CENTER FOR HEALTH AND SAFETY IN THE WORKPLACE

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REPORT

RAND/UCLA Quality-of-Care Measures for Carpal Tunnel Syndrome

Appendix IV, Part B: Quality Measures: Materials for Scoring Main Set of Measures (Guidance Document)

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Main Set of Quality Measures: Guidance Document

The purpose of the Guidance Document is to provide detailed definitions and instructions for each measure. The Scoring Instructions provide basic information that can be used to determine how to score the quality measures and related variables. Data are to be recorded on the separate Data Form. The Guidance Document may repeat information in the Scoring Instructions and then provide additional detail. Abstractors should refer to the Guidance Document before scoring the measures and variables the first time, if they encounter unusual situations, or if they have any detailed questions.

In these documents, questions are numbered as followed:

- Questions pertaining to section or subsection eligibility are indicated by an “E” after the question.
- Questions pertaining to individual measures are indicated by “M” after the question number.
  - “ME” means that the question pertains to eligibility for the measure.
  - “MC” means that the question addresses components of an individual measure.
  - “MA” means that the question addresses whether or not care adhered to the requirements of the measure.
- Additional variables that are not directly related to an individual measure are indicated by “V” after the question number.
- In Section 1, score questions for all patients. For those who prove eligible based on responses to these questions, some or all of Sections 2 through 15 will apply.

DEFINING THE STUDY PERIOD

The users of these measures need to consider how to define the study period. Ideally, the study period for a patient should start with the initial presentation of new CTS, or of a presentation of recurrent CTS. At least one year of follow-up is helpful to determine the clinical course, including surgery and the first release to return to work.

In workers’ compensation settings, one approach would be to start the study period at the initiation of a workers’ compensation claim, and follow subjects for up to two years into this claim. For patients who received care prior to the initiation of the workers’ compensation claim and for whom those records are available, it would be preferable to use the initial presentation with CTS symptoms as the start of the study period and have two years of follow-up from that point. If the records from this initial period are unavailable, then care should start with the available records. If the patient has had long-standing CTS, then the most recent two-year period should be examined.
SECTION 1: ANCILLARY VARIABLES: DEMOGRAPHICS AND DETERMINING STUDY HAND

Sections 1 and 2 involve variables that are not directly related to a particular measure.

1.01.V Basis for Patient Selection

- Administrative data containing ICD-9 and CPT codes can be used to identify populations of patients in each category. Use only the four- or five-digit ICD-9 codes.
- If ICD-9 and CPT codes were used to identify eligible patients, choose the category that matches the basis for selecting this patient.
- **Neurologic disease other than CTS**: Patients who have neurological conditions that can cause paresthesias or numbness in the fingers, excluding patients diagnosed with CTS.
  - 353 Nerve root and plexus disorders
    - 353.0 Brachial plexus lesions
      - Cervical rib syndrome
      - Costoclavicular syndrome
      - Scalenus anticus syndrome
      - Thoracic outlet syndrome
    - 353.2 Cervical root lesions, not elsewhere classified
  - 354 Mononeuritis of upper limb and mononeuritis multiplex
    - **NOT 354.0 or 354.1 (covered by Category 3)**
    - 354.2 Lesion of ulnar nerve
      - Cubital tunnel syndrome
      - Tardy ulnar nerve palsy
    - 354.3 Lesion of radial nerve
      - Acute radial nerve palsy
    - 354.4 Causalgia of upper limb
    - 354.8 Other mononeuritis of upper limb
    - 354.9 Mononeuritis of upper limb, unspecified
  - 722.0 Displacement of cervical intervertebral disc without myelopathy
    - Neuritis (brachial) or radiculitis due to displacement or rupture of cervical intervertebral disc
    - Any condition classifiable to 722.2 of the cervical or cervicothoracic intervertebral disc
      - Discogenic syndrome NOS
      - Herniation of nucleus pulposus NOS

Appendix IV: Main Set of Quality Measures: Guidance Document IV-B-3
Intervertebral disc NOS:
  Extrusion
  Prolapse
  Protrusion
  Rupture

723.4  Brachial neuritis or radiculitis NOS
Cervical radiculitis
Radicular syndrome of upper limbs

907  Late effects of injuries to the nervous system
  907.3  Late effect of injury to nerve root(s), spinal plexus(es), and other nerves of trunk (Late effect of injury classifiable to 953-954)
  907.4  Late effect of injury to peripheral nerve of shoulder girdle and upper limb (Late effect of injury classifiable to 955)

955  Injury to peripheral nerve(s) of shoulder girdle and upper limb
  955.0  Axillary nerve
  955.1  Median nerve
  955.2  Ulnar nerve
  955.3  Radial nerve
  955.4  Musculocutaneous nerve
  955.5  Cutaneous sensory nerve, upper limb
  955.6  Digital nerve
  955.7  Other specified nerve(s) of shoulder girdle and upper limb
  955.8  Multiple nerves of shoulder girdle and upper limb
  955.9  Unspecified nerve of shoulder girdle and upper limb

- Non-neurologic disease: Patients who have other conditions that can cause pain in the hand or forearm.

170  Malignant neoplasm of bone and articular cartilage
  170.5  Short bones of upper limb
    Carpal
    Cuneiform, wrist
    Metacarpal
    Navicular, of hand
    Phalanges of hand
    Pisiform
Scaphoid (of hand)
Semilunar or lunate
Trapezium
Trapezoid
Unciform

681.0 Cellulitis and abscess of finger
682.4 Other cellulitis and abscess, Hand, except fingers and thumb
  Wrist
726.4 Enthesopathy of wrist and carpus
  Bursitis of hand or wrist
  Periarthritis of wrist
727 Other disorders of synovium, tendon, and bursa
  727.04 Radial styloid tenosynovitis
    de Quervain's disease
  727.05 Other tenosynovitis or hand and wrist
  727.2 Specific bursitides often of occupational origin
  "Beet:
    Elbow
    Hand
    Knee
    Chronic crepitant synovitis of wrist
  Miners':
    Elbow
    Knee
  727.4 Ganglion and cyst of synovium, tendon, and bursa
  727.63 Rupture of extensor tendons of hand and wrist
  727.64 Rupture of flexor tendons of hand and wrist

814 Fracture of carpal bone(s)
833 Dislocation of wrist
834 Dislocation of finger
842 Sprains and strains of wrist and hand
  842.0 Wrist
  842.00 Unspecified site
842.01 Carpal (joint)  
842.02 Radiocarpal (joint) (ligament)  
842.09 Other  
Radioulnar joint, distal  
905 Late effects of musculoskeletal and connective tissue injuries  
905.2 Late effect of fracture of upper extremities  
923 Contusion of upper limb  
923.2 Wrist and hand(s), except finger(s) alone  
923.20 Hand(s)  
923.21 Wrist  
959 Injury, other and unspecified  
959.4 Hand, except finger  
959.5 Finger  
Fingernail  
Thumb (nail)  

- **CTS without surgery:** Patients who have been diagnosed with CTS but have NOT undergone carpal tunnel surgery. Patients who have other disorders in addition to CTS belong in this category, even if those additional disorders correspond to ICD-9 codes for conditions listed above.
  
  - ICD-9 Code  
    354.0 Carpal tunnel syndrome  
    354.1 Other lesion of median nerve  
    Median nerve neuritis  
  - NOT CPT Codes  
    29848 Endoscopic carpal tunnel release  
    64721 Neuroplasty and/or transposition; median nerve at carpal tunnel  

- **CTS with surgery:** Patients who have been diagnosed with CTS and have undergone carpal tunnel release surgery. Patients should have both the ICD-9 code and one of the CPT codes:

  - ICD-9 Code  
    354.0 Carpal tunnel syndrome  
    354.1 Other lesion of median nerve, Median nerve neuritis  
  - CPT Codes  
    29848 Endoscopic carpal tunnel release  
    64721 Neuroplasty and/or transposition; median nerve at carpal tunnel  

1.02.V Study Eligibility: Patient Has History of Hand or Forearm Complaints
To eliminate patients who do not have any symptoms that could be CTS, the medical record must indicate that the patient has experienced pain, paresthesias or numbness in the hand or forearm at some time. Most of the remaining patients should be eligible for one or more measures.

- Abstractors do not need to review records from outside the study period to determine whether the patient has had any of these symptoms. Any documentation that the patient has had these symptoms currently or in the past will suffice, including a diagnosis of CTS.
- This question excludes patients from Categories 1 and 2 who never had symptoms that could be mistaken for CTS.
- Paresthesias: Abnormal skin sensations (such as tingling or tickling or itching or burning) usually associated with peripheral nerve damage, often with no apparent physical cause. This includes tingling.
- Tingling: Stinging or prickling sensation, a type of paresthesia.
- Numbness: Loss of the sensation of feeling.

1.03.V Age at End of Study Period

- Patient age at the end of the study period.

1.04.V Gender

1.05.V Race

- Race is typically self-reported. E.g., people of mixed race can choose how to identify themselves.

1.06.V Ethnicity

- Hispanic ethnicity is typically self-reported.
- It is reported separately from race because some people of Hispanic ethnicity are black.

1.07.V Occupation

- As documented on the Workers’ Compensation Claim Form.

1.08.V Zip Code of Patient Residence

- As documented on the Workers’ Compensation Claim Form.
- This variable is optional. Zip code can, when necessary, be used to impute household income based on U.S. Census data.

1.09.V Which Hand(s) Have Workers’ Compensation Claims

- Select one option.

1.10.V Handedness

- Identify the dominant hand.
- “Dominant hand” means the one the patient uses more, such as being right-handed vs. left-handed.

1.11.V Bilateral Symptoms

- Symptoms ascribed to CTS occurring in both hands at any point during the study period, not necessarily simultaneously.
1.12.V Hand That Developed Symptoms First

- Select one option.

1.13.V Study Hand When Patient Has Bilateral Symptoms

- If it is initially unclear whether the symptoms are bilateral or whether the patient is right-handed or left-handed, this information may become clear after reviewing additional portions of the chart.
  - If this is the case, rescore questions 1.10.V, 1.11.V, and 1.12.V after the additional information is available.
  - For any quality measures that have already been scored, do not rescore them using the new definition of the study hand because it is unlikely that the affected hands changed across the visits.
  - For measures that have not yet been scored, do use the new definition of the study hand.

- If the hand being discussed cannot be determined during a particular visit, then assume the care described pertains to the hand selected for use in scoring the measures.

- Comment: The rationale for this system of choosing the study hand is as follows:
  - The study hand should be the hand affected first, since any assessments or treatments that pertain to both hands (such as identifying medical risk factors, for example) will be performed for that hand and may not be repeated after the symptoms occur in the second hand.
  - Symptoms are more likely to occur in the dominant hand than the non-dominant one, and symptoms in the dominant hand are more likely to affect occupational and non-occupational functioning.
  - We considered and chose not to include severity as an additional basis for choosing the study hand, for two reasons. First, assessing severity is complicated and may require a full review of the medical record before the study hand could even be chosen. And second, we want to include patients with a range of symptom severity so that we can assess quality across the full spectrum of the disorder. This is particularly important for the appropriateness of surgery, because there are some strong contra indications to surgery for certain patients with mild CTS.

- The first preference for identifying the study hand is based on the hand covered by a workers’ compensation claim. If both hands are covered by a claim, then the alternative hierarchy is based on which hand developed symptoms first. If it’s not clear, then the dominant hand is selected. If it’s not clear which hand developed symptoms first and hand dominance is not clear, the right hand should be used as default for the study hand. If neither hand is covered by a claim, the same hierarchy is used to determine the study hand.
SECTION 2: MILESTONES FOR THE CURRENT EPISODE OF CTS

- The milestones and associated criteria only apply to the “study hand.” Assume all statements below refer to the study hand unless otherwise specified.

- Several of the milestones pertain to questions in the Scoring Instructions. Some of the milestones are drawn from the medical record and others are drawn from the workers’ compensation claim form.

- Defining an “episode” of CTS: Because CTS is a chronic and often recurring illness, patients may experience multiple symptomatic exacerbations separated by periods with few to no symptoms. The purpose of defining an “episode” is to clarify when various measures should apply to patients who have a new exacerbation of their symptoms in the setting of a prior history of CTS. Thus, an episode of CTS includes a set of clinical events pertaining to the appearance or reappearance of CTS symptoms, their effect upon the patient, any diagnostic approaches employed by providers who treat musculoskeletal disorders, any therapeutic approaches employed by those providers, and the effects of those therapies on the patient.

  - If the patient has NOT had symptoms in the same hand or forearm or a diagnosis of CTS before the current study period, then the events during the current study period obviously represent a new episode of CTS.

  - If the patient has had symptoms in the same hand or forearm or a diagnosis of CTS before the current study period, then several factors determine: (1) whether the events during the current study period represent a new episode of CTS, and (2) when that new episode started.

    - If the patient has had symptoms in the same hand or forearm or a diagnosis of CTS before the current study period and has not received care for it for two years, any reappearance or substantial worsening of the symptoms occurring after those two years and resulting in the patient seeking care can be considered the start of a new episode. The symptoms do not have to completely resolve during the two years when they did not obtain care. The start of the new episode was when the patient first sought care for the worsening symptoms and could have occurred before, at the same time as, or after the current study period.

    - If the patient has had symptoms in the same hand or forearm or a diagnosis of CTS before the current study period, has received care, and no gap in care has lasted two years, then there is no new episode. The current episode started in the past when the patient first sought care for the current symptoms.

    - If the patient has had symptoms in the same hand or forearm before the current study period, and has NOT received any care for it ever, then the current and only episode started when the patient first sought care for the symptoms.

- To confirm that an episode is new, look for evidence that the symptoms reported during the current study period are actually old. Use any statements that the patient has not had this before. If there are no such statements, look back through the medical record within 24 months prior to this visit to see whether the patient has had symptoms in this hand or forearm before.

- If milestones associated with the current episode occurred before the study period, write “before study period” instead of the date in Table 2 on the Data Form.
- If there are no data for a particular milestone but it is clear that the milestone preceded the study period write “before study period” in Table 2 for that milestone.

- We expect that the milestones from the medical record and the dates given on the initial workers’ compensation claim form will not always correspond to each other; this is they are recorded separately. In many cases, they will correspond. Consequently, record them separately on the Data Form.

