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Appendix

TABLE E-1 Upper Limb Quality Measures*

Measure Number	Source	NQS Domain	Structure, Process, or Outcome	Measure	Endorsement/Steward
1	AAOS CPG for diagnosis of carpal tunnel syndrome (2007)	ECC	Process	The physician should obtain electrodiagnostic tests if clinical and/or provocative tests are positive and surgical management is being considered (Grade B)	AAOS, AAPM&R, ASPS, AANEM
2	AAOS CPG for treatment of carpal tunnel syndrome (2008)	ECC	Process	We suggest another nonoperative treatment or surgery when the current treatment fails to resolve the symptoms within two weeks to seven weeks (Grade B)	AAOS, AAPM&R, ASPS, AANEM, AANS, CNS
3	AAOS CPG for treatment of carpal tunnel syndrome (2008)	ECC	Process	Local steroid injection or splinting is suggested when treating patients with carpal tunnel syndrome, before considering surgery (Grade B)	AAOS, AAPM&R, ASPS, AANEM, AANS, CNS
4	AAOS CPG for treatment of carpal tunnel syndrome (2008)	ECC	Process	We recommend carpal tunnel release as treatment for carpal tunnel syndrome (Grade A)	AAOS, AAPM&R, ASPS, AANEM, AANS, CNS
5	AAOS CPG for treatment of carpal tunnel syndrome (2008)	ECC	Process	We recommend surgical treatment of carpal tunnel syndrome by complete division of the flexor retinaculum regardless of the specific surgical technique (Grade A)	AAOS, AAPM&R, ASPS, AANEM, AANS, CNS
6	AAOS CPG for treatment of carpal tunnel syndrome (2008)	ECC	Process	We suggest that the wrist not be immobilized postoperatively after routine carpal tunnel surgery (Grade B)	AAOS, AAPM&R, ASPS, AANEM, AANS, CNS
7	AAOS CPG for treatment of carpal tunnel syndrome (2008)	ECC	Process	We suggest physicians use one or more of the following instruments when assessing patients' responses to CTS (carpal tunnel syndrome) treatment for research: Boston Carpal Tunnel Questionnaire (disease-specific); DASH – Disabilities of the Arm, Shoulder, and Hand (region-specific; upper limb); MHQ – Michigan Hand Outcomes Questionnaire (region-specific; hand/wrist); PEM (region-specific; hand); SF-12 or SF-36 Short Form Health Survey (generic; physical health component for global health impact) (Grade B)	AAOS, AAPM&R, ASPS, AANEM, AANS, CNS
8	AAOS CPG for treatment of carpal tunnel syndrome (2008)	ECC	Process	We suggest that surgeons do not routinely use the following procedures when performing carpal tunnel release: skin nerve preservation (Grade B)	AAOS, AAPM&R, ASPS, AANEM, AANS, CNS
9	AAOS CPG for treatment of distal radius fractures (2009)	ECC	Process	We suggest operative fixation for fractures with post-reduction radial shortening >3 mm, dorsal tilt >10°, or intra-articular displacement or step-off >2 mm as opposed to cast fixation (moderate)	AAOS
10	AAOS CPG for treatment of distal radius fractures (2009)	ECC	Process	We suggest rigid immobilization in preference to removable splints when using nonoperative treatment for the management of displaced distal radius fractures (moderate)	AAOS

