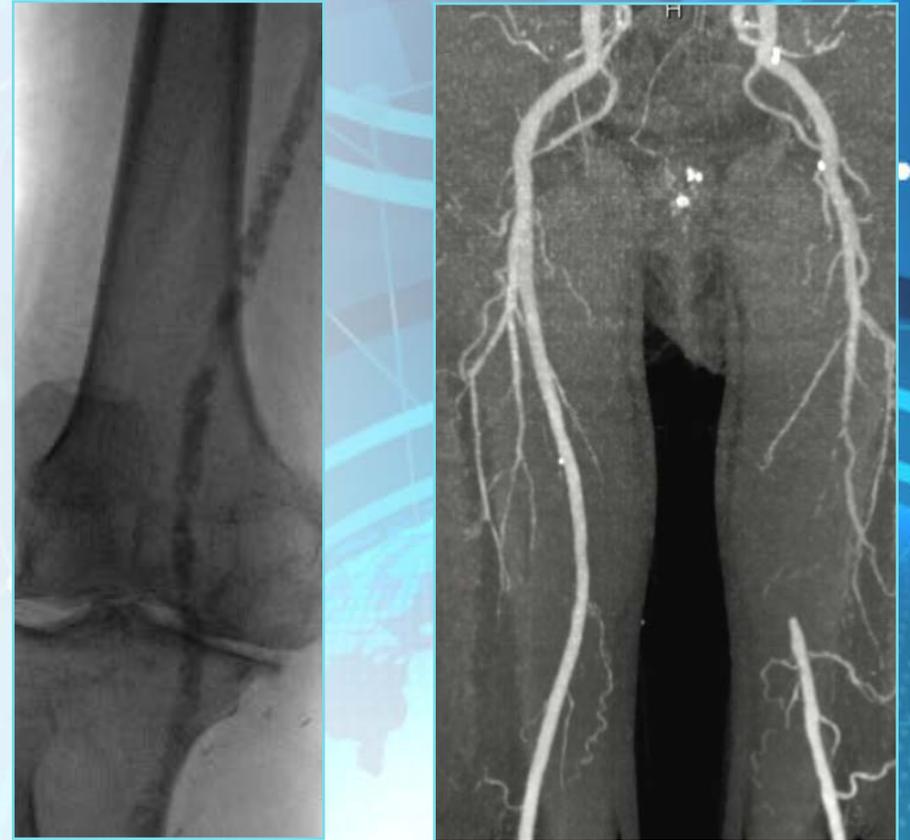
# OBJECTIVES OF CLI TREATMENT

- The overall goal of CLI treatment is to:
  - ✓ Relieve pain
  - ✓ Allow wound healing
  - ✓ Improve function
  - ✓ Preserve limbs
  - ✓ Reduce mortality
- The specific goal of surgical treatment is to improve blood flow to the tissues of the limb.
- *Revascularization* of the limb is the first-line treatment for CLI.