- The dates for several milestones can be for the same visit. For example, if the patient is diagnosed with work-associated symptoms and placed on temporary total disability at their first presentation, the date would be the same for Milestones 1 to 6.

- Paresthesias: Abnormal skin sensations (such as tingling or tickling or itching or burning) usually associated with peripheral nerve damage, often with no apparent physical cause. This includes tingling.

- Tingling: Stinging or prickling sensation, a type of paresthesia.

- Numbness: Loss of the sensation of feeling.

- Provider who treats musculoskeletal disorders: primary care doctor, Internist, Family Physician, general practitioner, Occupational Medicine Physician, Rheumatologist, Pain Specialist, Neurologist, Emergency Medicine Physician, Orthopedist, Psychiatrist, Chiropractor, Oriental Medicine Practitioner (acupuncturist), nurse practitioner or physician assistant practicing under the supervision of one of the above specialties, Neurosurgeon, Physical Therapist, Occupational Therapist, Hand Therapist, or another type of provider who treats musculoskeletal disorders.

- Work-associated CTS symptoms are CTS symptoms that worsen during or after occupational activities. The term does not imply any legal definition of causation, although the patients may have workers’ compensation claims.
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<th>#</th>
<th>Milestones</th>
<th>Definitions</th>
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| **1** | **2.01.V Documentation of Presentation** | - First documentation in the medical record or claim form of new pain, paresthesias, or numbness in the hand or forearm. This could be the first ever or a new recurrence after no treatment for two years, as explained below.  
- This milestone is recording the first time the provider documents the presence of the described symptoms. This milestone does not require that the symptoms be evaluated at this visit.  
- New means the patient has not presented their symptoms to the physician ever before even though they may have been suffering from the symptoms for a long time. For example, if the provider documents at the first visit that the patient has had the symptoms for six months, use the date of the documentation to answer this question and not a date six months prior.  
- New recurrence means there was prior documentation of the described symptoms but there is a period of 2 years prior where there was **no treatment** for the symptoms.  
- If CTS is ultimately suspected or diagnosed in this patient, then the Milestone 1 should refer to the visit at which the patient first presented with symptoms that were ultimately ascribed to CTS. |
| **2** | **2.02.V Evaluation** | - Initial evaluation of those symptoms by any provider who treats musculoskeletal disorders.  
- Providers who treat musculoskeletal disorders can include: Primary care doctor, Internist, Family Physician, general practitioner, Occupational Medicine Physician, Rheumatologist, Pain Specialist, Neurologist, Emergency Medicine Physician, Orthopedist, Physiatrist, Chiropractor, Oriental Medicine Practitioner (acupuncturist), nurse practitioner or physician assistant practicing under the supervision of one of the above specialties, Neurosurgeon, Physical Therapist, Occupational Therapist, Hand Therapist, or another type of provider who treats musculoskeletal disorders.  
- Milestone 2 is the first visit for which a provider who treats musculoskeletal disorders has documented **one of the following, in order of preference:**  
  - **Obtaining history AND examining the hand or forearm at a single visit,**  
  - **Ordering any test** on the hand or forearm, or for the symptoms in the hand or forearm.  
  - **Obtaining history OR examining the hand or forearm, if both are not done at a single visit** If the patient has not had an evaluation that includes both history-taking and physical examination by the third visit, then use the first visit at which either history-taking or physical |
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<td>examination occurred. Count visits at which a provider who treats musculoskeletal disorders documented these symptoms.</td>
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<td>• If CTS is ultimately suspected or diagnosed in this patient, then Milestone 2 should refer to the visit at which the symptoms that were ultimately ascribed to CTS were first evaluated.</td>
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<td>• Obtaining history means more than documenting the existence of the symptoms, it involves qualifying them in at least one way. These qualifications can include onset, timing, associated exacerbating or alleviating factors, severity, detailed information on location (e.g., at the level of the individual finger rather than fingers without specification), description of any sensations or pain, etc.</td>
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<td>o For example, a statement “tingling in fingers of left hand” does not connote obtaining a history. A statement “tingling in fingers of left hand exacerbated by opening jars” does connote obtaining a history.</td>
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<td>• Performing a physical examination means any documentation pertaining to an examination of the study hand or forearm, including “hand examined” or similar statements, notation of physical findings, results of diagnostic maneuvers, etc.</td>
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<td></td>
<td>• Tests for symptoms in the hand or forearm include Electrodiagnostic tests of the upper extremities, imaging of hand/wrist, imaging of wrist/neck, physical examination of upper extremities and neck, and any other diagnostic tests that were performed to evaluate the cause of these symptoms.</td>
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<td>3</td>
<td>2.03.V Suspicion</td>
<td>• First visit for which the medical record indicates that CTS was suspected</td>
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<td>• The first visit having any notation in the medical record that a provider who treats musculoskeletal disorders is looking for CTS or has found evidence of CTS in the patient. This may include statements that the doctor suspects CTS, is testing for CTS, or wishes to confirm diagnoses of CTS, “rule out CTS”, “cannot rule out CTS”, likely CTS. Synonyms for CTS are acceptable, such as median neuropathy, symptoms in median nerve distribution, suggestion of median nerve compression.</td>
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<td>• Note that providers may also document a suspicion of CTS in an implied rather than explicit fashion. Any physical examination maneuver that is mainly performed to assess for CTS should be considered evidence that CTS was suspected, such as Phalen’s, Tinel’s, the median nerve compression test, Durkan’s, square wrist sign, closed fist sign, flick sign, pressure provocation test, tourniquet test, hand elevation test, and the Katz hand diagram.</td>
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<td>• Also count an electrodiagnostic test of the median nerve as evidence that CTS is suspected.</td>
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</table>
| | | • For some patients, a physician may suspect CTS for the first time and diagnose it during the same visit. In this case, write “n/a” under suspected and document the date under diagnosis. If uncertain whether CTS was suspected or diagnosed, assume it was diagnosed. E.g., provider documents “CTS” with no qualifiers indicating how certain they are of the diagnosis, then interpret the records as
<table>
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<tr>
<td>4</td>
<td>2.04.V Diagnosis</td>
<td>• First visit at which CTS was diagnosed.&lt;br&gt;• If the patient has not been diagnosed with CTS before, Milestone 4 is the first visit having any notation in the medical record that the patient has CTS. This includes: “CTS,” median neuropathy, median nerve compression, an electrodiagnostic test interpreted as consistent with CTS, Katz Hand Diagram interpreted as positive, etc.&lt;br&gt;• If the current episode is a recurrence of symptoms, then the first attribution of the current symptoms to CTS is Milestone 4.</td>
</tr>
<tr>
<td>5</td>
<td>2.05.V Work-association</td>
<td>• First visit at which CTS symptoms were judged work-associated.&lt;br&gt;• The first visit having any notation in the medical record that the current symptoms get worse when the patient is working at a job outside of the home.&lt;br&gt;• As with the prior milestones, if the patient has had CTS before but has not been treated for these in the last two years, Milestone 5 is the first notation of work-association for the current symptoms.</td>
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<tr>
<td>6</td>
<td>2.06.V Off Work</td>
<td>• The first visit having any notation in the medical record that a provider recommends or agrees that a patient should stop working due to their CTS symptoms, such as going on temporary total disability.&lt;br&gt;• As with the prior milestones, if the patient has had CTS before but has not been treated for these in the last two years, Milestone 6 is the first notation of being total disability for the current symptoms.</td>
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<tr>
<td>7</td>
<td>2.07.V Surgery</td>
<td>• The first date on which the patient underwent endoscopic or open release of the transverse carpal ligament to relieve symptoms of CTS.&lt;br&gt;• If the patient has had surgery for CTS in the study hand before the study period, the date of that prior surgery is Milestone 7, regardless of whether the CTS has been treated in the last two years or not.&lt;br&gt;  ○ Exclude re-operations (repeat surgery for CTS).</td>
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<tr>
<td>8</td>
<td>2.08.V Release to Return to Work</td>
<td>• The date of the first visit having any notation in the medical record that a provider recommends or agrees that a patient should resume working after being off work or on total temporary disability due to their CTS symptoms.&lt;br&gt;• If the patient has had CTS before but has not been treated for these in the last two years, Milestone 8 is the first notation of the patient being released to return to work after total disability for the current symptoms.</td>
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<td>Milestones From Initial Workers’ Compensation Claim Form</td>
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<tr>
<td>n/a</td>
<td>2.09.V Date of Injury or Illness</td>
<td>From workers’ compensation claim form.</td>
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<tr>
<td>n/a</td>
<td>2.10.V Date of Examination or Treatment</td>
<td>From workers’ compensation claim form.</td>
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SECTION 3: CTS AS POSSIBLE CAUSE OF SYMPTOMS

3.01.E Eligibility for Measures in Section 3

- In straightforward situations, measures 3.02.M and 3.03.M will generally be scored for the visit corresponding to Milestone 2. Unusual circumstances may lead to potential exceptions:
  - These measures will only apply to patients presenting with paresthesias or numbness (with or without pain). It excludes those presenting with only pain, therefore, such patients will have a visit satisfying the definition of Milestone 2 but will not be eligible for these two measures.
  - If providers initially ascribe different symptoms in the hand or forearm (i.e., other than paresthesias, numbness, and tingling in the fingers) to CTS, then such patients will have a visit satisfying the definition of Milestone 2 yet will not be eligible for these two measures.
  - If patients initially present with different symptoms in the hand or forearm, and later develop symptoms of paresthesias, numbness or tingling in the fingers, they will be eligible for these two measures at the evaluation of the later, more characteristic symptoms.

- New symptoms refer to either the first presentation ever with these symptoms, or the first presentation with recurrent symptoms after the patient has not been treated in 2 years. If they have been treated in the last 2 years, these symptoms are not new.

- Paresthesias: Abnormal skin sensations (such as tingling or tickling or itching or burning) usually associated with peripheral nerve damage, often with no apparent visible cause. This includes tingling.

- Numbness: Loss of the sensation of feeling.

- Numbers and names of digits/fingers
  - 1 = thumb
  - 2 = index finger
  - 3 = middle finger
  - 4 = ring finger
  - 5 = pinkie finger.

3.02.M New symptoms characteristic of CTS require detailed assessment

- Location: Verbal or pictorial description of location of pain, numbness or paresthesias. Any written description of where the pain, numbness or paresthesias might be located including describing any of the symptoms in specific fingers or part of the hand; any picture of the hand which clearly indicates where the symptoms are (e.g., Katz hand diagram).
  - The record must be quite specific. For example, it cannot state “fingers” – it must state which fingers (does not matter whether dorsal or ventral, however). It cannot state “palm” – it must state where on palm. It cannot state “hand” – it must state palm or dorsum of hand. For wrist, it must also state which side. I.E., the reader of a text description should have enough information to complete a Katz hand diagram.

- Quality of pain: Any documentation in the record of how severe the pain is, or its character, such as burning, shooting, stabbing, etc.
• Duration: When any pain, numbness, or paresthesias began or how long they have been present. Any documentation in the record of how long the patient has suffered from any of these symptoms or when they started. This may include a specific time period (e.g., patient has had pain for 6 months) or a date (e.g., pain started in September).

• Onset: Time course of any pain, numbness or paresthesias, meaning manner of onset and any changes over time

• Volar = palmar = ventral surface of hand.

• Back of hand = dorsal surface.

• Katz hand diagram: A diagram used to score the likelihood that hand and arm symptoms represent CTS; an example is provided at the back of the Guidance Document.

3.03.M New symptoms characteristic of CTS should lead to suspicion

• The intent of this measure is to determine whether the provider recognized the symptoms they were evaluating as potentially representing CTS, and demonstrated this recognition by documenting it.

• Symptoms in the first through third digits are most characteristic of CTS:
  o Patients are also eligible for this measure if the symptoms are located on the radial (not exclusively ulnar) aspect of the palm, although it is not necessary to search the medical records for symptoms on the palm.

• This measure does not allow suspicion to be implied (in contrast to some other measures). Otherwise, the same care that triggers eligibility for the measure would also satisfy the requirement for adherence.
  o E.g., care would not pass if the provider documented the Katz hand diagram without interpreting it.

• Paresthesias: Abnormal skin sensations (such as tingling or tickling or itching or burning) usually associated with peripheral nerve damage, often with no visible physical cause. This includes tingling.

• Tingling: Stinging or prickling sensation, a type of paresthesia.

• Numbness  Loss of the sensation of feeling.
SECTION 4: SYMPTOMS AND SIGNS OF CTS VS. OTHER CONDITIONS

4.01.M New hand or forearm pain requires evaluation for “red flags”

- The intent of this measure is to determine whether providers performed a minimal evaluation of new pain to exclude “red flags,” such as possible fractures, and other emergencies.

- New hand or forearm pain: The provider must explicitly state that the pain is new, using that word or a synonym.

- Pain anywhere in the hand or forearm will count, even if it is in parts of the hand that would not indicate CTS.

- Even if the provider explicitly documents that the pain is new, exclude situations for which the pain clearly is not new (e.g., it was evaluated during recent prior visits by other providers).

- Care by any provider is eligible for this measure, not just providers who treat musculoskeletal disorders.
  - E.g., if a cardiologist documents that the patient has new pain in the arm, they should also document whether or not the patient has a history of trauma.

- The documentation of the symptoms (both the pain and the red flags) should be within the progress notes for the visit.

- If the patient had pain as one of their presenting complaints of CTS, this measure may refer to the visit for Milestone 1.

- If the patient developed pain in the study hand or forearm at some time during the study period other than Milestone 1, they are still eligible for this measure.

- If the patient was never achieved Milestone 1 but developed pain in the study hand or forearm during the study period, they are still eligible for this measure.

- If the patient develops new pain in the study hand or forearm on more than one occasion, score the measure for only one visit, in order of preference:
  - Milestone 1, if it involved pain
  - The first visit involving pain after Milestone 1
  - Any visits involving pain during the study period before Milestone 1.

- Presence or absence of trauma: Clear indication that the doctor assessed for any injury of the hand or forearm, no matter what the cause may be and whether or not injury is actually present.

- Presence or absence of deformity: Clear indication that the doctor assessed for any sign that the hand or forearm is misshapen, malformed, or disfigured, no matter what the cause may be and whether or not deformity is actually present. This includes swelling of the hand or forearm as well as disfigurements caused by other injuries.

