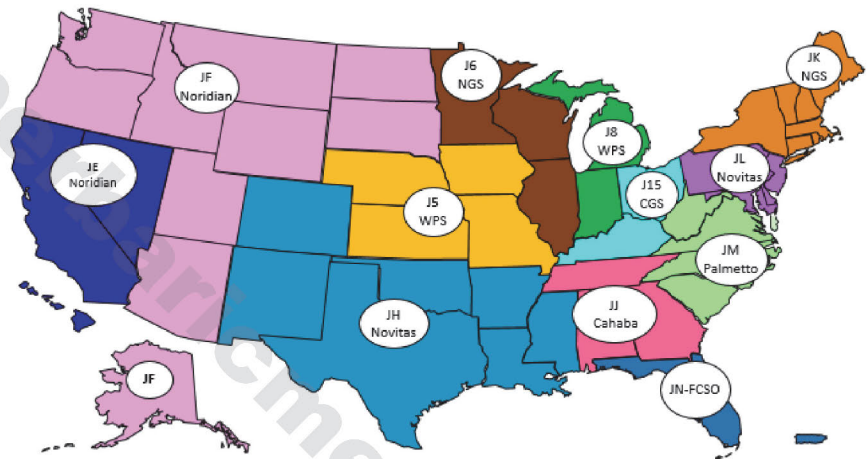


Medicare Rules for Transcutaneous Oximetry

Robert Sheffield, BA, CHT and Valerie Short, RN, ACHRN, CMBS / March 2016

INTRODUCTION

In January of 2011, the Current Procedural Terminology (CPT) definition of transcutaneous oximetry (TCOM) changed. This altered the study we must perform and the way it is billed. Individuals who perform TCOM studies should be aware of these changes and ensure compliance with all applicable rules. This article will explain the CPT definition and discuss billing requirements of Medicare payers.



OBJECTIVES

On completion of this activity, the reader should be able to:

1. Explain the source of billing rules for TCOM.
2. Explain the CPT definition of TCOM.
3. Identify the appropriate CPT code for a TCOM study.
4. Discuss who is qualified to perform a TCOM study.
5. Locate your TCOM LCD.

ABBREVIATIONS USED IN THIS ARTICLE

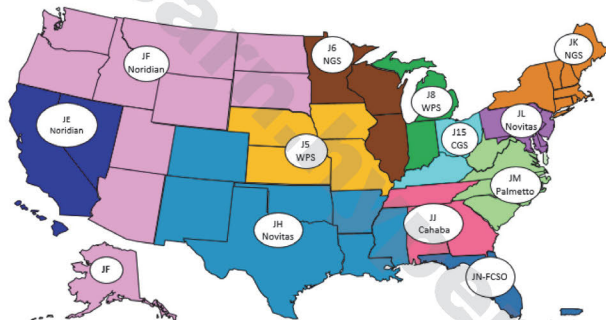
ABI: Ankle/Brachial Index
 CMS: Centers for Medicare & Medicaid Services
 CPT®: Current Procedural Terminology
 LCD: Local Coverage Determination
 MAC: Medicare Administrative Contractor
 NCD: National Coverage Determination
 RPI: Regional Perfusion Index
 TCOM: Transcutaneous Oximetry

REIMBURSEMENT BASICS

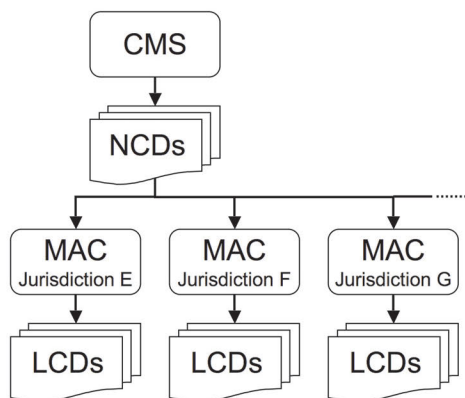
When discussing billing issues, we talk about Medicare rules because the majority of patients receiving hyperbaric treatment in hospital based facilities are Medicare beneficiaries. The Medicare rules discussed in this article do not necessarily apply to other medical insurances. The government agency responsible for the Medicare program is Centers for Medicare & Medicaid Services (CMS). Since 2005, the Medicare program has been administered by several medical insurance companies called Medicare Administrative Contractors (MAC). Prior to the MAC system, the medical insurance companies were called "intermediaries" for hospital billing and "carriers" for physician billing. In many states, the hospital intermediary and the physician carrier were two different companies. In some states, parts of the state billed to one company and other parts of the state billed to a different company. The MAC system was created to limit the number of insurance companies involved and to have hospitals and physicians in the same area billing to the same company. Medicare began round one of the MAC system in 2005. The US was divided into 15 jurisdictions (J1-J15); and MAC contracts