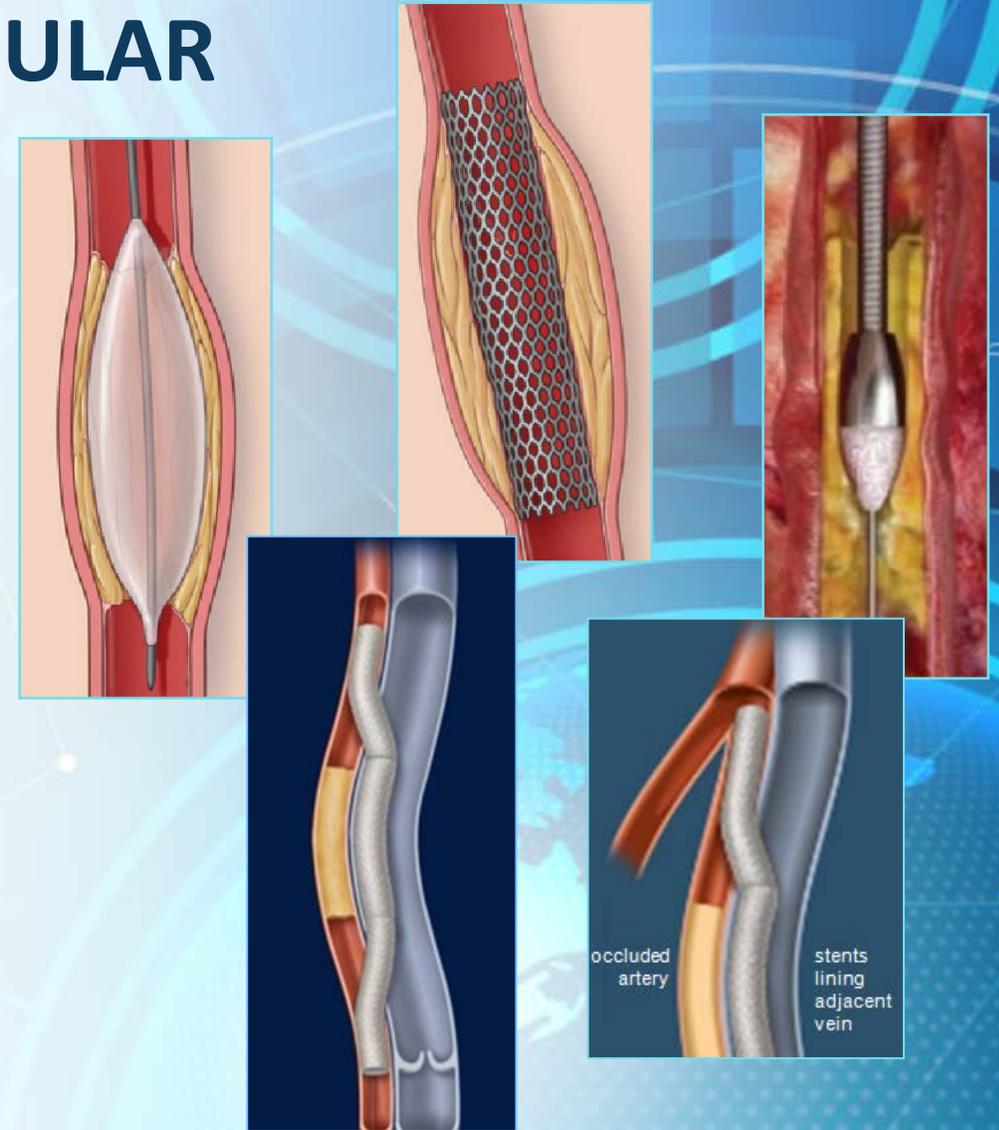
# REVASCULARIZATION: APPROACH

- Revascularization of the lower limb can be performed by an endovascular approach or an open surgical approach.
- Which approach is selected depends on multiple factors, including:
  - ✓ Multilevel disease
  - ✓ Length and composition of lesion, eg, calcifications
  - ✓ Presence of chronic total occlusion
  - ✓ Patient comorbidities



# REVASCULARIZATION: ENDOVASCULAR

- Common endovascular techniques include:
  - ✓ Angioplasty (plain balloon, drug-eluting)
  - ✓ Stenting (bare metal, drug-eluting)
  - ✓ Atherectomy
- Other endovascular techniques being introduced include:
  - ✓ Endovascular bypass
  - ✓ Venous arterialization



# REVASCULARIZATION: OPEN

- Open surgical bypass may be performed when lesions cannot be crossed.
- It may also be performed when endovascular approaches fail or when the treated artery is subject to re-occlusion, eg, restenosis of stent.

# “NO OPTION” AMPUTATION

- Amputation rates typically exceed 15-20% at one year.
- Rates of amputation rise as the severity of disease increases.
- Patients who have undergone amputation are at heightened risk for one or more additional amputations, including the contralateral limb.