11	AAOS CPG for treatment of distal radius fractures (2009)	ECC	Process	In the absence of reliable evidence, it is the opinion of the work group that distal radius fractures that are treated nonoperatively be followed by ongoing radiographic evaluation for three weeks and at cessation of immobilization (consensus)	AAOS
12	AAOS CPG for treatment of distal radius fractures (2009)	ECC	Process	We suggest that all patients with distal radius fractures receive a post-reduction true lateral x-ray of the carpus to assess DRUJ alignment (moderate)	AAOS
13	AAOS CPG for treatment of distal radius fractures (2009)	ECC	Process	In the absence of reliable evidence, it is the opinion of the work group that all patients with distal radius fractures and unremitting pain during follow-up be re-evaluated (consensus)	AAOS
14	AAOS CPG for treatment of distal radius fractures (2009)	ECC	Process	In the absence of reliable evidence, it is the opinion of the work group that patients perform active finger motion exercises following diagnosis of distal radius fractures (consensus)	AAOS
15	AAOS CPG for treatment of distal radius fractures (2009)	ECC	Process	We suggest that patients do not need to begin early wrist motion routinely following stable fracture fixation (moderate)	AAOS
16	AAOS CPG for treatment of distal radius fractures (2009)	ECC	Process	We suggest adjuvant treatment of distal radius fractures with Vitamin C for the prevention of disproportionate pain (moderate)	AAOS
17	AAOS CPG for treatment of glenohumeral joint arthritis (2009)	ECC	Process	We suggest total shoulder arthroplasty over hemiarthroplasty when treating patients with glenohumeral joint osteoarthritis (moderate)	AAOS
18	AAOS CPG for treatment of glenohumeral joint arthritis (2009)	ECC	Process	In the absence of reliable evidence, it is the opinion of this work group that physicians use perioperative mechanical and/or chemical VTE (venous thromboembolism) prophylaxis for shoulder arthroplasty patients (consensus)	AAOS
19	AAOS CPG for treatment of glenohumeral joint arthritis (2009)	ECC	Process	In the absence of reliable evidence, it is the opinion of this work group that total shoulder arthroplasty not be performed in patients with glenohumeral osteoarthritis who have an irreparable rotator cuff tear (consensus)	AAOS
20	AAOS CPG for management of rotator cuff problems (2010)	ECC	Process	In the absence of reliable evidence, it is the opinion of the work group that surgery not be performed for asymptomatic, full thickness rotator cuff tears (consensus)	AAOS
21	AAOS CPG for management of rotator cuff problems (2010)	ECC	Process	We suggest that patients who have rotator cuff-related symptoms in the absence of a full thickness tear be initially treated nonoperatively using exercise and/or non-steroidal anti-inflammatory drugs (moderate)	AAOS
22	AAOS CPG for management of rotator cuff problems (2010)	ECC	Process	It is an option for physicians to advise patients that the following factors correlate with less favorable outcomes after rotator cuff surgery: Workers' Compensation status (moderate)	AAOS
23	AAOS CPG for management of rotator cuff problems (2010)	ECC	Process	We suggest that routine acromioplasty is not required at the time of rotator cuff repair (moderate)	AAOS

24	AAOS CPG for management of rotator cuff problems (2010)	ECC	Process	We suggest surgeons not use a non-crosslinked, porcine small intestine submucosal xenograft patch to treat patients with rotator cuff tears (moderate)	AAOS
25	AAOS CPG for management of rotator cuff problems (2010)	ECC	Process	In the absence of reliable evidence, it is the opinion of the work group that local cold therapy is beneficial to relieve pain after rotator cuff surgery (consensus)	AAOS
26	AAOS CPG for treatment of pediatric supracondylar humerus fractures (2011)	ECC	Process	We suggest nonsurgical immobilization of the injured limb for patients with acute (e.g., Gartland Type I) or non-displaced pediatric supracondylar fractures of the humerus or posterior fat pad sign (moderate)	AAOS
27	AAOS CPG for treatment of pediatric supracondylar humerus fractures (2011)	ECC	Process	We suggest closed reduction with pin fixation for patients with displaced (Gartland Type II and III, and displaced flexion) pediatric supracondylar fractures of the humerus (moderate)	AAOS
28	AAOS CPG for treatment of pediatric supracondylar humerus fractures (2011)	ECC	Process	In the absence of reliable evidence, the opinion of the work group is that emergent closed reduction of displaced pediatric supracondylar humerus fractures be performed in patients with decreased perfusion of the hand (consensus)	AAOS
29	AAOS CPG for treatment of pediatric supracondylar humerus fractures (2011)	ECC	Process	In the absence of reliable evidence, the opinion of the work group is that open exploration of the antecubital fossa be performed in patients who have absent wrist pulses and are underperfused after reduction and pinning of displaced pediatric supracondylar humerus fractures (consensus)	AAOS
30	NQF QPS (CMS PQRS)	CCC	Outcome	Functional status change for patients with elbow, wrist or hand impairments	NQF #0427, PQRS #222, Focus on Therapeutic Outcomes Inc.
31	NQF QPS (CMS PQRS)	CCC	Outcome	Functional status change for patients with shoulder impairments	NQF #0426, PQRS #221, Focus on Therapeutic Outcomes Inc.
32	NQF QPS (CMS PQRS)	CCC	Process	Percentage of patients aged 50 years and older treated for a hip, spine or distal radial fracture with documentation of communication with the physician managing the patient's on-going care that a fracture occurred and that the patient was or should be tested or treated for osteoporosis	NQF #0045, PQRS #024, NCQA
33	NQF QPS	ECC	Process	Laboratory investigation for secondary causes of fracture: fragility fracture work up in those >50 years of age having these blood tests prior to discharge from inpatient status: complete blood cell count (CBC), kidney function test, liver function test, serum calcium, 25(OH) vitamin D level OR oral administration of vitamin D	NQF #2416, The Joint Commission
34	NQF QPS	CCC	Process	Osteoporosis management in women who had a fracture: women age 50-85 patients who received either a bone mineral density test or a prescription for a drug to treat osteoporosis after a fracture occurs	NQF #0053, NCQA
35	NQF QPS (CMS PQRS)	CCC	Process	Osteoporosis: management following fracture of hip, spine or distal radius for men	NQF #0048, PQRS #40,