were put out for bid in each jurisdiction. Between 2005 and 2010, MAC contracts were awarded in most of the 15 jurisdictions; but in some jurisdictions, a MAC award did not occur. Those jurisdictions were administered by their legacy intermediary and carrier rather than a MAC. Round two of the MAC implementation began in 2010. In round two, the 15 jurisdictions were consolidated into 10 (JE-JN); and CMS began putting out new MAC contracts for bid. At the time of this writing: 8 of the 10 MAC jurisdictions are settled; two of them (JG and JI) are still being administered by the MACs with the J5, J6, J8, and J15 contract award.

MAC Jurisdictions
as of December 2015



CMS determines the services covered by the Medicare program. For each type of covered service, CMS has written a National Coverage Determination (NCD). NCDs are very basic, and do not provide specific guidance. Each MAC has the authority to write its own coverage policies for Medicare covered services. The MAC's policy is called a Local Coverage Determination (LCD). A LCD specifies the conditions, limitations, and documentation requirements in order for the MAC to pay for a particular service. Because each MAC writes its own LCDs, the LCDs about the same service from different MACs are likely to be different. Some MACs do not have a LCD for TCOM. If your MAC does have a LCD for TCOM, it will be published on the CMS website. LCDs for TCOM are typically titled something like, "Noninvasive Vascular Studies". TCOM will be one of several different studies addressed in the LCD.



When a hospital or physician bills a MAC for services, CPT codes are used to describe the services provided. CPT codes are generated by the American Medical Association, and updated annually. A new edition of the CPT book is published each year. New or altered CPT codes go into effect on January 1st of each year. So, each year there is a possibility that LCDs may change because of added, deleted, or altered CPT codes. This is what happened in January 2011; there was a significant change to the CPT codes for TCOM. Fortunately, there have been no significant changes to the TCOM codes since the 2011 CPT book.

CPT CODES FOR TCOM

In the CPT book, there are currently two codes available to describe a TCOM: 93922 and 93923. The two codes are not specific to TCOM, but actually describe three different studies under the heading "Noninvasive Vascular Diagnostic Studies", subheading "Extremity Arterial Studies". The code 93922 describes a "limited" study, and 93923 describes a "complete" study. A simplified version of 93922 is:

93922: Limited bilateral noninvasive physiologic studies of upper or lower extremity arteries

The actual definition of 93922 is longer and more complex; but don't fear because it will be broken down and explained in a moment. The following is the complete definition of 93922 from the 2016 CPT book:

93922: Limited bilateral noninvasive physiologic studies of upper or lower extremity arteries, (eg, for lower extremity: ankle/brachial indices at distal posterior tibial and anterior tibial/dorsalis pedis arteries plus bidirectional, Doppler waveform recording and analysis at 1-2 levels, or ankle/brachial indices at distal posterior tibial and anterior tibial/dorsalis pedis arteries plus volume plethysmography at 1-2 levels, or ankle/brachial indices at distal posterior tibial and anterior tibial/dorsalis pedis arteries with transcutaneous oxygen tension measurements at 1-2 levels)

All the stuff in parentheses, "(eg, for lower extremity: ankle/brachial ...)" exists to elaborate on the meaning of "noninvasive physiologic studies". This elaboration includes a repetitive definition of three different studies that qualify as 93922: (1) bidirectional Doppler waveform recording; (2) volume plethysmography; (3) transcutaneous oxygen tension measurements. At the front of each of these three is a requirement to perform an ankle/brachial index (ABI). The ABI is to be done at two different arteries (distal posterior tibial and anterior tibial/dorsalis pedis arteries). Apparently, you have your choice of arteries for the second one (either anterior tibial or dorsalis pedis). When the study is performed on the upper extremities, the ABI at two arteries is replaced with, "Doppler-determined systolic pressures" because people don't have ankles on their upper extremities.

In the parenthetical stuff, you see the term "1-2 levels". What is a level? According to the CPT book, "Potential levels include high thigh, low thigh, calf, ankle, metatarsal and toes." The term "level" does not mean "electrode". It is common practice to place TCOM electrodes in pairs (e.g. two at the calf, one on each side of the leg). It does not matter that you placed two electrodes, because they were at the same level of the extremity (the calf).