- Presence or absence of fever: Clear indication that the doctor assessed for signs of fever, including noting the patient’s temperature at the time of the visit as well as more qualitative assessments such as “patient feverish” or anything indicating the patient may or may not have a fever.
4.02.M New suspicion of CTS requires specific physical examination

- This measure stipulates how providers should work-up CTS when they suspect it may be causing the patient’s symptoms. Consequently, it focuses on the visit during which the initial evaluation occurs (Milestone 2), and is limited to patients for whom CTS was ever suspected (which includes patients who receive a diagnosis without explicit notation of a suspicion, i.e., Milestone 3 or 4).

- Newly suspected corresponds to the definition of Milestone 3 above.

- Numbers and names of digits/fingers
  
  - 1 = thumb
  - 2 = index finger
  - 3 = middle finger
  - 4 = ring finger
  - 5 = pinkie finger.

- Loss of sensibility in the median nerve distribution: Diminished sensibility on any of the following examination maneuvers. Note that the medical record does NOT need to specify how the maneuvers were performed:
  
  - Hypalgesia: Diminished ability to perceive painful stimuli, such as a pin prick, at one location when compared with a control location.
  - Two-point discrimination: Diminished ability to distinguish the number of points on calipers set 4 to 6 mm apart at one location as compared with a control location.
  - Vibration: Diminished ability to distinguish vibration, using a standard tuning fork, at one location relative to a control location.
  - Semmes-Weinstein monofilament: Patient is unable to detect a monofilament of 2.83 applied to the pulp of digit 2.

- Loss of sensibility means inability or decreased ability to detect stimuli on provocative testing, not subjective or self-reported loss of sensation.

- Median nerve distribution: At least one of digits 1 to 3.

- Control location: Generally this is understood to mean digit 5, but this need not be the case or be specified in the medical record. Digits 1 to 3 would obviously not be a suitable control location, however, since those are most likely to be affected by CTS.

- Thenar muscle weakness: Weakness on either of the following:
  
  - Thumb abduction strength testing: Weakness of resisted abduction, meaning with the thumb at a right angle to the index finger, the patient moves the thumb moving away from the palm while the examiner applies resistance to the dorsal side of the thumb (i.e., on the side with the nail). The record does not need to be specific as to how thumb abduction was assessed.
  - Thumb opposition strength testing: Weakness of resisted opposition, meaning with the thumb at a right angle to the index finger, the patient moves the thumb across the palm and
toward the 5th digit while the examiner applies resistance to the palmar side of the thumb. The record does not need to be specific as to how thumb opposition was assessed.

- Thenar muscle atrophy: Concavity of the muscles of the thumb when viewed from the side.

- Maneuvers that are specifically excluded from satisfying this measure:
  - Tinel’s (symptoms when tapping on carpal tunnel)
  - Phalen’s (symptoms when wrist is flexed about 90 degrees)
  - Durkan’s, median nerve compression test, pressure provocation test, and other maneuvers involving direct compression of carpal tunnel
  - Tourniquet test
  - Square wrist sign
  - Closed fist sign
  - Flick sign.

4.03.M New symptoms inconsistent with CTS require evaluation

- This measure does not correspond to a particular milestone.

- It is not restricted to new complaints of hand or forearm pain. Pain anywhere in the hand or forearm will count, even if it is in parts of the hand that would not indicate CTS.

- The new findings are fever, point tenderness, and deformity.

- Point tenderness and deformity are considered “new” when the patient has not presented to a physician with them in the prior two years.

- To confirm that complaints are new, look for evidence that they are actually old. Use any statements in the note for this visit that the patient has not had this before. If there are no such statements, look back through the progress notes within 24 months prior to this visit to see whether the patient has had the same symptoms or signs in this hand or forearm before.

- This measure is intended to apply to initial presentations and typical situations, so exclude unusual or recurring circumstances such as new symptoms occurring after surgery, etc.

- This can occur before, at the same time as, or long after Milestones 1 through 4.

- Fever: Documentation of a temperature measurement during the current visit that registered 100.4 F or higher; provider note indicating fever present or that patient feels feverish; patient’s subjective complaint of fever during the prior 48 hours.

- Point tenderness: Documentation of patient feeling pain when pressure is applied to a location in hand or forearm.

- Deformity: Documentation that the hand or forearm is misshapen, malformed, or disfigured, no matter what the cause may be. This includes swelling of the hand or forearm as well as disfigurements caused by other injuries.

- Evaluation should be interpreted liberally. It includes history or physical examination directed at infection, trauma, malignancy, ganglion cyst, and other diagnoses of wrist and hand; imaging of
hand, wrist and cervical spine; laboratory tests pertaining to infection, aspiration of wrist joint, etc. The studies can be ordered, performed, or reviewed at the visit.
SECTION 5: IMAGING STUDIES

5.01.M Imaging should be used selectively for suspected CTS

- The initial suspicion of CTS corresponds to the visit for Milestone 3. If the patient is diagnosed without a prior suspicion, use date of first diagnosis, Milestone 4.

- Ignore any imaging tests after the first one for the symptoms in the study hand or wrist.

- MRI: Documentation in the record than an MRI was performed (magnetic resonance imaging or nuclear magnetic resonance imaging or NMRI) on the study hand/wrist.

- Ultrasound: Documentation in the record that an ultrasound was performed (ultrasound, sonography or sonogram) on the study hand/wrist.

- CT: Documentation in the record that a CT was performed (computerized tomography, CAT scan, computerized axial tomography) on the study hand/wrist.

- Evidence of that the provider suspected a structural lesion can be stated or implied.
  - Documentation in the record that the doctor suspects a structural lesion, meaning a physical lesion that is causing the symptoms, such as a neoplasm, scar, fracture, arthritis, anatomic abnormality, failed surgery, etc.
    - “Pass” even if the documented suspicion is somewhat vague, such as if the provider notes something as basic as “? structural lesion?”
  - Symptoms or signs that may indicate a structural lesion are documented in the medical record, such as trauma, point tenderness, deformity, palpable mass, crepitation, loss of motion, severe pain.
  - Surgery: Documentation in the record that surgery was performed in the past would also suggest the possibility of a structural lesion.
SECTION 6: NON-OCCUPATIONAL RISK FACTORS AND EXACERBATING FACTORS

6.01.M New suspicion of CTS requires evaluation for excessive weight

- 6.01.M is limited to patients for whom CTS was newly suspected (which includes patients who receive a diagnosis without explicit notation of a suspicion, i.e., Milestone 3 or 4) during the designated study period.
  - The first visit having any notation in the medical record that a provider who treats musculoskeletal disorders is looking for CTS or has found evidence of CTS in the patient. This may include statements that the doctor suspects CTS, is testing for CTS, or wishes to confirm diagnoses of CTS, “rule out CTS”, “cannot rule out CTS”, likely CTS. Synonyms for CTS are acceptable, such as median neuropathy, symptoms in median nerve distribution, suggestion of median nerve compression. Note that providers may also document a suspicion of CTS in an implied rather than explicit fashion. Any physical examination maneuver that is mainly performed to assess for CTS should be considered evidence that CTS was suspected, such as Phalen’s, Tinel’s, the median nerve compression test, Durkan’s, square wrist sign, closed fist sign, flick sign, pressure provocation test, tourniquet test, hand elevation test, and the Katz hand diagram.

- Even if the presence or absence of overweight and obesity was recently documented, including by the same provider, the notation of overweight or obesity should occur in relation to the evaluation of CTS, since overweight/obesity is a treatable risk factor for CTS.

- Height: Documentation in the record of the height of the patient, either by self report or actual measurement in the office.

- Weight: Documentation in the record of the weight of the patient, either by self report or actual measurement in the office.

- Presence or absence of obesity/overweight: Documentation in the record of any note regarding doctor’s clinical judgment about the weight of the patient, whether or not that indicates a problem (i.e., obese, overweight, normal weight, etc.).

- Body Mass Index (BMI): If the provider records the patient’s body mass index, give credit for documenting the presence or absence of overweight or obesity.

6.02.E Eligibility for 6.03.M and 6.04.M

- Eligibility for 6.03.M and 6.04.M corresponds to Milestone 2, the visit at which a provider first evaluated the CTS symptoms, but only for patients who also reached Milestone 4, the diagnosis of CTS. In addition, the patient must have at least two visits after Milestone 2 to give providers a chance to assess the risk factors and exacerbating factors.

6.03.M New CTS diagnosis requires assessment of medical risk factors

- The period for documenting medical risk factors starts with the initial evaluation and continues through the second CTS-related visit after the initial evaluation.
• CTS-related visit means any visit to a provider who treats musculoskeletal disorders at which CTS or CTS-related symptoms are mentioned in the note AND for which any evaluation or treatment is performed for the symptoms (specifically exclude visits where the CTS is mentioned in a list of diagnoses or problems but no action is taken relating to CTS).
  - Provider who treats musculoskeletal disorders: Primary care doctor, Internist, Family Physician, general practitioner, Occupational Medicine Physician, Rheumatologist, Pain Specialist, Neurologist, Emergency Medicine Physician, Orthopedist, Physiatrist, Chiropractor, Oriental Medicine Practitioner (acupuncturist), nurse practitioner or physician assistant practicing under the supervision of one of the above specialties, Neurosurgeon, Physical Therapist, Occupational Therapist, Hand Therapist, or another type of provider who treats musculoskeletal disorders
  - For CTS-related visits, include visits involving symptoms generally associated with CTS or, for this patient, ultimately attributed to CTS.
• Accept general statements such as “past medical history negative,” “PMHx noncontributory,” “History taken,” “No risk factors,” etc.
• Arthritis:
  - Documentation in the record of rheumatoid arthritis or RA.
  - Also accept mixed or undifferentiated connective tissue disease.
  - Osteoarthritis (OA) is also associated with CTS so credit can be given for any reference to “arthritis” in the wrist of the study hand.
• Diabetes mellitus:
  - Documentation in the record of presence or absence of AODM - Adult onset DM, Diabetes – diet controlled, or controlled by oral hyoglycemics, IDDM - Insulin-dependent DM, Ketosis-prone diabetes, MOD - Maturity onset diabetes, MODM - Maturity onset diabetes mellitus, MODY - Maturity onset diabetes of youth, NIDDM - Non-insulin dependent diabetes mellitus, Nonketosis-prone diabetes, Type I DM, type 1 diabetes, Type II DM, type 2 diabetes; Secondary DM.
  - Do not accept: Abnormal glucose tolerance, Borderline diabetes, Gestational diabetes mellitus (GDM) See selection below, Glucose Intolerance, Impaired fasting glucose (IFG), Impaired glucose tolerance (IGT).
• Hypothyroidism:
  - Documentation in the record of presence or absence of hypothyroidism; underactive thyroid, or myxedema.
  - Accept: A physician note commenting that a TSH (thyroid stimulating hormone) is within or outside the normal range.
• Pregnancy: Among female patients, any indication in the record that the patient is currently pregnant.
• Kidney injury:
- Accept any notation about chronic kidney disease, receipt of hemodialysis, glomerulonephritis, nephritic syndrome, nephropathy, or provider notation about abnormal creatinine.

- Do not accept acute or transient kidney injury, acute tubular necrosis, or interstitial nephritis unless the renal function is documented to have remained impaired one or more months after the kidney injury first occurred.
New CTS diagnosis requires assessment of non-occupational factors

- Note this corresponds to the visit for Milestone 2 (initial evaluation), provided the patient ultimately reached Milestone 4 (diagnosis).

- CTS-related visit means any visit to a provider who treats musculoskeletal disorders at which CTS (or symptoms eventually attributed to CTS) is mentioned in the note AND for which any evaluation or treatment is performed for the CTS symptoms (specifically exclude visits where the CTS is mentioned in a list of diagnoses or problems but no action is taken relating to CTS).
  - Provider who treats musculoskeletal disorders: Primary care doctor, Internist, Family Physician, general practitioner, Occupational Medicine Physician, Rheumatologist, Pain Specialist, Neurologist, Emergency Medicine Physician, Orthopedist, Psychiatrist, Chiropractor, Oriental Medicine Practitioner (acupuncturist), nurse practitioner or physician assistant practicing under the supervision of one of the above specialties, Neurosurgeon, Physical Therapist, Occupational Therapist, Hand Therapist, or another type of provider who treats musculoskeletal disorders.

- Non-occupational setting: Documentation in the record that the exposures are present OUTSIDE a work related setting, are not related to employment (i.e., working for money).

- Do not allow a general statement about not using the hands because this is too general and it undermines the intent of the measure, which is to ensure providers assess the established types of exposures associated with CTS.

- Do not allow statements such as “history taken.”

- Do NOT allow statements such as “no non-occupational exacerbating factors.”

- Do allow statements such as “no exposure to vibration,” etc.

- If the documentation includes reasonably detailed descriptions of non-occupational activities that clearly do not involve mechanical force, vibration, or frequent repetitive movements, give credit since this strongly implies an absence of exposure.

- Presence of force: Movements of the hands involving substantial exertion such as carrying/lifting heavy objects, pulling or pushing against things using the hands, using heavy tools, squeezing things with the hands. Include comments about significant exertion involving the hands, such as heavy lifting, weight lifting, gardening or yard work that uses hand tools, kneading dough or clay, lifting heavy children, chopping wood, sports that involve heavy use of upper extremities (such as skiing, tennis, squash, rowing, sailing, windsurfing, baseball), etc.

- Presence of vibration: Use of vibrating hand tools (power saws, drills, jack hammers, grinders, sanders, carpet cleaners, floor polishers, etc.), and other vibrating objects contacted by the hands.

- Presence of frequent repetitive wrist movements: Cyclical or repetitive work activities that involved either 1) repetitive hand/finger or wrist movements such as hand gripping or 2) wrist extension/flexion, ulnar/radial deviation, and supination or pronation.

  o Do not include movements that involve only the fingers.
SECTION 7: WORK-ASSOCIATED CTS SYMPTOMS

Subsection 7A. Occupational Exacerbating Factors

7.01.E Eligibility for Sections 7 through 15

- “Does the medical record indicate that CTS was ever diagnosed in this patient before the end of the study period?”
- This phrased this way to include patients diagnosed before the study period.
- This criterion excludes patients not diagnosed with CTS from being eligible for the remaining measures. If there is no diagnosis, do not score any more measures.

7.02.E Eligibility for Questions 7.03.M and 7.04.M

- Eligibility for these questions corresponds to Milestone 2, the visit at which a provider first evaluated the CTS symptoms (provided that the patient ultimately reaches Milestone 4, the diagnosis).