				and women aged 50 years and older: patients >50 with hip, spine, or distal radius fracture who had a central DXA (dual-energy x-ray absorptiometry) measurement ordered or performed or pharmacologic therapy prescribed	NCQA
36	NQF QPS	ECC	Process	Risk assessment/treatment after fracture: patients age 50 or over with a fragility fracture who have either a dual-energy x-ray absorptiometry (DXA) scan ordered or performed, or a prescription for FDA-approved pharmacotherapy for osteoporosis, or who are seen by or linked to a fracture liaison service prior to discharge from inpatient status. If DXA is not available and documented as such, then any other specified fracture risk assessment method may be ordered or performed	NQF #2417, The Joint Commission
37	CMS PQRS	PCCEO	Process	Osteoarthritis function and pain assessment: percentage of patient visits for patients aged 21 years and older with a diagnosis of osteoarthritis with assessment for function and pain	PQRS #109, AAOS
38	CMS PQRS	CCC	Process	Functional outcome assessment: percentage of visits for patients aged 18 years and older with documentation of a current functional outcome assessment using a standardized functional outcome assessment tool on the date of encounter AND documentation of a care plan based on identified functional outcome deficiencies on the date of the identified deficiencies	PQRS #182, CMS
39	CMS PQRS	ECC	Outcome	Surgical site infection: percentage of patients aged 18 years and older who had a surgical site infection (SSI)	PQRS #357, ACS
40	CMS PQRS	CCC	Process	Closing the referral loop: receipt of specialist report: percentage of patients with referrals, regardless of age, for which the referring provider receives a report from the provider to whom the patient was referred	PQRS #374, CMS
41	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom there is documentation in the medical record of at least one of the specified pieces of history from the time of the initial evaluation of the CTS symptoms through the two subsequent CTS-related visits: 1) occupation including functional job duties; 2) duration at given occupation; 3) whether symptoms improve or worsen at work	RAND
42	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of electrodiagnostic tests performed on the median nerve in the study hand and interpreted as positive for CTS that meet the specified criteria: 1) sensory nerve conduction studies consistent with CTS; 2) sensory nerve conduction study unobtainable AND motor nerve conduction studies consistent with CTS	RAND
43	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom the presence or absence of at least one of the specified occupational exacerbating factors is documented from the time of the initial evaluation of the CTS symptoms through the two subsequent CTS-related visits: 1) mechanical force; 2) vibration; 3) frequent repetitive wrist movements	RAND
44	AHRQ NQMC	PCCEO, ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients having documentation in the medical record that within the first four weeks after the diagnosis of CTS a provider who treats musculoskeletal disorders educated them	RAND