# ICD-10-CM DIAGNOSIS CODES FOR CRITICAL LIMB ISCHEMIA



# THE TROUBLE WITH ICD-10-CM

- From its implementation in FY 2016, ICD-10-CM did not contain *any* references to critical limb ischemia.
- This created frustration in searching for codes for this diagnosis.
- The ICD-10-CM codes being assigned by physicians and hospitals for critical limb ischemia were inconsistent.
- The coding inconsistencies carried over to clinical databases.

## Ischemia, ischemic I99.8

- brain —see Ischemia, cerebral
- cerebral (chronic) (generalized) I67.82
- coronary —see Disease, heart, ischemic
- intestine (large) (small) (transient) K55.9
- kidney N28.0
- retina, retinal —see Occlusion, artery, retina
- spinal cord G95.11

ICD-10-CM Index 2016

## I70 Atherosclerosis

ICD-10-CM Tabular 2016

**I70.2 Atherosclerosis of native arteries of the extremities**  
Mönckeberg's (medial) sclerosis

**I70.20 Unspecified atherosclerosis of native arteries of extremities**

**I70.21 Atherosclerosis of native arteries of extremities with intermittent claudication**

**I70.22 Atherosclerosis of native arteries of extremities with rest pain**

**Includes:** any condition classifiable to I70.21-

**I70.23 Atherosclerosis of native arteries of right leg with ulceration**

**Includes:** any condition classifiable to I70.211 and I70.221

**Use additional** code to identify severity of ulcer (L97.-)

**I70.24 Atherosclerosis of native arteries of left leg with ulceration**

**Includes:** any condition classifiable to I70.212 and I70.222

**Use additional** code to identify severity of ulcer (L97.-)

**I70.25 Atherosclerosis of native arteries of other extremities with ulceration**

**Includes:** any condition classifiable to I70.218 and I70.228

**Use additional** code to identify the severity of the ulcer (L98.49-)

**I70.26 Atherosclerosis of native arteries of extremities with gangrene**

**Includes:** any condition classifiable to I70.21-, I70.22-, I70.23-, I70.24-, and I70.25-

**Use additional** code to identify the severity of any ulcer (L97.-, L98.49-), if applicable

**I70.29 Other atherosclerosis of native arteries of extremities**

# ICD-10 C&M COMMITTEE

- ICD-10 is maintained and updated by the ICD-10 Coordination and Maintenance Committee.
  - ICD-10-CM *diagnosis* codes are managed by CDC
  - ICD-10-PCS *procedure* codes are managed by CMS
- All requests for new and revised ICD-10-CM diagnosis codes go to CDC.
- C&M Committee meetings are held twice a year to publicly review requests, with decisions to follow.
- If approved, code changes typically take 15 to 22 months from submission to implementation.



# CRITERIA FOR CODE CHANGES

- The C&M Committee looks for multiple elements when considering whether to approve a request.
  - ✓ The diagnosis must be understood and applied consistently by physicians.
  - ✓ The diagnosis must be useful in broad-based data collection and analysis.
  - ✓ It must be documented distinctly and specifically in the medical record.
  - ★ The proposal must be written in accordance with ICD-10-CM conventions.

References to reimbursement, benefits, and claims processing are considered off-topic.

# NATURE OF C&M REQUEST

- ICD-10-CM already contained codes for peripheral artery disease of the extremities with rest pain, ulceration, and gangrene.
- With this in mind, it was determined that no *new* ICD-10-CM codes were needed per se.
- Instead, the proposal focused on clearly identifying *existing* codes that constitute critical limb ischemia.
- This meant focusing on instructional notes in the Tabular and entries in the Index.

ICD-10-CM TABULAR LIST  
of DISEASES and INJURIES

ICD-10-CM INDEX  
TO DISEASES and INJURIES

# C&M PROPOSAL FOR CLI

- The proposal requested new inclusion terms within code category **I70, Atherosclerosis**.
  - ✓ The inclusion terms were located at the subcategory level for rest pain, ulceration, and gangrene.
  - ✓ The inclusion terms applied to 144 codes.
- For the Index, the proposal requested new entries under the main term **Arteriosclerosis**.
  - ✓ Cross-references were proposed under **Ischemia**.
  - ✓ Over 200 new Index entries were proposed.