7.03.M New CTS diagnosis requires detailed occupational history

- CTS-related visit means any visit to a provider who treats musculoskeletal disorders at which CTS (or symptoms related to CTS) is mentioned in the note AND for which any evaluation or treatment is performed for the CTS symptoms (specifically exclude visits where the CTS is mentioned in a list of diagnoses or problems but no action is taken relating to CTS).
  - Provider who treats musculoskeletal disorders: Primary care doctor, Internist, Family Physician, general practitioner, Occupational Medicine Physician, Rheumatologist, Pain Specialist, Neurologist, Emergency Medicine Physician, Orthopedist, Physiatrist, Chiropractor, Oriental Medicine Practitioner (acupuncturist), nurse practitioner or physician assistant practicing under the supervision of one of the above specialties, Neurosurgeon, Physical Therapist, Occupational Therapist, Hand Therapist, or another type of provider who treats musculoskeletal disorders.

- Job duties: Documentation in the record of the person’s job title (occupation) AND functional job duties. Functional job duties are specific tasks in which people use their hands.

- “Pass” if the provider documents that the patient is not employed outside the home.

- Duration at current or most current occupation: Documentation in the record as to how long the person has worked in the specific occupation or duties described above.

- Duration can be interpreted as how long at a particular job, how long engaging in particular job duties, or how long in a particular occupation.

- Whether symptoms improve or worsen at work: Documentation in the record about whether symptoms get better or worse at work, with specific duties performed at work, or after certain activities at work.

7.04.M New CTS diagnosis requires assessment of occupational factors
• Patients are only eligible for this measure if they are employed. This means that they do some sort of work in exchange for money.
  ○ It excludes people who do uncompensated work, such as household chores, uncompensated childcare, volunteer work, etc.

• Occupational setting: Documentation in the record that the exposures are present in a work related setting.

• CTS-related visit means any visit to a provider who treats musculoskeletal disorders at which CTS (or symptoms related to CTS) is mentioned in the AND for which any evaluation or treatment is performed for the CTS symptoms (specifically exclude visits where the CTS is mentioned in a list of diagnoses or problems but no action is taken relating to CTS).
  ○ Provider who treats musculoskeletal disorders: Primary care doctor, Internist, Family Physician, general practitioner, Occupational Medicine Physician, Rheumatologist, Pain Specialist, Neurologist, Emergency Medicine Physician, Orthopedist, Psychiatrist, Chiropractor, Oriental Medicine Practitioner (acupuncturist), nurse practitioner or physician assistant practicing under the supervision of one of the above specialties, Neurosurgeon, Physical Therapist, Occupational Therapist, Hand Therapist, or another type of provider who treats musculoskeletal disorders

• Do not allow a general statement about not using the hands because this is too general and it undermines the intent of the measure, which is to ensure providers assess the established types of exposures associated with CTS.

• If the documentation includes reasonably detailed descriptions of non-occupational activities that clearly do not involve mechanical force, vibration, or frequent repetitive movements, give credit since this strongly implies an absence of exposure.

• Presence of force: Movements of the hands involving substantial exertion such as carrying/lifting heavy objects, pulling or pushing against things using the hands, using heavy tools, squeezing things with the hands.

• Presence of vibration: Use of vibrating hand tools (e.g., power saws, drills, jackhammers, grinders, Sanders, carpet cleaners, floor polishers, etc.), and other vibrating objects contacted by the hands.

• Presence of frequent repetitive wrists movements: Cyclical or repetitive work activities that involved either 1) repetitive hand/finger or wrist movements such as hand gripping or 2) wrist extension/flexion, ulnar/radial deviation, and supination or pronation.
  ○ Do not include movements that involve only the fingers.

7.05.M Exacerbating activities should be identified when CTS limits occupational functioning

• Provider who treats musculoskeletal disorders: Primary care doctor, Internist, Family Physician, general practitioner, Occupational Medicine Physician, Rheumatologist, Pain Specialist, Neurologist, Emergency Medicine Physician, Orthopedist, Psychiatrist, Chiropractor, Oriental Medicine Practitioner (acupuncturist), nurse practitioner or physician assistant practicing under the supervision of one of the above specialties, Neurosurgeon, Physical Therapist, Occupational Therapist, Hand Therapist, or another type of provider who treats musculoskeletal disorders.
• CTS-related visit means any visit to a provider who treats musculoskeletal disorders at which CTS (or symptoms eventually attributed to CTS) is mentioned in the note AND for which any evaluation or treatment is performed for the CTS symptoms (specifically exclude visits where the CTS is mentioned in a list of diagnoses or problems but no action is taken relating to CTS).

• Occupational functional limitations Work-related activities that the person could do before developing CTS symptoms but cannot do now.

• Non-occupational functional limitations Non-work-related activities that the person could do before developing CTS symptoms but cannot do now.

• Documentation of problematical activities Documentation in the record of specific tasks related to work activities (specific tasks or job duties) OR non-work activities (housework, hobbies, etc.) that cause or exacerbate CTS symptoms.

• The intent of this measure is that the provider should be specific in their documentation; therefore, general statements should not be accepted.

• Activities commonly impacted by CTS include: Writing, buttoning of clothes, holding a book while reading, gripping of a telephone handle, opening of jars, household chores, carrying grocery bags, bathing and dressing.

Subsection 7B. Provider Statements Regarding Work-Association

7.06.M Rationale for work-association should be documented

• The intent of this measure is to assess if the provider gave some thought to judging whether or not the symptoms are associated with work.

• Work-associated CTS: Any notation in the medical record that the current symptoms get worse when the patient is working at a job outside of the home. This does not equate with a workers’ compensation claim or indicate whether or not such a claim is justified.

• The initial diagnosis with CTS corresponds to Milestone 4.

• The visits this measure applies to include Milestone 4 and the next CTS-related visit after Milestone 4.

  o If the provider documents a judgment of work association and rationale at visits before Milestone 4, this care should also “pass.”

• Patients are only eligible for this measure if they are employed. This means that they do some sort of work in exchange for money.

  o It excludes people who do uncompensated work, such as household chores, uncompensated childcare, volunteer work, etc.

• CTS-related visit means any visit to a provider who treats musculoskeletal disorders at which CTS (or symptoms eventually attributed to CTS) is mentioned in the note AND for which any evaluation or treatment is performed for the CTS symptoms (specifically exclude visits where the CTS is mentioned in a list of diagnoses or problems but no action is taken relating to CTS).

• Provider who treats musculoskeletal disorders Primary care doctor, Internist, Family Physician, general practitioner, Occupational Medicine Physician, Rheumatologist, Pain Specialist, Neurologist,
Emergency Medicine Physician, Orthopedist, Physiatrist, Chiropractor, Oriental Medicine Practitioner (acupuncturist), nurse practitioner or physician assistant practicing under the supervision of one of the above specialties, Neurosurgeon, Physical Therapist, Occupational Therapist, Hand Therapist, or another type of provider who treats musculoskeletal disorders.

- Probability CTS is work related: Documentation in the record that the doctor believes the CTS is specifically linked to work related duties or functions, including notes that make this specific, such as “CTS probably caused by xxx at work” or “Patient is a xxxx and this may cause his CTS.”

- Rationale: Any statement in the record that links the probability of being work related to a reason for thinking this, such as a statement that says “because” or “since” with a reason following.
  - Anything with a because statement or similar language, such as “given …,” “therefore,” “consequently,” “as,” “since,” etc., may represent a rationale.

- The rationale needs to be present; it does not need to be scientifically proven or even make sense to the abstractor.

- The rationale should be present whether or not the symptoms are judged work-associated (i.e., a rationale is also needed for a judgment that the symptoms are not work-associated).

- The rationale does not need to be in a particular section of the medical record.
SECTION 8: NON-OPERATIVE TREATMENT

Subsection 8A. Education and Modified Activity

8.01.M Patients newly diagnosed with CTS should be educated about the condition

- Eligibility corresponds to Milestone 4.
- Synonyms for “educated the patient”: Advised, informed, told, explained, counseled, elaborated, described, discussed, or similar terms.
- Diagnosis: That the hand symptoms represent CTS. Documented statements such as “patient informed of CTS diagnosis,” “patient informed that symptoms are due to CTS,” etc.
- Treatments for CTS: Documentation that the patient was informed of at least two different treatments used for CTS (two are required so as to distinguish education from prescribing). The treatments discussed do not need to be appropriate ones according to the current measures.
- Prognosis: Documentation that the patient was informed of the likelihood that the symptoms will improve or worsen over time.
- Activity: That certain activities may be exacerbating factors. Documentation that the patient was informed of exacerbating factors. The activities discussed can be either those that elicit the symptoms in this patient or that are associated with CTS symptoms in general (vibration, force, and repetitive motion).
  - Activities involving movement of only the excluded fingers.
  - Presence of force: Movements of the hands involving substantial exertion such as carrying/lifting heavy objects, pulling or pushing against things using the hands, using heavy tools, squeezing things with the hands.
  - Presence of vibration: Use of vibrating power tools (power saws, hand mixers, grinders, sanders, carpet cleaners, etc.), and other vibrating objects contacted by the hands.
  - Presence of frequent repetitive wrist movements: Cyclical or repetitive work activities that involved either 1) repetitive hand/finger or wrist movements such as hand gripping or 2) wrist extension/flexion, ulnar/radial deviation, and supination or pronation. Excludes activities involving movement of only the fingers.
- Rationale: The rationale for a judgment of work-association. Documentation that the provider explained the reason for concluding the symptoms are work associated, such as “because he/she is in XXX occupation,” or “because he/she has XXX job duty.”
- Benefits of working: That unnecessary time off work may not be beneficial. Documentation that the provider explained that prolonged time on disability may lead to permanent disability, that worker earnings are lower on disability than with employment, and that functional status may not be improved long term by time off work, or similar statements of the disadvantages of being off work.
- Work modifications: Documentation that the provider discussed work-site or work-activity modifications for this patient. Also give credit if the provider simply documented the presence of work-site or work-activity modifications, since the provider is unlikely to list these without giving instructions to the patient.
• Other: Any other issues relating to CTS. Documentation that the provider explained other aspects of CTS and its care (except exclude risks and benefits of steroid treatment because this is addressed elsewhere).

8.02.M Exposures to vibration, force, and repetition should be minimized

• Presence of force: Movements of the hands involving substantial exertion such as carrying/lifting heavy objects, pulling or pushing against things using the hands, using heavy tools, squeezing things with the hands.
• Presence of vibration: Use of vibrating power tools (power saws, hand mixers, grinders, sanders, carpet cleaners, etc.), and other vibrating objects contacted by the hands.
• Presence of frequent repetitive wrist movements: Cyclical or repetitive work activities that involved either 1) repetitive hand/finger or wrist movements such as hand gripping or 2) wrist extension/flexion, ulnar/radial deviation, and supination or pronation. Exclude activities involving movement of only the fingers.
• Activity modification discussed: Documentation in the record that the provider discussed changing the way the patient performs problematic activities, including ways to avoid repetitive motions, vibration and force or modifications that lessen the impact of the activities.

Subsection 8B. Splinting

8.03.E Subsection Eligibility

• Did any provider prescribe splints to treat CTS symptoms?
• A splint is a rigid immobilizing device worn to limit flexion and extension at the wrist. Do not include non-rigid bandages, such as ACE wraps.
• The first visit at which the splints were prescribed must be identifiable to score adherence for the measures, so that the patient is not eligible for these measures if this information is missing.

8.04.M Splints should be placed in neutral position

• Neutral positioning: Documentation in the medical record of how the splint was positioned. Accept one of the following descriptions:
  ○ Neutrally, neutral, etc.
  ○ So that there is less than 10 degrees of extension AND no flexion.
  ○ Also accept: Midposition, straight, not bent, adjusted to avoid flexion and extension, and other statements that indicate the provider considered the appropriate position of the wrist and avoided extremes of flexion and extension.
8.05.M An attempt at splinting should last at least six weeks

- Duration of splinting: Documentation in the record of the length of time for which the splint was prescribed, may be in days (e.g., 90 days), weeks (e.g., 6 weeks) or months (e.g., 2 months); to pass the indicator, must be equivalent to at least 6 weeks.

- Any splints that are explicitly prescribed to be in flexion or extension should be specifically excluded from this measure (i.e., the care is not eligible for this measure). If it is unclear whether the splints were neutral or not, assume for only the current measure that they were neutral.
Subsection 8C. Medication Therapy

8.06.E Additional Eligibility for Subsection 8C

- All patients ever diagnosed with CTS are eligible for these measures, i.e., it does not matter whether Milestone 4 occurred before or during the study period.
- To assign a “No pass” to the care, the medical record should explicitly document that the medications were being used to treat CTS and not for other conditions. E.g., in the assessment and plan in a progress note, the prescribed medication is listed under “CTS”, and the patient should not have another indication for the same medication (e.g., diuretics and heart failure, see other instances below in medication list).

8.07.M NSAIDs should not be used for CTS

- NSAIDs: Non-steroidal anti-inflammatory drugs
  - Aspirin (although aspirin should not be used to treat CTS, there are many other indications for taking it, including primary prevention of heart attack, stroke, etc – so only fail care if the patient has no other medical conditions, is under the age of 50, and the notes indicate it is being prescribed solely for CTS).
  - Celecoxib (Celebrex)
  - Choline magnesium trisalicylate (Trilisate)
  - Difunisal (Dolobid)
  - Salsalate (Salflex, Disalcid, Amigescic)
  - Diclofenac (Arthrotec, Voltaren, Cataflam, Flector)
  - Etodolac (Lodine)
  - Flurbiprofen (Ansaid)
  - Ibuprofen (Motrin, Advil, Nuprin, Rufen, Neoprofen)
  - Indomethacin (Indocin)
  - Ketoprofen (Orudis)
  - Keturolac (Toradol)
  - Mefenamic acid (Ponstel)
  - Meloxicam (Mobic)
  - Nabumetone (Relafen)
  - Naproxen (Naprosyn, Aleve, Anaprox, Naprelan)
  - Oxaprozin (Daypro)
  - Piroxicam (Feldene, Fexicam)
  - Sulindac (Clinoril)
  - Tolmetin (Tolcetin).
8.08.M Muscle relaxants should not be used for CTS

- Muscle Relaxants
  - Baclofen (Lioresal, Kemstro)
  - Carisoprodol (Soma)
  - Soma Compound with Codeine
  - Chlorzoxazone (Parafon Forte)
  - Cyclobenzaprine (Amrix, Flexeril)
  - Dantrolene (Dantrium) – must be certain used for CTS rather than spinal cord injury, stroke, cerebral palsy, multiple sclerosis, or other central nervous system disorder
  - Metaxalone (Skelaxin)
  - Methocarbamol (Robaxin)
  - Orphenadrine (Norflex)
  - Tizanidine (Zanaflex).