				about CTS (at least 1 of the following): 1) that the hand symptoms represent CTS; 2) treatments for CTS; 3) prognosis; 4) that certain activities may be exacerbating factors; 5) the rationale for a judgment of work-association; 6) that unnecessary time off work may not be beneficial; 7) work-site or work-activity modifications; 8) any other issues relating to CTS	
45	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom CTS was mentioned in the progress note from a follow-up visit with a provider who treats musculoskeletal disorders within four weeks of the visit at which the CTS symptoms were first described as work associated	RAND
46	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom the presence or absence of at least one of the following risk factors was documented in the medical record at the initial evaluation or two subsequent CTS-related visits: rheumatoid or other arthritis, diabetes mellitus, hypothyroidism, pregnancy, and chronic renal failure	RAND
47	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients who are off work for four or more weeks for CTS-related symptoms for whom the visit note documented the presence or absence of one or more of the following: 1) alcohol or substance abuse, 2) depression or anxiety, or 3) other barriers to return to work	RAND
48	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of electrodiagnostic tests performed on the median nerve in the study hand and interpreted as severe CTS that meet all of the specified criteria: 1) included needle electromyography performed on muscles innervated by the median nerve in the symptomatic hand; 2) needle electromyography on this hand showed reduction in recruitment; 3) Needle electromyography on this hand showed motor unit action potentials (MUAPs) of increased duration and amplitude OR the CTS was of acute onset	RAND
49	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients who have documentation in the medical record by the second CTS-related visit after the diagnosis indicating a provider's opinion of the probability that the CTS is work associated and a rationale for that judgment	RAND
50	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients with mild CTS who did not undergo carpal tunnel surgery during the study period (part II). This measure is used to assess the percentage of patients with carpal tunnel syndrome (CTS) who had all of the following characteristics: 1) the CTS was MILD; 2) the presentation was NOT "high probability"; 3) there was NO failed attempt at conservative therapy; 4) an electrodiagnostic test was positive for CTS; 5) the duration of symptoms was up to 12 months; AND who did not undergo carpal tunnel surgery during the study period	RAND
51	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients with mild CTS who underwent carpal tunnel surgery, or were offered it and declined. This measure is used to assess the percentage of patients with carpal tunnel syndrome (CTS) who	RAND

				had all of the following characteristics: 1) the CTS was MILD; the presentation was "high probability"; 2) an attempt at conservative therapy failed; 3) an electrodiagnostic test was positive for CTS; AND who underwent carpal tunnel surgery, or were offered it and declined	
52	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients with moderate CTS who did not undergo carpal tunnel surgery during the study period (part I). This measure is used to assess the percentage of patients with carpal tunnel syndrome (CTS) who had all of the following characteristics: 1) the CTS was MODERATE; Either or both of the following: 2) the presentation is NOT "high probability" AND/OR; 3) there was NO failed attempt at conservative therapy; 4) an electrodiagnostic test has not been performed, or was negative or indeterminate for CTS; 5) the duration of symptoms was less than 3 months; AND who did not undergo carpal tunnel surgery during the study period	RAND
53	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients with moderate CTS who did not undergo carpal tunnel surgery during the study period (part II). This measure is used to assess the percentage of patients with carpal tunnel syndrome (CTS) who had all of the following characteristics: 1) the CTS was MODERATE; 2) the presentation is NOT "high probability"; 3) there was NO failed attempt at conservative therapy; 4) an electrodiagnostic test was positive for CTS; 5) the duration of symptoms was less than 3 months; AND who did not undergo carpal tunnel surgery during the study period	RAND
54	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients with moderate CTS who did not undergo carpal tunnel surgery during the study period (part III). This measure is used to assess the percentage of patients with carpal tunnel syndrome (CTS) who had all of the following characteristics: 1) the CTS was MODERATE; Either or both of the following: 2) the presentation is NOT "high probability" AND/OR;3) there was NO failed attempt at conservative therapy; 4) an electrodiagnostic test was negative for CTS; 5) the duration of symptoms was 3 months or longer; AND who did not undergo carpal tunnel surgery during the study period	RAND
55	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients with moderate CTS who did not undergo carpal tunnel surgery during the study period (part IV). This measure is used to assess the percentage of patients with carpal tunnel syndrome (CTS) who had all of the following characteristics: 1) the CTS was MODERATE; 2) there was NO failed attempt at conservative therapy; 3) an electrodiagnostic test has not been performed or was indeterminate for CTS; 4) the duration of symptoms was 3 months or longer; AND who did not undergo carpal tunnel surgery during the study period	RAND
56	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients with moderate CTS who underwent carpal tunnel surgery, or were offered it and declined (part I). This	RAND