So stop counting electrodes (or “sites”); and start counting levels (e.g. high thigh, low thigh, calf, ankle, metatarsal, toes).

Now let's look at a simplified version of 93923:

93923: Complete bilateral noninvasive physiologic studies of upper or lower extremity arteries, 3 or more levels, or single level study with provocative functional maneuvers

This is essentially the same definition as 93922, with two exceptions. First, “1-2 levels” is replaced with “3 or more levels”. So, less than 3 levels is a “limited” study and 3 or more levels is a “complete” study. Second, the definition of 93923 is met one of two ways: a study at 3 or more levels; or a single level study with provocative maneuvers added.

The actual definition of 93923 is:

93923: Complete bilateral noninvasive physiologic studies of upper or lower extremity arteries, 3 or more levels (eg, for lower extremity: ankle/brachial indices at distal posterior tibial and anterior tibial/dorsalis pedis arteries plus bidirectional, Doppler waveform recording and analysis at 3 or more levels, or ankle/brachial indices at distal posterior tibial and anterior tibial/dorsalis pedis arteries plus volume plethysmography at 3 or more levels, or ankle/brachial indices at distal posterior tibial and anterior tibial/dorsalis pedis arteries with transcutaneous oxygen tension measurements at 3 or more levels), or single level study with provocative functional maneuvers (eg, measurements with postural provocative tests, or measurements with reactive hyperemia)

The stuff in parentheses contains the same repetitive definition of the same three studies identified in the definition of 93922: (1) bidirectional Doppler waveform recording; (2) volume plethysmography; (3) transcutaneous oxygen tension measurements. It also contains the same requirement to perform an ankle/brachial index (ABI) at two arteries. The second set of parentheses (at the end) is an explanation of “provocative functional maneuvers”. It means, “measurements with postural provocative tests, or measurements with reactive hyperemia”. In a TCOM study, an extremity elevation is a postural provocative test. Oxygen challenge may or may not count. An oxygen challenge is not something one would normally do in a noninvasive vascular study (other than a TCOM study); so there is a question whether or not a particular MAC would consider this a provocative functional maneuver.

In case you missed it, both the 93922 and 93923 studies are meant to be bilateral, meaning the ankle/brachial indices and TCOM measurements are on both extremities. It is fairly common to perform a TCOM on only one extremity (e.g. when the patient only has one extremity). If this is the case, the CPT code may be different. So, let's try to simplify the issue of what CPT code to pick.

Choosing the Right CPT Code

We are about to use something called a “modifier”. What is a modifier? Modifiers are two digit codes (numbers or letters),

added to the end of a CPT code. Modifiers are used to further describe the CPT code. There are lots of modifiers. One example is modifier “52”, which means the service described by the CPT code was shortened or reduced. When a hospital charges for a TCOM study, it basically has three choices: complete, limited, and limited with modifier 52 (reduced service). The following is a scoring system to help you decide what CPT code is appropriate:

(Choose one item from each of three categories and add up all points that apply)

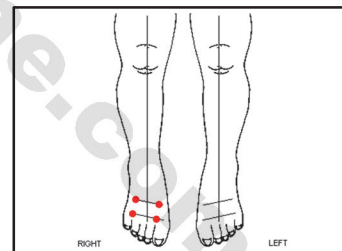
NUMBER OF LIMBS	NUMBER OF LEVELS	PROVOCATIVE MANUEVER
<ul style="list-style-type: none"> TCOM of one limb = 1 point TCOM of both limbs = 2 points 	<ul style="list-style-type: none"> Less than 3 levels = 0 points 3 or more on one limb = 1 point 3 or more on both limbs = 2 points 	<ul style="list-style-type: none"> None = 0 points 1 or more = 2 points

TOTAL POINTS	DESCRIPTION	HOSPITAL CPT CODE
1	Limited TCOM study, one limb	93922-52
2	Limited TCOM study	93922
3	Limited TCOM study	93922
4	Complete TCOM study	93923
5	Complete TCOM study	93923
6	Complete TCOM study	93923

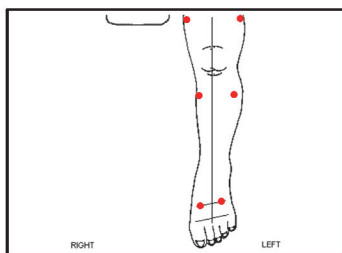
Some hospitals add modifier “TC” to their CPT code for the TCOM, indicating they are charging only the “technical component” of performing the TCOM. Physician charges for TCOM are usually for the interpretation of a TCOM billed by the hospital (performed by a technician or nurse). The physician bills either limited or complete, based on what the hospital has billed. Modifier 52 is not used on the physician bill. The physician will add modifier “26”, indicating “interpretation only”.