8.09.M Opiates should not be used for CTS

- Opiates/Opiods
  - Codeine
  - Fentanyl (Duragesic, Actiq, Fentora, Sublimaze, IONSYS)
  - Hydromorphone (Dilaudid)
  - Levorphanol (Levo-Dromoran)
  - Meperidine (Demerol, Pethidine)
  - Methadone (Diskets, Dolophone, Methadose)
  - Morphine (MS Contin, Kadian, Avinza, Roxanol, Oramorph, MSIR, DepoDur)
  - Buprenorphine (Buprenex, Subutex)
  - Butorphanol (Stadol)
  - Nalbuphine (Nubain)
  - Pentazocine (Talwin)
  - Oxycodone (Roxicodone, OxyContin, Percolone, OxyIR, OxyFAST)
  - Oxymorphone (Opana)
  - Propoxyphene (Darvon)
  - Anexia
  - Capital with Codeine
  - Combunox
- Darvocet
- Darvon Compound
- Empirin with Codeine
- Fioricet with Codeine
- Fiorinal with Codeine
- Lorct
- Lortab
- Maxidone
- Mersyndol with codeine
- Norco
- Percocet
- Percodan
- Toxicet
- Soma Compound with Codeine
- Synalges
- Talacen
- Tylenol with Codeine
- Tylox
- Vicodin
- Vicoprofen
- Wygesic
- Xodol
- Zydone.

8.10.M Diuretics should not be used for CTS

- Must be completely certain that the diuretics are mainly being used to treat CTS, which means patient should not have a coexisting diagnosis of heart failure, hypertension, or kidney disease; if they do, then pass.
- Diuretics:
  - Eplerenone (Inspra)
  - Spironolactone (Aldactone)
  - Acetazolamide (Diamox)
  - Bematanide (Bumex)
  - Ethacrynic acid (Edecrin)
- Furosemide (Lasix)
- Torsemide (Demadex)
- Chlorthalidone (Thalitone)
- Hydrochlorothiazide (HCTZ, Esidrix, Oretic, Microzide, HydroDiuril)
- Indapamide (Lozol)
- Metolazone (Zaroxolyn).

8.11.M Steroid treatment requires discussion of risks

- Steroid treatment refers to corticosteroids (exclude mineralocorticoids, such as fludrocortisone [Florinef]).
- Corticosteroids
  - Betamethasone (Celestone)
  - Cortisone (Cortone)
  - Dexamethasone (Decadron, Dexpak)
  - Hydrocortisone (Cortef, Cortenema, Solu-Cortef)
  - Methylprednisolone (Solu-Medrol, Medrol, Depo-Medrol)
  - Prednisolone (Prolene, Pediapred, Orapred)
  - Prednisone (Deltasone, Sterapred)
  - Triamcinolone (Aristocort, Kenalog, Aristospan).
- Steroid injection: An injection of corticosteroids into the carpal tunnel.
- Give credit for any of the following risks documented as discussed:
  - Decreased secretion of endogenous corticosteroids, which means stopping the drug suddenly is dangerous, can even lead to death
  - Need for higher steroid dosage when subjected to major stress
  - Muscle wasting, muscle pain or weakness,
  - Delayed wound healing,
  - Atrophy of the protein matrix of the bone resulting in osteoporosis, vertebral compression fractures, aseptic necrosis of femoral or humeral heads, or pathologic fractures of long bones
  - Acute myopathy
  - Tendon rupture
  - Infections with any pathogen, including viral, bacterial, fungal, protozoan (non-worm parasite), or helminthic (worm) infections in any organ system. Common, generally well tolerated infections can be severe or fatal.
  - Fluid and electrolyte disturbances, such as edema, hypokalemic alkalosis
  - Hypertension
  - Congestive heart failure
  - Hypocalcemia
  - Eye effects: Cataracts, exophthalmos, or increased intraocular pressure which may result in glaucoma or may occasionally damage the optic nerve
- Sex hormone abnormalities such as amenorrhea or abnormalities of sperm
- Diabetes mellitus, hyperglycemia, glucose intolerance
- Gastrointestinal: Nausea, vomiting, anorexia which may result in weight loss, increased appetite which may result in weight gain, diarrhea or constipation, abdominal distention, pancreatitis, gastric irritation, and ulcerative esophagitis, indigestion, peptic ulcers
- Headache, vertigo, insomnia, restlessness and increased motor activity, ischemic neuropathy, EEG abnormalities, and seizures.
- Mental disturbances ranging from euphoria, mood swings, depression and anxiety, and personality changes to frank psychoses. Emotional instability or psychotic tendencies may be aggravated by the drugs.
- Increased intracranial pressure with papilledema (i.e., pseudotumor cerebri) has been reported, generally in association with withdrawal of glucocorticoid therapy.
- Skin: Impaired wound healing, skin atrophy and thinning, acne, increased sweating, hirsutism, facial erythema, striae, petechiae, ecchymoses, and easy bruising,
- Manifestations of hypersensitivity to the corticosteroids include hives and/or allergic dermatitis, urticaria, and angioedema
- Hypercholesterolemia, atherosclerosis, thrombosis, thromboembolism, fat embolism, and thrombophlebitis.
- Other adverse effects of steroids have been reported and any should be accepted.

- For injections, also give credit for:
  - Local damage to structures in the area, such as damage to median nerve or tendon rupture
  - Damage to blood vessels leading to bleeding or hematoma
  - Prolonged disability, permanent injury to the median nerve.
  - Injury to the median nerve, which could result in weakness or numbness or chronic pain and even severe disability
  - Infection of the wrist or possibly elsewhere in the body
  - Reflex sympathetic dystrophy
  - Also give credit for a general statement, “risks of steroids discussed with patient,” or a similar one.

- The discussion must occur during the six weeks before, or at the same visit, as when the steroids are administered or prescribed.
- If they were not discussed at the same visit as they were administered or prescribed, look at prior CTS-related visits to determine whether the risks were documented as discussed previously.
- It is also acceptable (care “passes”) if the provider documents that the patient has received steroids in the past, since the risks and benefits may already be familiar to the patient in that case.

**8.12.M Discuss benefits of surgery when offering steroids to patients with severe CTS**
• Patients are eligible if the following are all true:
  ○ They have been diagnosed with CTS before the end of the study period
  ○ They have been offered, prescribed, or administered an oral steroid or steroid injection to
    treat their CTS symptoms
  ○ A provider who treats musculoskeletal disorders has described the CTS symptoms as severe
    during the same visit or during visits in the preceding three months.

• See list of steroids above.

• See definition of steroid injection above.

• Provider who treats musculoskeletal disorders: Primary care doctor, Internist, Family Physician,
  general practitioner, Occupational Medicine Physician, Rheumatologist, Pain Specialist, Neurologist,
  Emergency Medicine Physician, Orthopedist, Psychiatrist, Chiropractor, Oriental Medicine
  Practitioner (acupuncturist), nurse practitioner or physician assistant practicing under the supervision
  of one of the above specialties, Neurosurgeon, Physical Therapist, Occupational Therapist, Hand
  Therapist, or another type of provider who treats musculoskeletal disorders.

• Severe CTS: A note by the provider describing the patient’s symptoms as severe
  ○ Do not base judgments of severity on the criteria used in the surgical decision-making
    section because the current measure assesses whether the provider treated the patient
    correctly given what they know themselves.
  ○ Do not include electrodiagnostic tests interpreted as severe CTS, since severe symptoms
    rather than severe abnormalities on an electrodiagnostic test, influence the decision to
    perform surgical released.

• Surgery discussed: Documentation in the record that a provider discussed the possibility of surgery
  for the CTS symptoms; may include discussion of pros and cons of surgery, timing of surgery,
  surgery refused, patient not a good operative candidate for specifically stated reasons, etc.

8.13.M Limit steroid injections to four

• Score at the patient level rather than the injection level.

• See definition of steroid injection above.

• “Pass” if the patient has no more than 4 injections in the study hand before the end of the study
  period.

• When counting injections in the study hand, include those administered before the study period.

• Ignore events after the study period.

• If the patient received five or more injections, “Pass” if the medical record documents that the patient
  refused carpal tunnel surgery at some point prior to the fifth injection
  ○ Examine records for visits to providers who treated musculoskeletal disorders, looking at
    records from visits up to six months before the first injection through the first injection
  ○ Documentation that the patient refused surgery would include, “patient offered surgery,
    declined;” “surgery refused;” “not interested in surgery,” etc.
• Can also give credit of the provider documents that the patient has significant medical contraindications to surgery (i.e., issues other than the appropriateness of surgery as stipulated by the measures pertaining to indications for and contra-indications to surgery). These circumstances are likely to be unusual.

• If the patient receives four injections before surgery and then undergoes one or more after surgery, then “pass.” These circumstances are likely to be unusual.
Subsection 8D. Lasers

8.14.M Laser therapy should not be used for CTS

- Do not pass if any type of laser is used (except if used during surgery).
SECTION 9: FOLLOW-UP

Subsection 9A: General Follow-up

9.01.M Symptoms should be monitored after new diagnosis of CTS

- Provider who treats musculoskeletal disorders: Primary care doctor, Internist, Family Physician, general practitioner, Occupational Medicine Physician, Rheumatologist, Pain Specialist, Neurologist, Emergency Medicine Physician, Orthopedist, Psychiatrist, Chiropractor, Oriental Medicine Practitioner (acupuncturist), nurse practitioner or physician assistant practicing under the supervision of one of the above specialties, Neurosurgeon, Physical Therapist, Occupational Therapist, Hand Therapist, or another type of provider who treats musculoskeletal disorders.

- CTS-related visit means any visit to a provider who treats musculoskeletal disorders at which CTS (or symptoms related to CTS) is mentioned in the AND for which any evaluation or treatment is performed for the CTS symptoms (specifically exclude visits where the CTS is mentioned in a list of diagnoses or problems but no action is taken relating to CTS).

- Changes in pain: Documentation in the record of the presence or absence of any improvement, worsening, or qualitative change in the pain in the median nerve distribution from the previous visit.

- Changes in paresthesias: Documentation in the record of the presence or absence of any improvement, worsening, or qualitative change in abnormal skin sensations (such as tingling or tickling or itching or burning).

- Numbness is not included because it is likely to be less bothersome.

- Median nerve distribution: Documentation of the above symptoms occurring in digits 1 to 3.

- Numbers and names of digits/fingers
  - 1 = thumb
  - 2 = index finger
  - 3 = middle finger
  - 4 = ring finger
  - 5 = pinkie finger

- Hand Weakness: Documentation in the record that the patient has any symptoms that indicate weakness in the hand including dropping things, decreased grip strength, impairment of fine motor skills, etc.
  - Weakness can affect activities including: Writing, buttoning of clothes, holding a book while reading, gripping of a telephone handle, opening of jars, household chores, carrying grocery bags, bathing and dressing.
Subsection 9B. Follow-up for Work-Associated CTS

9.02.E Eligibility for Subsection 9B

- Work-associated CTS: Any notation in the medical record that the current symptoms get worse when the patient is working at a job outside of the home. This does not equate with a workers’ compensation claim or indicate whether or not such a claim is justified.

- Thus, include any patients whose symptoms worsen at work even if they have not filed a workers’ compensation claim.

9.03.M Work-associated CTS symptoms require prompt follow-up

- This measure applies to the period beginning with the visit for Milestone 5 and extending four weeks after that.

- Follow up: Documentation in the medical record that there was a subsequent CTS-related visit within 4 weeks after Milestone 5.

- Work-associated CTS: Any notation in the medical record that the current symptoms get worse when the patient is working at a job outside of the home. This does not equate with a workers’ compensation claim or indicate whether or not such a claim is justified.

- CTS-related visit means any visit to a provider who treats musculoskeletal disorders at which CTS (or symptoms related to CTS) is mentioned in the note CTS (or symptoms eventually attributed to CTS) is mentioned in the note AND for which any evaluation or treatment is performed for the CTS symptoms (specifically exclude visits where the CTS is mentioned in a list of diagnoses or problems but no action is taken relating to CTS).

- Provider who treats musculoskeletal disorders: Primary care doctor, Internist, Family Physician, general practitioner, Occupational Medicine Physician, Rheumatologist, Pain Specialist, Neurologist, Emergency Medicine Physician, Orthopedist, Psychiatrist, Chiropractor, Oriental Medicine Practitioner (acupuncturist), nurse practitioner or physician assistant practicing under the supervision of one of the above specialties, Neurosurgeon, Physical Therapist, Occupational Therapist, Hand Therapist, or another type of provider who treats musculoskeletal disorders.

9.04.M Work status should be monitored when CTS appears work-associated

- This measure applies to the first visit after the initial judgment that CTS is work-associated (which corresponds to Milestone 5).

- Work-associated CTS: Any notation in the medical record that the current symptoms get worse when the patient is working at a job outside of the home. This does not equate with a workers’ compensation claim or indicate whether or not such a claim is justified.

- Provider who treats musculoskeletal disorders: Primary care doctor, Internist, Family Physician, general practitioner, Occupational Medicine Physician, Rheumatologist, Pain Specialist, Neurologist, Emergency Medicine Physician, Orthopedist, Psychiatrist, Chiropractor, Oriental Medicine Practitioner (acupuncturist), nurse practitioner or physician assistant practicing under the supervision of one of the above specialties, Neurosurgeon, Physical Therapist, Occupational Therapist, Hand Therapist, or another type of provider who treats musculoskeletal disorders.
• CTS-related visit means any visit to a provider who treats musculoskeletal disorders at which CTS (or symptoms eventually attributed to CTS) is mentioned in the note AND for which any evaluation or treatment is performed for the CTS symptoms (specifically exclude visits where the CTS is mentioned in a list of diagnoses or problems but no action is taken relating to CTS).