				measure is used to assess the percentage of patients with carpal tunnel syndrome (CTS) who had all of the following characteristics: 1) the CTS was MODERATE; The presentation was "high probability"; 2) an attempt at conservative therapy failed; 3) an electrodiagnostic test was positive for CTS; 4) the duration of symptoms was up to 12 months; AND who underwent carpal tunnel surgery, or were offered it and declined	
57	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients with moderate CTS who underwent carpal tunnel surgery, or were offered it and declined (part II). This measure is used to assess the percentage of patients with carpal tunnel syndrome (CTS) who had all of the following characteristics: 1) the CTS was MODERATE; Either or both of the following:; 2) the presentation was "high probability" AND/OR; 3) an attempt at conservative therapy failed; 4) an electrodiagnostic test was positive for CTS; 5) the duration of symptoms was more than 12 months; AND who underwent carpal tunnel surgery, or were offered it and declined	RAND
58	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients with severe CTS who underwent carpal tunnel surgery, or were offered it and declined (part I). This measure is used to assess the percentage of patients with carpal tunnel syndrome (CTS) who had all of the following characteristics: 1) the CTS was SEVERE; the presentation was "high probability"; 2) an electrodiagnostic test was positive for CTS; AND who underwent carpal tunnel surgery, or were offered it and declined	RAND
59	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients with mild CTS who did not undergo carpal tunnel surgery during the study period (part I). This measure is used to assess the percentage of patients with carpal tunnel syndrome (CTS) who had all of the following characteristics: 1) the CTS was MILD; either or both of the following:; 2) the presentation was NOT "high probability" AND/OR; 3) there was NO failed attempt at conservative therapy; 4) an electrodiagnostic test has not been performed, or produced a negative or indeterminate result; AND who did not undergo carpal tunnel surgery during the study period	RAND
60	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom no provider documented that they prescribed diuretics as treatment for CTS symptoms	RAND
61	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom no provider documented that they prescribed muscle relaxants as treatment for CTS symptoms	RAND
62	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom no provider documented that they prescribed opiates (opioids) as treatment for CTS symptoms	RAND
63	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom no provider documented that they prescribed or recommended NSAIDs as treatment for CTS symptoms	RAND

64	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom the operating surgeon (or member of the surgical team) documents the presence or absence of a history of previous treatments for CTS during the 18 months prior to carpal tunnel surgery	RAND
65	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible visits for which there is documentation in the medical record of the specific job duties or non-occupational activities that are associated with the CTS symptoms	RAND
66	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom one or more of the specified criteria regarding MRI, ultrasound or CT testing is documented in the medical record. This measure is used to assess the percentage of patients for whom the medical record indicates that carpal tunnel syndrome (CTS) was ever suspected (or diagnosed) during the designated study period and the records provide at least six weeks of documented follow-up in the study period AND for whom one or more of the following is documented in the medical record: 1) subsequent to the visit at which CTS was first documented as suspected or diagnosed, NO magnetic resonance imaging (MRI) of this wrist, ultrasound of this wrist, or computed tomography (CT) of this wrist was performed; 2) there is evidence in the medical record that the provider suspected a structural lesion in this wrist before an MRI, ultrasound, or CT was performed; 3) there is evidence in the medical record that an electrodiagnostic test was performed on this wrist before an MRI, ultrasound, or CT was ordered or performed	RAND
67	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients with severe CTS who underwent carpal tunnel surgery, or were offered it and declined (part II). This measure is used to assess the percentage of patients with carpal tunnel syndrome (CTS) who had all of the following characteristics: 1) the CTS was SEVERE; 2) an attempt at conservative therapy has failed; 3) the presentation was "high probability"; 4) an electrodiagnostic test has not been performed, or has produced an indeterminate result; 5) symptoms were present less than 3 months; AND who underwent carpal tunnel surgery, or were offered it and declined	RAND
68	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients with severe CTS who underwent carpal tunnel surgery, or were offered it and declined (part III). This measure is used to assess the percentage of patients with carpal tunnel syndrome (CTS) who had all of the following characteristics: 1) the CTS was SEVERE; 2) an attempt at conservative therapy has failed; 3) the presentation was "high probability"; 4) an electrodiagnostic test has not been performed, or has produced an indeterminate result; 5) symptoms were present for more than 12 months; AND who underwent carpal tunnel surgery, or were offered it and declined	RAND
69	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom the presence or absence of at least one of the specified non-occupational exacerbating factors is documented in the medical record from the time of the initial evaluation	RAND