Both “critical limb ischemia” and “chronic limb-threatening ischemia” were proposed terms for the Tabular and the Index.

# PRESENTATION AT C&M MEETING

- The proposal was formally presented at the September 11, 2019 meeting of the C&M Committee.  
[https://www.cdc.gov/nchs/icd/icd10cm\\_maintenance.htm](https://www.cdc.gov/nchs/icd/icd10cm_maintenance.htm)
- Like all C&M proposals, it was posted to the CDC website and is still available there for review.  
<https://www.cdc.gov/nchs/icd/icd10cm.htm>

**S U C C E S S**

The updates for critical limb ischemia went into effect on October 1, 2020.

# INDEX: NEW ENTRIES

- The index now explicitly cites critical limb ischemia and chronic limb-threatening ischemia.
- Exhaustive new index entries direct users to all 144 codes.

## Ischemia, ischemic I99.8

- brain -see Ischemia, cerebral
- cerebral (chronic) (generalized) I67.82
- coronary -see Disease, heart, ischemic
- intestine (large) (small) (transient) K55.9
- kidney N28.0
- limb, critical -see Arteriosclerosis, with critical limb ischemia
- limb-threatening, chronic -see Arteriosclerosis, with critical limb ischemia
- retina, retinal -see Occlusion, artery, retina
- spinal cord G95.11

## ICD-10-CM Index 2021

## Arteriosclerosis, arteriosclerotic I70.90

- with
  - chronic limb-threatening ischemia -see Arteriosclerosis, with critical limb ischemia
  - critical limb ischemia
  - bypass graft I70.329
  - autologous vein graft I70.429
  - leg I70.429
  - with
    - gangrene (and intermittent claudication, rest pain, and ulcer) I70.469
    - rest pain (and intermittent claudication) I70.429
    - bilateral I70.423
    - with
      - gangrene (and intermittent claudication, rest pain, and ulcer) I70.463
      - rest pain (and intermittent claudication) I70.423
      - left I70.422
      - with
        - gangrene (and intermittent claudication, rest pain, and ulcer) I70.462
        - rest pain (and intermittent claudication) I70.422
        - ulceration (and intermittent claudication and rest pain) I70.449
        - ankle I70.443
        - calf I70.442
        - foot site NEC I70.445
        - heel I70.444
        - lower leg NEC I70.448

# TABULAR: NEW NOTES

- The tabular notes now display critical limb ischemia and chronic limb-threatening ischemia as equivalent terms to the code definitions.
- Rest pain is set as the default.

## I70 Atherosclerosis

## ICD-10-CM Tabular 2021

### I70.2 Atherosclerosis of native arteries of the extremities

#### I70.22 Atherosclerosis of native arteries of extremities with rest pain

**Includes:** any condition classifiable to I70.21- ←  
chronic limb-threatening ischemia NOS of native arteries of extremities  
chronic limb-threatening ischemia of native arteries of extremities with rest pain  
critical limb ischemia NOS of native arteries of extremities  
critical limb ischemia of native arteries of extremities with rest pain

- I70.221 Atherosclerosis of native arteries of extremities with rest pain, right leg
- I70.222 Atherosclerosis of native arteries of extremities with rest pain, left leg
- I70.223 Atherosclerosis of native arteries of extremities with rest pain, bilateral legs
- I70.228 Atherosclerosis of native arteries of extremities with rest pain, other extremity
- I70.229 Atherosclerosis of native arteries of extremities with rest pain, unspecified extremity

## I70.24 Atherosclerosis of native arteries of left leg with ulceration

**Includes:** any condition classifiable to I70.212 and I70.222 ←  
chronic limb-threatening ischemia of native arteries of left leg with ulceration  
critical limb ischemia of native arteries of left leg with ulceration