• Work status: The record should contain documentation that the patient either is or is not working. This may be a note stating that patient is still at a specific job or occupation or that patient has stopped working.

9.05.M Steroids for work-associated symptoms require follow-up

• Steroid treatment refers to oral or injected corticosteroids (exclude mineralocorticoids, such as fludrocortisone [Florinef]).

• Corticosteroids
  - Betamethasone (Celestone)
  - Cortisone (Cortone)
  - Dexamethasone (Decadron, Dexpak)
  - Hydrocortisone (Cortef, Cortenema, Solu-Cortef)
  - Methylprednisolone (Solu-Medrol, Medrol, Depo-Medrol)
  - Prednisolone (Prolene, Pediapred, Orapred)
  - Prednisone (Deltasone, Sterapred)
  - Triamcinolone (Aristocort, Kenalog, Aristospan).

• Work-associated CTS: Any notation in the medical record that the current symptoms get worse when the patient is working at a job outside of the home. This does not equate with a workers’ compensation claim or indicate whether or not such a claim is justified.

• Follow up: Documentation in the medical record that there was a subsequent CTS-related telephone call with the patient by the prescribing/administering provider, or subsequent visit with the prescribing/administering provider, within four weeks after the oral or injected steroids were first prescribed or administered.

• CTS-related call: A call with a provider who treats musculoskeletal disorders for which CTS (or symptoms eventually attributed to CTS) is mentioned in the note.

• CTS-related visit means any visit to a provider who treats musculoskeletal disorders at which CTS (or symptoms eventually attributed to CTS) is mentioned in the note AND for which any evaluation or treatment is performed for the CTS symptoms (specifically exclude visits where the CTS is mentioned in a list of diagnoses or problems but no action is taken relating to CTS).

• Provider who treats musculoskeletal disorders: Primary care doctor, Internist, Family Physician, general practitioner, Occupational Medicine Physician, Rheumatologist, Pain Specialist, Neurologist, Emergency Medicine Physician, Orthopedist, Psychiatrist, Chiropractor, Oriental Medicine Practitioner (acupuncturist), nurse practitioner or physician assistant practicing under the supervision of one of the above specialties, Neurosurgeon, Physical Therapist, Occupational Therapist, Hand Therapist, or another type of provider who treats musculoskeletal disorders.

- Include only patients with workers’ compensation claims and on total temporary disability.
- Do not include patients placed on modified duty.

9.07.M Return to work after CTS-related disability requires follow-up assessment that includes functional limitations

- Temporary work-associated disability: This is a legal/administrative term that pertains to a workers’ compensation claim.
  - For this measure, do not include disabling CTS symptoms that are not accompanied by a workers’ compensation claim.
- Released to return to work: Documentation in the record that the patient was released to return to work but does not require confirmation that the patient has started working again. May include notes saying patient has returned to work or that patient has started a new job.
- Follow up assessment: Documentation in the record that there was a subsequent call to the patient by the provider or subsequent visit that happened within four weeks of the release to return to work.
- Occupational functional limitations: Specific occupational activities that the person could do before developing CTS symptoms but cannot do now.
- If they had a follow-up visit but the functional limitations were not addressed, choose No Pass.

9.08.M Prolonged CTS-related disability should trigger evaluation

- The period for the evaluation starts with the visit for Milestone 1 and ends four months after Milestone 5.
- Off work for four or more weeks: Any notation at any point in the record where the provider notes that the patient has been off work for at least four weeks/28 days, or a provider note documenting the date of onset of time off work coupled with subsequent notes documenting that the patient remained off work on a particular date or returned to work for the first time on a date at least 28 days after the onset of time off work.
- There may be notes about being off work for less than four weeks or predicting more than four weeks off work, but do not count these. Only count notes where the length of time off work is actually at least four weeks.
- Assessment of alcohol or substance abuse: Documentation of presence or absence of overuse of alcohol, illicit substances, or prescription medications (e.g., opiates, benzodiazepines, muscle relaxants), provider diagnosis of alcohol abuse/addiction, or CAGE questionnaire. Do not include non-specific statements such as “habits negative” “social negative”; alcohol or substance abuse must be mentioned. Give credit for urine or blood tests assessing alcohol or substances that are commonly abused.
- CAGE questionnaire is positive when two of the four questions are positive:
  - Cut down: Has tried to cut down use
- Anger: Has gotten angry when others suggested cutting down
- Guilt: Has felt guilty about use
- Eye opener: Has used in the morning to avoid withdrawal symptoms.

- Assessment of depression or anxiety: Statement about the presence or absence of depressed mood, depressive symptoms, symptoms of anxiety, panic, etc. Count responses to questionnaires commonly used to assess depression, such as SIGECAPS (sleep, interest, guilt/worry, concentration, appetite, psychomotor slowing, suicide).
  - Do not count responses that do not specifically include depression or anxiety or its associated symptoms. E.g., “ROS psych neg” is not specific enough to know whether depression and anxiety were assessed.

- Barriers to being released to return to work: Give credit for any specific reason that the patient might not want to return to work that is documented by the provider. This may include conflicts with the employer, conflicts with co-workers, workplace or union policies that hamper return to work, litigation regarding the CTS, and many others. Give credit for any other psychiatric disorders. Do not include non-specific reasons, such as the patient does not feel ready or doesn’t want to return to work (without explanation or details).
SECTION 10: SURGICAL DECISION-MAKING

10.1.E First Carpal Tunnel Release Surgery during Study Period

- Patients are eligible for Sections 10 through 13 if they underwent carpal tunnel release surgery (“carpal tunnel surgery” or “release”) for the first time during the study period.
- They are eligible for Sections 10 and 11 even if they have never undergone carpal tunnel surgery.
- Patients are not eligible for any more measures if it is unclear whether or not they have ever undergone carpal tunnel surgery, or if they have undergone carpal tunnel surgery before the study period.
- E10.1 is used not only to determine eligibility for these various sections and associated measures but also to determine adherence to some later measures.

10.2.E Completeness of Preoperative Medical Record

- Assess the completeness of the medical record. If the patient did not have carpal tunnel surgery, consider the full study period. If the patient had carpal tunnel surgery, consider before carpal tunnel surgery.
- The record is complete if there are at least two months in the study period AND no more than one missing visit record from that period.
  - Sometimes it will be obvious that the patient had a visit but the note for that visit is missing. Do not spend time trying to determine if there are missing visit notes if it is not obvious.
  - If the patient has more than five visits and the missing visits are not during the six months before the carpal tunnel surgery (if performed) or the end of the study period (if no carpal tunnel surgery), then choose complete.
- The record is incomplete if there are fewer than two months in the study period.
  - This ensures there is adequate time to assess the patient, and excludes patients who transfer care immediately before carpal tunnel surgery.
- If you have some other reason to believe that the medical record is lacking relevant documents, choose incomplete.

Subsection 10A. Variables for Surgical Decision-making

10.03.V to 10.08.V Symptoms and Signs

10.03.V Dates of Visits Before Surgery

10.04.V Location of Symptoms

- Location of symptoms: See categories below.
- Classic/probable symptoms: Paresthesias, pain and/or numbness in at least two of digits 1, 2, or 3. Radiation to wrist, palm, digits 4 or 5, or proximal to the wrist is allowed, but symptoms on dorsum of hand are not allowed.
- **Possible symptoms:**
  - Paresthesia, pain, and/or numbness in only one of digits 1, 2, or 3 (with or without symptoms on palm or dorsum of hand).
  - Paresthesia, pain, and/or numbness in two of digits 1, 2, or 3 AND symptoms on dorsum of hand (with or without symptoms on palm).
  - Select this option if provider never states which fingers are affected.
- **Unlikely symptoms:**
  - No symptoms on digits 1, 2, or 3 and no symptoms on radial side of palm.
  - Symptoms confined to ulnar side of palm (with or without symptoms on dorsum of hand).
- Paresthesia: Abnormal skin sensations (such as tingling or tickling or itching or burning) usually associated with peripheral nerve damage, often with no apparent physical cause. This includes tingling.
- Tingling: Stinging or prickling sensation, a type of paresthesia.
- Numbness: Loss of the sensation of feeling.

### 10.05.V Timing of Symptoms

- Intermittent symptoms: Those that are described as nocturnal, diurnal, periodic, episodic, transient, occasional, non-constant AND NOT explicitly described as constant, continuous, unrelenting, present day and night, present all the time, etc.
- Constant symptoms: Explicitly described as constant, continuous, unrelenting, present day and night, present all the time, etc.
- If the timing of the symptoms is not described, assume that the symptoms are intermittent.
- When generating a summary score in the Symptoms and Signs Table, select the most severe finding present across all of the visits (constant symptoms, if present). If the finding is never documented during any of the visits, select the less severe finding (intermittent) as a default response.

### 10.06.V Thenar Atrophy

- Thenar muscle atrophy: Concavity of the muscles of the thumb when viewed from the side. However, this description does not need to be present to give credit that thenar atrophy has been documented.
- If thenar atrophy is not mentioned, assume that it is absent.
- When generating a summary score in the Symptoms and Signs Table, select the most severe finding present across all of the visits (thenar atrophy present, if applicable). If the finding is never documented during any of the visits, select the less severe finding (thenar atrophy absent) as a default response.
10.07.V Weak Thenar Muscles on Exam

- Thenar muscle weakness  Weakness on:
  - Thumb abduction strength testing  Weakness of resisted abduction, meaning with the thumb at a right angle to the index finger, the patient moves the thumb moving away from the palm while the examiner applies resistance to the dorsal side of the thumb (i.e., on the side with the nail). The record does not need to be specific as to how thumb abduction was assessed.
  - Thumb opposition strength testing  Weakness of resisted opposition, meaning with the thumb at a right angle to the index finger, the patient moves the thumb toward the palm and toward the 5th digit while the examiner applies resistance to the palmar side of the thumb. The record does not need to be specific as to how thumb opposition was assessed.

- If thenar muscle strength is not described, assume that it is normal.

- When generating a summary score in the Symptoms and Signs Table, select the most severe finding present across all of the visits (weakness, if present). If the finding is never documented during any of the visits, select the less severe finding (no weakness) as a default response.

10.08.V Loss of Sensibility, Digits 1, 2, or 3

- Loss of sensibility in the median nerve distribution  Diminished sensibility on any of the following examination maneuvers. Note that the medical record does NOT need to specify how the maneuvers were performed:
  - Hypalgesia  Diminished ability to perceive painful stimuli, such as a pin prick, at one location when compared with a control location
  - Two-point discrimination  Diminished ability to distinguish the number of points on calipers set 4 to 6 mm apart at one location as compared with a control location
  - Vibration  Diminished ability to distinguish vibration, using a standard tuning fork, at one location relative to a control location
  - Semmes-Weinstein monofilament  Patient is unable to detect a monofilament of 2.83 applied to the pulp of digit 2

- Loss of sensibility means inability or decreased ability to detect stimuli on provocative testing, not subjective or self-reported loss of sensation.

- Median nerve distribution  At least one of digits 1 to 3.

- Control location  Generally this is understood to mean digit 5, but this need not be specified in the medical record.

- If sensibility on physical examination is not described, assume that sensibility is normal.

- When generating a summary score in the Symptoms and Signs Table, select the most severe finding present across all of the visits (loss of sensibility, if present). If the finding is never documented during any of the visits, select the less severe finding (normal sensibility) as a default response.

- Numbers and names of digits/fingers
10.09.V Severity Summary

- Note that, for determining the appropriateness of surgery, severity is based on the patient’s symptoms, signs, and electrodiagnostic testing. It is not based on a provider’s judgments of severity that may be documented in the medical record.

- CTS Unlikely. Not characteristic of CTS:
  - Severity cannot be assessed if the symptoms and signs are unlikely to represent CTS.
  - Appropriateness of surgery can, therefore, not be assessed either. Appropriateness is generally going to be lower than for more characteristic symptoms and signs.
  - Additional measures are relevant if the patient has undergone carpal tunnel surgery, starting with Section 13.
  - If the patient has not undergone carpal tunnel surgery and CTS is unlikely, stop scoring, there are no more relevant measures.

10.10.V Probability Summary

- High Probability: Both required for all patients with MODERATE or SEVERE CTS (EXCLUDES those with MILD CTS)
  - Symptoms are classic/probable for CTS
  - Thenar muscle weakness OR loss of sensibility in digits 1, 2, or 3 on physical examination

- High Probability for those with MILD CTS
  - Symptoms are classic/probable for CTS (required for MILD CTS)
  - Motor and sensory abnormalities are not applicable

- NOT High Probability
  - Patients who do not meet the definitions for high probability above.
  - Exclude patients with symptoms that are unlikely to be CTS.

10.11.V to 10.13.V Prior Treatments and Tests

10.11.V Conservative Therapy Summary

- Failed attempt at conservative therapy: Conservative therapy was attempted and failed to adequately relieve symptoms, including activity modification, splinting, or steroid injection as defined immediately below.
• Note that the adequacy of symptomatic relief is a subjective judgment. If it is clear that the patient had total relief of their symptoms, then this is not a “failed” attempt at conservative therapy. Documentation of the patient’s perception of the adequacy of relief is preferred over judgments by the treating providers.

• Activity modification for six or more weeks: An attempt by the patient to avoid activities that are associated with or trigger the CTS symptoms lasting six or more weeks. This attempt can be prescribed by a physician or self-imposed by the patient.

• Splinting for six or more weeks: A rigid immobilizing device worn to limit flexion and extension at the wrist. Do not include non-rigid bandages, such as ACE wraps.

• Steroid injection: One or more injections of corticosteroids into the carpal tunnel.

• No failed attempt at conservative treatment: One of the following
  o One of the above treatments that was attempted adequately relieved symptoms
  o None of the above was attempted, including attempts at activity modification or splinting that were of insufficient duration
  o Unclear.

10.12.V Electrodiagnosis Summary

• For this question, use the interpretations associated with the electrodiagnostic tests (as interpreted by the providers who performed the tests). Do not use results from scoring the electrodiagnostic quality measures.

• Positive electrodiagnostic tests: One or more tests performed before surgery was reported as consistent with CTS.

• Indeterminate electrodiagnostic tests: None of the tests were positive and one or more results were reported as equivocal or indeterminate for CTS.

• Negative electrodiagnostic tests: All of the tests performed before surgery were reported as negative for CTS.