				of the CTS symptoms through the two subsequent CTS-related visits: 1) mechanical force; 2) vibration; 3) frequent repetitive wrist movements	
70	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible visits for which notes documented whether or not the patient was currently working	RAND
71	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom CTS surgery was performed after the patient was evaluated with one or more of the specified criteria: 1) electrodiagnostic testing of nerves proximal to the carpal tunnel; 2) imaging tests of the cervical spine; 3) evaluation by a physician with expertise in neurological disorders	RAND
72	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom height and weight or a clinical judgment about presence or absence of obesity/overweight are documented in the medical record for the initial evaluation visit	RAND
73	AHRQ NQMC	PCCEO, ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients having documentation in the six weeks before or at the visit, by the provider who prescribed/administered the steroids, that he or she discussed surgery with the patient: 1) the medical record indicates that carpal tunnel syndrome (CTS) was diagnosed before the end of the study period; 2) the patient was offered a steroid injection or oral steroids; 3) a provider who treats musculoskeletal disorders described the symptoms as severe CTS during the prior three months	RAND
74	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible visits for which the progress notes documented that the patient was asked about changes in at least one of the following: pain, paresthesias in the first through third digits, or symptoms of hand weakness	RAND
75	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients who were referred for physical/occupational/hand therapy within one month of the visit during which finger stiffness was first documented	RAND
76	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom a provider who treats musculoskeletal disorders has not documented that carpal tunnel surgery is contraindicated because the patient has diabetes	RAND
77	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom a suspicion of CTS was explicitly documented in the medical record at or before the visit at which a provider first evaluated the finger symptoms	RAND
78	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom the medical record from the visit documented that at least one diagnosis other than CTS was evaluated	RAND
79	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients who had a follow-up visit to a provider who treats musculoskeletal disorders within four weeks of returning to work and for whom the provider's note for this visit documented the presence or absence of occupational functional limitations	RAND
80	AHRQ NQMC	PCCEO, ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom one or	RAND

				more risks of steroids (or prior receipt of steroids) were documented in the medical record as having been discussed within six weeks before the steroids were administered or prescribed	
81	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom the medical record documents that at least one of the following physical examination maneuvers was performed during the visit: testing for sensory abnormalities in median nerve distribution, testing for thenar muscle weakness, and examination for thenar muscle atrophy	RAND
82	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom the medical record for the visit at which splints were first prescribed, or any subsequent visits occurring within six weeks, documented that the splint was prescribed for at least six weeks	RAND
83	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom the physician administering or prescribing steroids documented a follow-up call or visit with the patient within four weeks: 1) the carpal tunnel syndrome (CTS) has been described as work-associated; 2) the medical record indicates that CTS was diagnosed at least four weeks before the end of the study period; 3) the patient was administered a steroid injection or prescribed oral steroids at least four weeks before the end of the study period	RAND
84	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients who are re-examined by the operating surgeon within eight weeks of the visit at which the lack of improvement in CTS-related symptoms was first documented.	RAND
85	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients who, within one year after carpal tunnel surgery and no substantial improvement in CTS-related symptoms, underwent a diagnostic test of the study hand, were evaluated by a different specialist who treats musculoskeletal disorders, or refused further evaluation	RAND
86	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients whose medical record for the visit at which the splint was first prescribed documented that the splint was adjusted so that the wrist was in neutral position	RAND
87	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients whose CTS symptoms worsened after the closed reduction of a wrist fracture or immobilization of the wrist and who underwent carpal tunnel surgery within 48 hours, or for whom refusal of surgery was documented within 48 hours, of the reduction or immobilization	RAND
88	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of patients with CTS who were pregnant who did not undergo carpal tunnel surgery during the study period, or who met the specified criteria	RAND
89	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom the operating surgeon (or member of the surgical team) documents all three specified	RAND