**Use additional** code to identify severity of ulcer (L97.-)

- I70.241 Atherosclerosis of native arteries of left leg with ulceration of thigh
- I70.242 Atherosclerosis of native arteries of left leg with ulceration of calf
- I70.243 Atherosclerosis of native arteries of left leg with ulceration of ankle
- I70.244 Atherosclerosis of native arteries of left leg with ulceration of heel and midfoot  
Atherosclerosis of native arteries of left leg with ulceration of plantar surface of midfoot
- I70.245 Atherosclerosis of native arteries of left leg with ulceration of other part of foot  
Atherosclerosis of native arteries of left leg extremities with ulceration of toe
- I70.248 Atherosclerosis of native arteries of left leg with ulceration of other part of lower leg
- I70.249 Atherosclerosis of native arteries of left leg with ulceration of unspecified site

## I70.26 Atherosclerosis of native arteries of extremities with gangrene

**Includes:** any condition classifiable to I70.21-, I70.22-, I70.23-, I70.24-, and I70.25- ←  
chronic limb-threatening ischemia of native arteries of extremities with gangrene  
critical limb ischemia of native arteries of extremities with gangrene

**Use additional** code to identify the severity of any ulcer (L97.-, L98.49-), if applicable

- I70.261 Atherosclerosis of native arteries of extremities with gangrene, right leg
- I70.262 Atherosclerosis of native arteries of extremities with gangrene, left leg
- I70.263 Atherosclerosis of native arteries of extremities with gangrene, bilateral legs
- I70.268 Atherosclerosis of native arteries of extremities with gangrene, other extremity
- I70.269 Atherosclerosis of native arteries of extremities with gangrene, unspecified extremity

# CODING POINTS

- The codes are organized into six categories by the type of vessel affected:

**I70.2** native artery

**I70.5** bypass graft, nonautologous biological

**I70.3** bypass graft, unspecified type

**I70.6** bypass graft, nonbiological

**I70.4** bypass graft, autologous vein

**I70.7** bypass graft, other

- Each category then has the same coding structure:

## CLI manifestation

- rest pain
- ulceration
- gangrene

## Location

- right leg, left leg
- bilateral legs
- additional sites for ulceration, if applicable

## CLI Coding Logic

- Type of vessel?
- Manifestation?
  - Which leg?
- Location of ulcer?

# KEY IN CRITICAL LIMB ISCHEMIA!

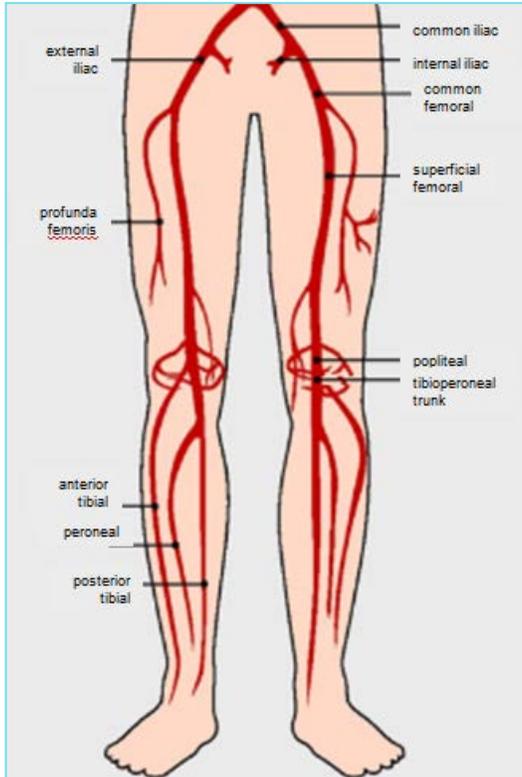
- Use of ICD-10-CM is specifically mandated by HIPAA.
- Index and tabular changes for critical limb ischemia were officially adopted as part of ICD-10-CM by HHS.
- The new index entries and tabular notes are mandated to appear in all versions of ICD-10-CM as of October 1, 2020.
- Coding software and EHRs must now recognize “critical limb ischemia” and “chronic limb-threatening ischemia” as codable diagnoses.
- When these terms are entered, coding software will present choices based on vessel type, manifestation, and location.