• No Test: No electrodiagnostic test for CTS was performed at any time.

10.13.V Duration Summary

• Overall duration of symptoms: Count symptoms ascribed to CTS or symptoms in the first to third digits of the affected hand, or radial side of the palm.

• The interval between when patient first presented with symptoms in median-nerve distribution (even if before the study period or in the distant past) and end of study period (if has not had carpal tunnel surgery) or before surgery (if had carpal tunnel surgery).
  o If patients have had symptoms before the designated study period and did not receive any treatments for two years, choose “more than 12 months.”

• If the records document how long the patient reports having symptoms before the first presentation with them, count that time toward the overall duration of symptoms (such as showing up at first visit
with three months of symptoms, the overall duration includes those three months plus the time after the initial presentation).

- If the start of symptoms cannot be determined, use the first mention of the symptoms in the medical record.
SECTION 11: COMPELLING INDICATIONS FOR CARPAL TUNNEL SURGERY

11.01.M Indications for carpal tunnel surgery are not changed by diabetes

- Diabetes mellitus  Documentation in the record of presence or absence of AODM - Adult onset DM, Diabetes – diet controlled, or controlled by oral hyoglycemics, IDDM - Insulin-dependent DM, Ketosis-prone diabetes, MOD - Maturity onset diabetes, MODM - Maturity onset diabetes mellitus, MODY - Maturity onset diabetes of youth, NIDDM - Non-insulin dependent diabetes mellitus, Nonketosis-prone diabetes, Type 1 DM, type 1 diabetes, Type II DM, type 2 diabetes; Secondary DM.

- Do not accept: Abnormal glucose tolerance, Borderline diabetes, Gestational diabetes mellitus (GDM) See selection below, Glucose Intolerance, Impaired fasting glucose (IFG), Impaired glucose tolerance (IGT).

- Documentation that the patient should NOT undergo carpal tunnel surgery due to diabetes Any notation in the medical record that carpal tunnel surgery is contra-indicated, inadvisable, of limited potential benefit, too risky, likely to fail, etc AND that the reason for this conclusion is specifically the fact that the patient has diabetes

- This measure should be scored the same whether diabetic peripheral neuropathy has been diagnosed or not.

- The essence of this measure is that the indications for surgery are unchanged by patients having diabetes, and not that this measure should supersede the measures in Sections 11 and 12 when considering the appropriateness of carpal tunnel surgery for diabetics.

11.02.M Prompt surgery in wrist injury

- Wrist fracture or dislocation: A fracture or dislocation of one or more of the bones in the wrist, including: The distal radius, the distal ulna, scaphoid, capitate, trapezium, trapezoid, lunate, pisiform, triquetrum, and hamate. This fracture can be documented anywhere in the medical record (e.g., x-rays, progress notes, operative report, etc.).
  - The most common injuries associated with CTS are distal radius fracture, lunate dislocation, peri-lunate dislocation, and trans-scaphoid peri-lunate fracture-dislocation.

- Other severe wrist injury: Any other (non-fracture) acute injury to the wrist that a member of the surgical team has described as severe (note: Do not count a description by a non-surgeon as sufficient to consider the injury severe since they may be more likely to consider injuries severe).

- Closed reduction: The physical manipulation of a joint or bone externally (without making a surgical incision) to affect a joint relocation or more proper anatomic alignment of broken bone fragments.

- Immobilization: To make the wrist immovable with splints or stiffened bandages, such as a cast.

- Worsening of CTS symptoms:
  - Provider notes that CTS symptoms worsened after treatment of the wrist injury.
○ Providers document CTS symptoms before treatment of the wrist injury and afterward, and
the terms used to describe the severity of the symptoms suggested they were more severe after
 treatment. For example, “mild CTS” became “moderate CTS,” pain rating went from 2/10
to 5/10, etc.

○ Provider states that the patient has symptoms of CTS (without qualifying them) before the
treatment and describes the symptoms as severe after the treatment.

• Score as “No pass” if carpal tunnel surgery was not performed at all or if it was not performed within
48 hrs of the immobilization or closed reduction.

• Time to offer or performance of surgery:
  ○ If the patient underwent closed reduction or immobilization then surgery, the time extends
from the closed reduction or immobilization to the start time on the operative report.
  ○ If the patient experienced another severe wrist injury and underwent surgery, the time
extends from the trauma to the start time on the operative report.
  ○ If the patient was offered surgery but declined, the time extends to the note documenting
their refusal (instead of to the first incision).
  ○ If any of these times are not documented, then estimate the time based on available records.

**11.03.M to 11.08.M Compelling indications for surgery**

• To assess whether there is a “compelling indication” for surgery (meaning it is necessary, and
potential benefits substantially outweigh risks), use Section 10 variables (specifically 10.09.V through
10.13.V) to score 11.03.M through 11.08.M
  ○ For severity, score using results from 10.09.V Severity Summary
    ▪ Do not use provider judgments about severity, for example.
  ○ For probability, score using results from 10.10.V Probability Summary.
  ○ For conservative therapy, score using results from 10.11.V Conservative Therapy Summary.
  ○ For electrodiagnosis, score using results from 10.12.V Electrodiagnosis Summary.
  ○ For duration, use results from 10.13.V Duration Summary.

• An individual patient will be eligible for no more than one of the measures 11.03.M through
11.08.M and 12.02.M through 12.07.M, and a few patients will be eligible for none of these
measures.

• Start by identifying the severity rating for 10.09.V, Mild, Moderate, Severe, or CTS Unlikely.
  ○ If the 10.09.V response is “CTS Unlikely,” skip to Section 13 if the patient underwent
carpal tunnel surgery. If the patient did not undergo carpal tunnel surgery, there are no
more measures for this patient. Stop scoring.
  ○ For all other patients, read through each of the measures that apply to the patient’s severity
category. Determine whether the patient meets the listed criteria. If they do not, skip to the
next measure matching the patients’ severity.
  ○ If none of 11.03.M through 11.08.M apply, start Section 12.
• If the eligibility criteria for a measure do not include a particular clinical variable then the variable is not relevant to and should be ignored for that measure.
  ○ For example, 11.03.M does not consider duration of therapy. This means that the duration of symptoms was irrelevant in determining that there was a compelling indication for surgery when all of the other four listed criteria are present.

• These measures allow care to “pass” if patients undergo carpal tunnel surgery (which should be relatively easy to determine) or if patients were offered carpal tunnel surgery and declined it (which may be harder to locate in the medical record).
  ○ If the patient did not undergo carpal tunnel surgery and a refusal of surgery cannot be identified in the medical record, then the care does not pass.

• In some cases, the required response for a variable may seem to reduce the necessity for surgery compared with alternative responses that would increase the necessity of surgery. The reason these responses are specified is so that the measures are mutually exclusive (i.e., no patient will be eligible for more than one).
  ○ For example, in 11.07.M the required response specifies that an electrodiagnostic test has not been performed or the tests as a group produced indeterminate results. The patients who had test results that were clearly positive would not be eligible for this measure and may instead be eligible for 11.06.M (where the electrodiagnostic test result is required to be positive).
SECTION 12: COMPELLING CONTRA-INDICATIONS TO CARPAL TUNNEL SURGERY

12.01.M Avoidance of carpal tunnel surgery during pregnancy

- Patients are eligible for this measure if they have CTS during pregnancy, and both need to occur during the study period.
- Care “passes” if such patients do not undergo carpal tunnel surgery, or if they satisfy certain criteria for undergoing carpal tunnel surgery.
- Intolerable pain: The medical record documents that the patient has pain that she cannot tolerate. This can include statements that the pain remains severe, the patient is unable to sleep or function due to pain, the pain is greater than 5 on a 10-point rating scale, etc.
- Nerve impairment: Objective weakness, thenar atrophy, and/or loss of sensibility in the median nerve distribution.
- Severe nerve impairment: Objective weakness, thenar atrophy, or loss of sensibility.
- Progressive nerve impairment: Objective weakness, thenar atrophy, or loss of sensibility that worsens substantially over period of two months or less. Worsening constitutes a statement that the impairment is “progressing/changing/worsening rapidly” or synonyms for this, moving from a description of “moderate” to “severe,” or comparable statements.
- Median nerve distribution: Documentation of the above symptoms occurring in at least one of digits 1 to 3.
- Numbers and names of digits/fingers:
  - 1 = thumb
  - 2 = index finger
  - 3 = middle finger
  - 4 = ring finger
  - 5 = pinkie finger.
- Loss of sensibility in the median nerve distribution: Diminished sensibility on any of the following examination maneuvers. Note that the medical record does NOT need to specify how the maneuvers were performed:
  - Hypalgesia: Diminished ability to perceive painful stimuli, such as a pin prick, at one location when compared with a control location.
  - Two-point discrimination: Diminished ability to distinguish the number of points on calipers set 4 to 6 mm apart at one location as compared with a control location.
  - Vibration: Diminished ability to distinguish vibration, using a standard tuning fork, at one location relative to a control location.
  - Semmes-Weinstein monofilament: Patient is unable to detect a monofilament of 2.83 applied to the pulp of digit 2.
• Loss of sensibility means inability or decreased ability to detect stimuli on provocative testing, not subjective or self-reported loss of sensation.

• Median nerve distribution: At least one of digits 1 to 3.

• Control location: Generally this is understood to mean digit 5, but this need not be specified in the medical record.

• Thenar muscle weakness: Weakness on:
  ○ Thumb abduction strength testing: Weakness of resisted abduction, meaning with the thumb at a right angle to the index finger, the patient moves the thumb moving away from the palm while the examiner applies resistance to the dorsal side of the thumb (i.e., on the side with the nail). The record does not need to be specific as to how thumb abduction was assessed.
  ○ Thumb opposition strength testing: Weakness of resisted opposition, meaning with the thumb at a right angle to the index finger, the patient moves the thumb toward the palm and toward the 5th digit while the examiner applies resistance to the palmar side of the thumb. The record does not need to be specific as to how thumb opposition was assessed.

• Thenar muscle atrophy: Concavity of the muscles of the thumb when viewed from the side.

• Failed attempt at conservative therapy: Conservative therapy was attempted and failed to adequately relieve symptoms, including splinting, or steroid injection as defined immediately below.

• Note that the adequacy of symptomatic relief is a subjective judgment. If it is clear that the patient had total or substantial relief of their symptoms, then this is not a “failed” attempt at conservative therapy. Documentation of the patient’s perception of the adequacy of relief is preferred over judgments by the treating providers.

• Activity modification does not apply during pregnancy.

• Splinting for six or more weeks: A rigid immobilizing device worn to limit flexion and extension at the wrist. Do not include non-rigid bandages, such as ACE wraps.

• Steroid injection: One or more injections of corticosteroids into the carpal tunnel

• No failed attempt at conservative treatment means one of the following:
  ○ Splinting or steroid injection adequately relieved symptoms
  ○ None of the above was attempted, including splinting of insufficient duration.

12.02.M to 12.07.M Compelling CONTRA-Indications for Surgery

• To assess whether there is a “compelling CONTRA-indication” for surgery (meaning it is inappropriate, and potential benefits are substantially outweighed risks), use Section 10A variables (specifically 10.09.V through 10.13.V) to score 12.02.M through 12.07.M
  ○ For severity, score using results from 10.09.V Severity Summary.
    • Do not use provider judgments about severity, for example.
  ○ For probability, score using results from 10.10.V Probability Summary.
  ○ For electrodiagnosis, score using results from 10.12.V Electrodiagnosis Summary.
For conservative therapy, score using results from 10.11.V Conservative Therapy Summary.

For duration, use results from 10.13.V Duration Summary.

- An individual patient will be eligible for no more than one of the measures 12.02.M through 12.07.M and some patients will be eligible for none of these measures.

- Start by identifying the severity rating for 10.09.V, Mild, Moderate, Severe, or CTS Unlikely.
  
  o If the response to 10.08.V is “CTS Unlikely,” skip to Section 13 if the patient underwent carpal tunnel surgery. If the patient did not undergo carpal tunnel surgery, there are no more measures for this patient. Stop scoring.

  o Read through each of the measures that apply to the patient’s severity category.

  o Determine whether the patient meets the listed criteria. If they do not, skip to the next measure matching the patients’ severity.

  o If none of 12.02.M through 12.07.M apply and the patient had surgery, start scoring Section 13.

- If a particular clinical variable is not specified in the eligibility criteria for a measure then it should be ignored for that measure.

- Question 10.01.E has already asked whether or not the patient has undergone carpal tunnel surgery during the study period; it does not need to be documented again in this section.

- In some cases, the required response for a variable may seem to increase the necessity for surgery compared with alternative responses that would reduce the necessity of surgery. The reason these responses are specified is so that the measures are mutually exclusive (i.e., no patient will be eligible for more than one).
SECTION 13: PERIOPERATIVE CARE

13.01.M Elements of CTS-specific surgical evaluation

- Members of the operating team include the operating surgeon as well as interns, residents, and attending physicians who themselves perform carpal tunnel surgery; and nurse practitioners, physical therapists, physician assistants, occupational therapists, or hand therapists that practice in the operating surgeon’s clinic (if this can be determined).
- Exclude visits to the same surgical team if they were for a different problem or the same problem in the opposite wrist.
- Give credit if the elements are documented at different visits. For example, history could be documented at one and the physical exam at another.
- Paresthesias: Abnormal skin sensations (such as tingling or tickling or itching or burning) usually associated with peripheral nerve damage, often with no apparent physical cause. This includes tingling.
- Tingling: Stinging or prickling sensation, a type of paresthesia.
- Numbness: Loss of the sensation of feeling
- Numbers and names of digits/fingers
  - 1 = thumb
  - 2 = index finger
  - 3 = middle finger
  - 4 = ring finger
  - 5 = pinkie finger
- For symptoms in digits 1, 2, or 3, the provider can use the phrase “median nerve distribution” or specify the number or name of the affected digit(s)
- The documentation required to satisfy this measure need not explain how maneuvers were performed, how electrodiagnostic tests were performed, etc.
- Electrodiagnostic testing does not need to be documented for patients who have wrist trauma as the indication for carpal tunnel surgery.