DESCRIPTION	PHYSICIAN CPT CODE
Limited TCOM study, interpretation only	93922-26
Complete TCOM study, interpretation only	93923-26

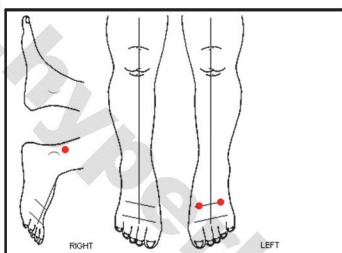
Case 1: The patient has an ulcer on the right 1st toe. ABI values are recorded at the distal posterior tibial and dorsalis pedis arteries of both legs. Four TCOM electrodes are placed on the right foot at two different levels (base of toes, metatarsal). Baseline air values are recorded. There is no oxygen breathing and no extremity elevation. Scoring: TCOM of one leg earns 1 point. There are no other points earned. Total of 1 point justifies a CPT code 93922-52 (limited study, one limb) for the hospital. The physician would bill 93922-26 for interpreting this TCOM.



Case 2: The patient who previously had an above the knee amputation of the right leg is having the left leg evaluated. ABI values are recorded at the distal posterior tibial and dorsalis pedis arteries of the left leg. Six TCOM electrodes are placed at three different levels (metatarsal, calf, and low thigh) on the left leg. The baseline air values at all six electrodes are relatively normal, so the physician does not wish to see oxygen breathing or extremity elevation values. Scoring: TCOM of one leg earns 1 point. Having 3 or more levels on one leg earns another 1 point. Total of 2 points justifies a CPT code 93922 (limited study) for the hospital. The physician would bill 93922-26 for interpreting this TCOM.



Case 3: The patient has an ulcer on the right ankle. ABI values are recorded at the distal posterior tibial and dorsalis pedis arteries of both legs. One TCOM electrode is placed proximal to the ulcer on the right ankle; two electrodes are placed at the metatarsal level (one medial/one lateral) of the left foot; and one electrode is placed on the chest (left second intercostal space) so a regional perfusion index (RPI) can be calculated. The baseline air values are abnormal, and the physician wishes to see oxygen breathing and extremity elevation values. Scoring: TCOM of both legs earns 2 points. The chest electrode is not counted as a level. Although chest leads are used by some hyperbaric facilities in their TCOM studies, neither the CPT definition nor any LCD addresses chest readings or RPI values as a component of a TCOM study. Addition of extremity elevation earns another 2 points. If there had not been an extremity elevation, the addition of oxygen challenge may or may not count as a provocative maneuver, depending on the opinion of your MAC. Total of 4 points justifies a CPT code 93923 (complete study) for the hospital. The physician would bill 93923-26 for interpreting this TCOM.



All of the above information about choosing the CPT code for TCOM is derived from *Current Procedural Terminology (CPT®) 2016* and from clinical examples in *CPT® Changes 2011*.

QUALIFICATIONS TO PERFORM A TCOM

Having a TCOM competency in your personnel file will probably not be recognized by your MAC. Having a CHT or CHRN may or may not be recognized by your MAC. There is not one rule that applies to everyone. It depends on your MAC and its LCD. Some MACs have no LCD for TCOM. This means you have no specific guidance about who might be qualified. If your MAC does have an LCD for TCOM, it is likely to set limitations on who may perform these studies. The following is a quote from the Wisconsin Physician Services LCD titled "Non-Invasive Vascular Studies (L27355)":

The accuracy of non-invasive vascular diagnostic studies depends on the knowledge, skill, and experience of the technologist and interpreter. Consequently, the physician performing and/or interpreting the study must be capable of demonstrating documented training and experience. A vascular diagnostic study may be personally performed by a physician, a certified technologist, or in a certified vascular testing lab. Services will be considered medically reasonable and necessary only if performed by appropriately trained providers.