~~I70.9, Other  
and unspecified  
atherosclerosis~~

# SAMPLE CODING SCENARIOS FOR CRITICAL LIMB ISCHEMIA



# SAMPLE CASE 1



54 year old Black male who presented with claudication five months ago. Diagnostic angiography showed a chronic total occlusion of the distal popliteal artery on the left with the lesion extending into the anterior tibial artery and tibio-peroneal trunk. He has recently been complaining of intermittent rest pain, placing him at Rutherford class 4. Given his rapid progression to critical limb ischemia, decision was made to proceed with endovascular atherectomy to try to preserve the tibial vessels.

*170.222, Atherosclerosis of native arteries of extremities with rest pain, left leg*

*170.92, Chronic total occlusion of artery of the extremities*

# SAMPLE CASE 1: NATIVE ARTERY, CTO

- Default to native artery (Index)

**Arteriosclerosis, arteriosclerotic (diffuse) (obliterans) (of) (senile) (with calcification) I70.90**  
- with  
-- chronic limb-threatening ischemia -see Arteriosclerosis, with critical limb ischemia  
-- critical limb ischemia  
--- bypass graft I70.329  
---- autologous vein graft I70.429  
---- leg I70.329  
---- nonautologous biological graft I70.529  
---- nonbiological graft I70.629  
---- specified graft NEC I70.729  
--- leg I70.229  
---- left I70.222  
----- with  
----- gangrene (and intermittent claudication, rest pain, and ulcer) I70.262  
----- rest pain (and intermittent claudication) I70.222  
----- ulceration (and intermittent claudication and rest pain) I70.249

- Additional code for CTO (Tabular)

## **I70.2 Atherosclerosis of native arteries of the extremities**

**Use additional code, if applicable, to identify chronic total occlusion of artery of extremity (I70.92)**

## SAMPLE CASE 2

A patient with long history of type 2 diabetes presents with critical limb ischemia, ulceration of right big toe to the subcutaneous tissue with gangrene. When queried, the physician says that the ulcer and gangrene are associated with both diabetic neuropathy and peripheral artery disease.

*E11.52, Type 2 diabetes mellitus with diabetic peripheral angiopathy with gangrene*

*E11.621, Type 2 diabetes mellitus with foot ulcer*

*E11.40, Type 2 diabetes mellitus with neurological complications*

*L97.512, Non-pressure chronic ulcer of other part of right foot with fat layer exposed*

*I70.261, Atherosclerosis of native arteries of extremities with gangrene, right leg*

# SAMPLE CASE 2: CONSIDERATIONS

- When both are present, diabetes and critical limb ischemia are assumed to be related.
- Arteriosclerotic peripheral artery disease I70.2- is coded separately with diabetes.
- Coding PAD separately provides “specificity about the atherosclerosis such as laterality, affected vessel as well as additional manifestations of the disease (ie, claudication, rest pain, etc).”
- “(A)lthough diabetes mellitus may increase the risk of pressure ulcers because of its association with neuropathy and angiopathy,” ICD-10-CM does not classify pressure ulcers as diabetic ulcers.

*AHA ICD-10-CM and ICD-10-PCS Coding Handbook 2020*  
“Diabetic Circulatory Complications”  
“Other Manifestations of Diabetes Mellitus”

*Coding Clinic, 3<sup>rd</sup> Q 2018*  
“Diabetes Mellitus with Arteriosclerotic Peripheral Artery Disease”

*Coding Clinic, 3<sup>rd</sup> Q 2018*  
“Necrotic Pressure Ulcer of Heel with Diabetic Peripheral Vascular Disease and Neuropathy”

# Critical Limb Ischemia Coding in ICD-10-CM

**QUESTIONS?**

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