13.02.M Documentation of prior treatments for CTS

- Members of the operating team include the operating surgeon as well as interns, residents, and attending physicians who themselves perform carpal tunnel surgery; and nurse practitioners, physical therapists, physician assistants, occupational therapists, or hand therapists that practice in the operating surgeon’s clinic (if this can be determined).
- Exclude visits to the same surgical team if they were for a different problem or the same problem in the opposite wrist.
• Previous treatments for CTS: Any prior treatment for CTS including any conservative treatment or previous surgery. Examples include but are not limited to:
  o Activity modification
  o Hand/wrist exercises
  o Treatment of risk factors, such as weight loss, treatment of thyroid abnormalities, etc.
  o Splinting
  o Medications and injections
  o Prior operations on the hand, wrist, elbow, brachial plexus, thoracic outlet, cervical spine, etc.
  o Chiropractic manipulation
  o Acupuncture
  o Treatment with herbal supplements or other modalities not typically used by allopathic physicians.

• Patients who have had prior carpal tunnel surgery are excluded from all measures involving surgery so this will not be relevant.

• This measure does apply to patients who have wrist trauma as the indication for carpal tunnel surgery.

13.03.M Preoperative evaluation of suspected cervical radiculopathy

• Cervical radiculopathy: Nerve root dysfunction in the neck, which is usually secondary to chronic pressure or invasion of the root, causes a radicular syndrome of pain and segmental neurologic deficit. The seventh (C7; 60%) and sixth (C6; 25%) cervical nerve roots are the most commonly affected. It occurs when a nerve in the neck is irritated as it leaves the spinal canal. Commonly thought of as a "pinched nerve," cervical radiculopathy is generally from a herniated disc or a bone spur that is pressing against an inflamed nerve root. Most often these are a result of degenerative changes in the neck.

• Suspected cervical radiculopathy: Any note in the record of suspicion of a dysfunction of a nerve root of the cervical spine.

• Look back 18 months before surgery to determine whether this was suspected. A suspicion would be documented in progress notes, electrodiagnostic test reports, imaging study reports, or documents pertaining to patient referrals.

• Exclude patients who have wrist trauma as the indication for carpal tunnel surgery from this measure.

• Electrodiagnostic testing of nerves proximal to the carpal tunnel:
  o Any nerve conduction test (NCS) and/or electromyographic test (EMG) commenting on the presence or absence of cervical radiculopathy or any neurological abnormalities proximal to the median nerve. This broader interpretation gives credit for tests that are read as positive for other types of upper extremity nerve conductions, such as cervical myelopathy, thoracic outlet syndrome, pronator syndrome, etc., since interpreters of the report may not mention
the presence or absence of cervical radiculopathy if there are other important findings that could explain the same symptoms.

- Imaging tests of the cervical spine:
  - Cervical-spine radiographs: X-ray of the cervical spine (that portion of the spine comprising the cervical vertebrae)
  - Give credit for both plain film x-rays and CT (computed tomography)
  - MRI: Magnetic resonance imaging of the cervical spine.
- Evaluation by specialist with expertise in neurological conditions. Referral to a neurosurgeon, orthopedist, spine surgeon or physical medicine physician (e.g., Physiatrist or Rehabilitation Specialist), or other physician with expertise in neurological disorders.

13.04.M Preoperative electrodiagnostic testing for work-associated CTS

- Work-associated CTS: Any notation in the medical record that the current symptoms get worse when the patient is working at a job outside of the home. This does not equate with a workers’ compensation claim or indicate whether or not such a claim is justified.
- Electrodiagnostic testing includes nerve conduction studies and electromyography. Give credit for either here.
- The time frames for eligibility and adherence are selected to include most patients who had such suspicions and testing, yet keep the time for record review manageable.
- Exclude patients who have wrist trauma as the indication for carpal tunnel surgery from this measure.

13.05.M Recent preoperative visit with surgical team

- Visit with operating surgeon or member of team: Notation in the chart that the operating surgeon or a member of the operating team discussed the surgery with the patient within one month prior to carpal tunnel surgery on the study hand.
- Members of the operating team include the operating surgeon as well as interns, residents, and attending physicians who themselves perform carpal tunnel surgery; and nurse practitioners, physical therapists, physician assistants, occupational therapists, or hand therapists that practice in the operating surgeon’s clinic (if this can be determined).
- Include patients who have wrist trauma as the indication for carpal tunnel surgery.

Elements of General Preoperative history

- For all of these measures, exclude patients who have wrist trauma as the indication for carpal tunnel surgery.

13.06.M Medical co-morbidities
• Medical co-morbidities: Notation of presence or absence of any other medical diagnosis including notation of “PMHx” or similar abbreviation, including “PMHx negative” or “otherwise healthy” or other general statements.

13.07.M Past surgical history

• Surgical history: Any operation, not just operations for CTS or relating to current symptoms.

13.08.M Current medications

• Medications: Notation of any medications that the patient is currently taking.
• Notation that patient is not on any medications would count.
• Give credit for any vitamins, minerals, or supplements as well.

13.09.M “Allergies” (medication intolerances)

• Allergies: Notation of presence or absence of any allergies to medications or other types of medication intolerances.
• Can also give credit for a notation of other types of allergies.

13.10.M Review of systems including at least two organ systems

• Review of systems: Constitutional/General, Eye, HEENT, Respiratory, Allergy/Immunology, Cardiac, Gastrointestinal, Genitourinary, Endocrine, Musculoskeletal, Hematologic/Lymphatic, Neurologic, Psychiatric

13.11.M Consent for open procedure in planned endoscopic release

• Endoscopic carpal tunnel release: Surgery to release carpal tunnel ligament through an endoscope.
• Open approach or procedure: A carpal tunnel release surgery in which the skin overlying the carpal tunnel is opened to provide access to the carpal tunnel, rather than exploring the tunnel via an endoscope.
• Consent: A statement that the risks and potential benefits of surgery were discussed, where this documentation specifically includes a statement that the endoscopic approach may need to be changed to an open approach after the start of the operation.

MEASURES PERTAINING TO INTRAOPERATIVE CARE ARE SCORED ON A SECOND WORKSHEET AND ARE INTENDED TO BE SCORED BY A MEDICAL DOCTOR WHO OPERATES ON THE HAND.

13.12.M Requirement for a postoperative visit

• Choose missing if you have some reason to believe that the patient did have a postoperative visit but the note for the visit is not in the medical record, if the medical record for the period after surgery appears to be missing one or more records for visits that you know occurred, or if the surgeon who
performed carpal tunnel surgery does not use this medical record system and you have no way to
determine whether a postoperative visit occurred or not.

○ Do not choose missing just because there is no visit after the date of surgery.

• Medical provider who treats musculoskeletal disorders: Primary care doctor, Internist, Family
  Physician, general practitioner, Occupational Medicine Physician, Rheumatologist, Pain Specialist,
  Neurologist, Emergency Medicine Physician, Orthopedist, Psychiatrist, nurse practitioner or physician
  assistant practicing under the supervision of one of the above specialties, Neurosurgeon, Physical
  Therapist, Occupational Therapist, Hand Therapist, or another type of provider who treats
  musculoskeletal disorders.

○ For this one measure, exclude Chiropractor, Oriental Medicine Practitioner (acupuncturist)
  because postoperative management is not a major element in their training.
13.13.M Elements of postoperative visit with surgical team

- The intent of this measure is to determine what members of the operating team included at any postoperative visits, not whether such visits occurred.
- Score based on what is documented in the note for that visit.
- Members of the operating team include the operating surgeon as well as interns, residents, and attending physicians who themselves perform carpal tunnel surgery; and nurse practitioners, physical therapists, physician assistants, occupational therapists, or hand therapists that practice in the operating surgeon’s clinic (if this can be determined).
- Current carpal-tunnel-related symptoms: Notation in the record that the patient was assessed for CTS related symptoms, including pain, paresthesias, numbness, or tingling, etc. at the time of the postoperative visit.
  - Exclude any mention of prior symptoms, such as those preceding or immediately following surgery.
- Paresthesias: Abnormal skin sensations (such as tingling or tickling or itching or burning) usually associated with peripheral nerve damage, often with no visible physical cause. This includes tingling.
- Tingling: Stinging or prickling sensation, a type of paresthesia.
- Numbness: Loss of the sensation of feeling.


- The measure specifies that, if stiffness is present at a postoperative visit occurring between two weeks and three months after surgery, the patient must have a visit with a member of the operating team within 2 weeks after that.
- The postoperative visits relevant to this measure occur between two weeks and three months after surgery. The patient should be included if stiffness is documented at one or more of the postoperative during this time period.
- Postoperative visits can be to any provider who treats musculoskeletal disorders:
  - Providers who treat musculoskeletal disorders includes members of the operating team, the surgeon, and also other providers who treat musculoskeletal disorders as previously defined.
- Provider who treats musculoskeletal disorders: Primary care doctor, Internist, Family Physician, general practitioner, Occupational Medicine Physician, Rheumatologist, Pain Specialist, Neurologist, Emergency Medicine Physician, Orthopedist, Psychiatrist, Chiropractor, Oriental Medicine Practitioner (acupuncturist), nurse practitioner or physician assistant practicing under the supervision of one of the above specialties, Neurosurgeon, Physical Therapist, Occupational Therapist, Hand Therapist, or another type of provider who treats musculoskeletal disorders
- Finger stiffness: Difficulty bending or a feeling of restricted mobility in the fingers.
- Re-evaluated within two weeks: Notation in the record that the patient was assessed by the surgeon or other member of the surgical team within two weeks of the first postoperative visit at which stiffness was documented.
13.15.M Management of postoperative finger stiffness

- Give credit for the time of referral, not when the visits to the physical/occupational/hand therapist occurred.
- Provider who treats musculoskeletal disorders: Primary care doctor, Internist, Family Physician, general practitioner, Occupational Medicine Physician, Rheumatologist, Pain Specialist, Neurologist, Emergency Medicine Physician, Orthopedist, Physiatrist, Chiropractor, Oriental Medicine Practitioner (acupuncturist), nurse practitioner or physician assistant practicing under the supervision of one of the above specialties, Neurosurgeon, Physical Therapist, Occupational Therapist, Hand Therapist, or another type of provider who treats musculoskeletal disorders.
- Finger stiffness: Difficulty bending or a feeling of restricted mobility in the fingers.
- Physical therapy: A branch of rehabilitative health that uses specially designed exercises and equipment to help patients regain or improve their physical abilities.
- Occupational therapy: A type of rehabilitation therapy that uses real life activities in specific areas and with specific goals, to help patients of all ages prevent, lessen, or overcome physical disabilities.
- Hand therapy: Hand therapy helps a patient regain maximum use of his or her hand after injury, surgery or the onset of disease. Treatment is provided by a hand therapist, someone who is first trained as an occupational or physical therapist and then receives additional training in hand therapy. Hand therapists teach exercises, apply modalities and create custom splints to help the hand heal and protect it from additional injury.

13.16.M Patients who do not improve after surgery require evaluation

- The period during which lack of improvement can be assessed for the purpose of this measure is at least three and no more than nine months after surgery. Before three months after surgery, symptoms may still be improving so it would be too early to conclude that no significant improvement had occurred. Most patients who do not have significant improvement are likely to have this identified by nine months after surgery.
- Lack of significant improvements in symptoms:
  - This is a comparison between the preoperative and postoperative symptoms, with no or limited improvement from the preoperative state to the postoperative one.
  - Any indication that improvement was “minimal,” “suboptimal,” or similar term should be scored as not a “significant improvement.”
  - Modest or some or mild improvement is probably less than significant too, but a little closer to the dividing line.
  - Any statement that symptoms are improved without qualification should be given credit as being significantly improved.
- CTS-related symptoms include any of the following:
  - The patient’s preoperative or usual CTS symptoms.
  - Pain, paresthesias, numbness, or tingling in median-nerve distribution,
• Weakness: Documentation in the record that the patient has any symptoms that indicate weakness in the hand or forearm including dropping things, decreased grip strength, impairment of fine motor skills, etc.
  • Weakness can affect activities including Writing, buttoning of clothes, holding a book while reading, gripping of a telephone handle, opening of jars, household chores, carrying grocery bags, bathing and dressing.
• Paresthesias: Abnormal skin sensations (such as tingling or tickling or itching or burning) usually associated with peripheral nerve damage, often with no apparent physical cause. This includes tingling.
• Tingling: Stinging or prickling sensation, a type of paresthesia.
• Numbness: Loss of the sensation of feeling.
• Surgeon re-examines patient: Notation in the chart that the surgeon as opposed to another member of the surgical team personally re-examines the patient at least once during the required timeframe.

13.17.M Management of lack of improvement after surgery

• The period during which lack of improvement can be assessed for the purpose of this measure is at least three and no more than nine months after surgery. Before three months after surgery, symptoms may still be improving so it would be too early to conclude that no significant improvement had occurred. Most patients who do not have significant improvement are likely to have this identified by nine months after surgery.
• Lack of significant improvements in symptoms:
  • This is a comparison between the preoperative and postoperative symptoms, with no or limited improvement from the preoperative state to the postoperative one.
  • Any indication that improvement was “minimal,” “suboptimal,” or similar term should be scored as “not a significant improvement.”
  • Modest or some or mild improvement is probably less than significant too, but a little closer to the dividing line.
  • Any statement that symptoms are improved without qualification should be given credit as being significantly improved.
• CTS-related symptoms include any of the following:
  • The patient’s preoperative or usual CTS symptoms.
  • Pain, paresthesias, numbness, or tingling in median-nerve distribution,
  • Weakness: Documentation in the record that the patient has any symptoms that indicate weakness in the hand or forearm including dropping things, decreased grip strength, impairment of fine motor skills, etc.
  • Weakness can affect activities including Writing, buttoning of clothes, holding a book while reading, gripping of a telephone handle, opening of jars, household chores, carrying grocery bags, bathing and dressing.
• Diagnostic test of the affected wrist/hand: Electrodiagnostic test of median nerve in this wrist or of other nerves in the same arm, MRI/CT/Ultrasound of this wrist, MRI/CT/XR of cervical spine, shoulder, or arm.

• Evaluation by a specialist who treats musculoskeletal disorders:
  o Do include occupational medicine physician, rheumatologist, neurologist, physiatrist, orthopedist, hand surgeon, neurosurgeon, thoracic surgeon (e.g., in case of thoracic outlet syndrome), spine surgeon, plastic surgeon, pain management physician.
  o Do NOT include a primary care doctor, Family Physician, Internist, general practitioner, Chiropractor, Oriental Medicine Provider (Acupuncturist), or physical/occupational/hand therapist.