1. All non-invasive vascular diagnostic studies must be performed meeting at least one of the following:
 - a. performed by a licensed qualified physician, or
 - b. performed by a technician who is certified in vascular technology, or
 - c. performed in facilities with laboratories accredited in vascular technology.
2. A licensed qualified physician for these services is defined as:
 - a. Having trained and acquired expertise within the framework of an accredited residency or fellowship program in the applicable specialty/subspecialty in ultrasound (US) or must reflect equivalent education, training, and expertise endorsed by an academic institution in ultrasound or by applicable specialty/subspecialty society in ultrasound, or
 - b. Has the Registered Vascular Technologist (RVT), Registered Physician Vascular Interpretation (RPVI), or ASN: Neuroimaging Subspecialty Certification; and
 - c. Is able to provide evidence of proficiency in the performance and interpretation of each type of diagnostic procedure performed.
3. Nonphysician personnel performing tests must demonstrate basic qualifications to perform tests and have training and proficiency as evidenced by licensure or certification by an appropriate State health or education department. In the absence of a State licensing board, non-physician personnel must be certified by an appropriate national credentialing body.
4. Appropriate personnel certification includes the American Registry of Diagnostic Medical Sonographers (ARDMS) or Registered Vascular Technologist (RVT) credential; or Cardiovascular Credentialing International's Registered Vascular Specialist (RVS).
5. Laboratories accredited by the International Accreditation Commission (IAC), American College of Radiology (ACR) Vascular Ultrasound Program, or Joint Commission must follow the accrediting body's standards.
6. Transcutaneous oxygen tension measurement should be performed by personnel possessing the following credentials obtained from the National Board of Diving and Hyperbaric Medicine Technology (NBDHMT): Certified Hyperbaric Technologist (CHT), or Certified Hyperbaric Registered Nurse (CHRN).

Remember that LCDs from different MACs are worded differently. The first two paragraphs in the above quote are very common among different MACs. The wording may vary somewhat, but most MACs have taken the position that only certain people are qualified to perform and/or interpret these diagnostic studies. The third paragraph is not very common. Most MACs do not recognize a CHT or CHRN credential as a qualification to perform these studies. The MACs that do recognize the CHT/CHRN credential require you to actually have one of those certifications. Proof of TCOM training or TCOM competency is not good enough. Also, the MACs that do recognize CHT/CHRN certification, only recognize it for the purpose of performing TCOM, not Doppler or plethysmography.

The following is a very common and potentially costly misconception: "We have been billing this way for a while and it always gets paid; so we must be doing it right". The only thing required for a hospital to be paid is to transmit a string of numerical codes (e.g. place of service, CPT code, modifiers) that the MAC's software finds compatible with one another. The documentation

requirements you might find in a TCOM LCD (e.g. medical necessity, ABI values, qualifications of the person performing the study) are not coded and transmitted with the bill. So, bills are processed without the MAC knowing if you have complied with these documentation requirements. However, the MAC expects you to have this documentation in case they choose to ask for it. The MAC is entitled to hold a bill and ask for additional documentation, or to perform a post-payment audit of past bills to ensure you had all the documentation in place at the time the service was provided. At any time, your hospital may have to send documentation of your qualification to perform a TCOM (as well as all the other documentation required by your LCD). If a hospital or physician bills for a service that does not meet all the requirements of the corresponding LCD, the MAC can ask for the money to be returned plus penalties.

If your MAC does not have a LCD for TCOM, or the LCD is unclear, your hospital billing department can contact the MAC and ask them to clarify the coverage policy.

FINDING YOUR LCD

It is wise to identify your MAC and the LCD that applies, and to read the entire LCD. The MAC may provide additional explanation in the LCD or have links to related articles or attachments at the end of the LCD. The following series of screen shots illustrates how to locate an LCD for TCOM:

- Go to the following website: <https://www.cms.gov/medicare-coverage-database/overview-and-quick-search.aspx>
- On the right side of the screen, change "OR BY DOCUMENT TYPE:" to "Local Coverage Documents".
- On the right side of the screen, change "Select Geographic Area/Region:" to {your state/region}.
- On the right side of the screen, under "Select One or Both:" type "93922" into the box labeled "Enter CPT/HCPCS Code".

- For this example, Kansas was chosen.
- Click on "SEARCH BY TYPE".

- Scroll the page down so you can see the LCDs at the bottom.
- This example shows one policy, L35761. The letter "L" at the beginning of the LCD ID number indicates an active LCD. If you see an LCD ID number with "A" at the beginning, this indicates an article offering additional information about the CPT code you searched. If your search happens to locate different contractor names, your hospital billing department can guide you to the proper contractor.
- Click on the LCD ID # (L35761) to open the document for viewing or printing.

- In this example, the contractor name is listed multiple times to indicate all the different contractor numbers and areas/jurisdictions covered by this policy.
- Scroll down to view the LCD information (shown on next page).

Local Coverage Determination (LCD):
Non-Invasive Peripheral Arterial Vascular Studies (L35761)

Select the **Print Complete Record**, **Add to Basket** or **Email Record** Buttons to print the record, to add it to your basket or to email the record.

Printing Note:
To print an entire document, including all codes in all code groups, use the **Need a PDF?** Button or the **Print Complete Record** Button.
To print only the current visible page contents, use the **Print** Button in the page header.

Section Navigation

[Expand All](#) | [Collapse All](#)

Contractor Information

CONTRACTOR NAME	CONTRACT TYPE	CONTRACT NUMBER	JURISDICTION	STATE(S)
Wisconsin Physicians Service Insurance Corporation	MAC - Part A	05101 - MAC A	N/A	Iowa
Wisconsin Physicians Service Insurance Corporation	MAC - Part B	05102 - MAC B	N/A	Iowa
Wisconsin Physicians Service Insurance Corporation	MAC - Part A	05201 - MAC A	N/A	Kansas
Wisconsin Physicians Service Insurance Corporation	MAC - Part B	05202 - MAC B	N/A	Kansas
Wisconsin Physicians Service Insurance Corporation	MAC - Part A	05301 - MAC A	N/A	Missouri - Entire State
Wisconsin Physicians Service Insurance Corporation	MAC - Part B	05302 - MAC B	N/A	Missouri - Entire State
Wisconsin Physicians Service Insurance Corporation	MAC - Part A	05401 - MAC A	N/A	Nebraska
Wisconsin Physicians Service Insurance Corporation	MAC - Part B	05402 - MAC B	N/A	Nebraska
Wisconsin Physicians Service Insurance Corporation	MAC - Part A	05901 - MAC A	N/A	Alaska Alabama Arkansas Arizona Connecticut Florida Georgia

LCD Information

Document Information

LCD ID
L35761

Original ICD-9 LCD ID
N/A

LCD Title
Non-Invasive Peripheral Arterial Vascular Studies

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Title XVIII of the Social Security Act section 1833 (e) prohibits Medicare payment for any claim which lacks the necessary information to process the claim.

Title XVIII of the Social Security Act section 1862 (a) (1) (A) allows coverage and payment of those items or services that are considered to be *medically reasonable and necessary for the diagnosis or treatment of illness or injury or to improve the functioning of a malformed body member*.

Title XVIII of the Social Security Act section 1862 (a) (1) (D) excludes Medicare payment for any expenses incurred for items or services that are investigational or experimental.

Title XVIII of the Social Security Act section 1862 (a) (7) excludes routine physical examinations and services from Medicare coverage.

KEY POINTS IN THIS ARTICLE

- Specific details of Medicare coverage for TCOM are found in a LCD, titled something like “Non-Invasive Vascular Studies”. LCDs are written by MACs; and they differ from one another. Know your MAC and find the right LCD.
- The CPT codes used to describe a TCOM are 93922 and 93923. The two codes differ by the number of levels in the TCOM study. Levels are not the same as electrodes or sites. Examples of levels are: high thigh, low thigh, calf, ankle, metatarsal, toes.
- When selecting the appropriate CPT code for a TCOM, the relevant information is: one limb vs. bilateral; less than 3 levels vs. 3 or more levels; addition of a provocative functional maneuver. Oxygen challenge may or may not be considered a provocative functional maneuver by your MAC.
- Documentation of ABI values at two arteries is required in addition to the TCOM values.
- A CHT/CHRN may or may not be considered qualified by your MAC to perform a TCOM. Most MACs do not recognize the CHT/CHRN credential. Documentation of your qualification is likely a requirement of your MAC.

REFERENCES

1. *CPT® Changes 2011*. American Medical Association. Chicago, 2011.
2. *Current Procedural Terminology (CPT®)*. American Medical Association. Chicago, 2016.
3. Local Coverage Determination (LCD) for Non-Invasive Peripheral Arterial Vascular Studies (L35761). Wisconsin Physician Services. Updated 10/01/2015.
4. Centers for Medicare & Medicaid Services, A/B MAC Procurement and Implementation. Available at: <https://www.cms.gov/MedicareContractingReform/ABMAC/list.asp#TopOfPage>. Accessed March 24, 2016.

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