				criteria in the medical record during the 18 months prior to carpal tunnel surgery: 1) history: presence or absence of paresthesias or pain in digits 1, 2, or 3; 2) physical exam: presence or absence of thenar muscle weakness or thenar atrophy; 3) electrodiagnostic testing: discussion of whether such testing was performed and any results	
90	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients having documentation of electrodiagnostic testing during the 18 months before surgery	RAND
91	AHRQ NQMC	PCCEO, ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients having documentation in the medical record that activity modification was discussed with the patient at the visit at which the exposures to mechanical force, vibration, or frequent repetitive wrist movements were first documented	RAND
92	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of patients with CTS who were consented for an endoscopic carpal tunnel release surgery during part of the study period for whom the consent included a provision for an open approach	RAND
93	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom a provider documented the presence of, absence of, or changes to medical comorbidities within 1 month prior to surgery	RAND
94	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom a provider documented the presence of, absence of, or changes to medications within 1 month prior to surgery	RAND
95	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom a provider documented the presence of, absence of, or changes to past surgical history within 1 month prior to surgery	RAND
96	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom a provider documented the presence of, absence of, or changes to symptoms affecting at least two different organ systems within 1 month prior to surgery	RAND
97	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom a transverse carpal ligament repair was not performed	RAND
98	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom either a flexor tenosynovectomy was not performed or proliferative tenosynovitis, or a condition associated with severe proliferative tenosynovitis, was documented in the operative report or in the medical record during the six months before surgery	RAND
99	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom either a superficial epineurotomy was not performed or a specific injury or scarring of the median nerve was documented in the operative report or in the medical record during the six months before surgery	RAND
100	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom either internal neurolysis was not performed or a specific injury or scarring of the median nerve was documented in the operative report or in the medical record during the six months before surgery	RAND

101	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom the medical record documents that a medical provider who treats musculoskeletal disorders or a physical/occupational/hand therapist evaluated the hand during a postoperative clinic visit	RAND
102	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom the medical record documents that the surgeon or a member of the operating team evaluated the current (i.e., postoperative) carpal-tunnel-related symptoms at the first postoperative visit	RAND
103	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom the surgeon used a primary open rather than endoscopic approach	RAND
104	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom there is documentation in the operative report describing the location of the incision(s) in the area of the wrist and the incision was in a location that avoids the injury to the palmar cutaneous branch of the median nerve	RAND
105	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom there is documentation in the operative report that the deep surface of the transverse carpal ligament was identified prior to transection	RAND
106	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom there is documentation in the operative report that the transverse carpal ligament in the wrist was transected	RAND
107	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients who had a second visit, specifically with the surgeon or member of the operating team, within two weeks of the postoperative visit at which finger stiffness was first documented	RAND
108	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom no provider has documented that they prescribed or administered laser therapy as treatment for CTS symptoms	RAND
109	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom a provider documented the presence of, absence of, or changes to allergies or medication intolerances within 1 month prior to surgery	RAND
110	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom a provider documented a visit between the operating surgeon (or member of the operating team) and patient within 1 month prior to the date of the surgery	RAND
111	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of electrodiagnostic tests performed on the median nerve in the study hand that included all of the specified components: 1) motor nerve conduction study on median nerve: amplitude, distal latency AND nerve conduction velocity OR unobtainability were documented for the median nerve in the study hand; 2) sensory nerve conduction study on median nerve: peak latency and amplitude OR unobtainability were documented for the median nerve in the study hand; 3) sensory nerve conduction study on ipsilateral radial or ulnar nerve: peak latency and amplitude were documented for a sensory nerve	RAND

				conduction study of the ipsilateral ulnar or radial sensory nerve at the wrist	
112	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom at least two of the following were documented in the medical record for the initial evaluation visit: location, quality, duration, and onset	RAND
113	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients who have either four or fewer injections in the study hand before the end of the study period or five or more injections in the study hand before the end of the study period and documented refusal of surgery during the six months before the fifth injection	RAND
114	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of electrodiagnostic tests performed on the median nerve in the study hand that included a documentation of skin temperature	RAND
115	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of electrodiagnostic tests performed on the median nerve in the study hand whose first skin temperature recorded for that hand/arm was less than or equal to 32°C that have documentation that a repeat skin temperature was at least 32°C before the nerve conduction studies were performed	RAND
116	AHRQ NQMC	ECC	Process	Carpal tunnel syndrome (CTS): percentage of eligible patients for whom the progress notes from the visit document the presence or absence of at least one of the following: trauma, deformity, and fever	RAND
117	AHRQ NQMC	ECC	Process	Diagnosis and treatment of osteoporosis: percentage of patients diagnosed with osteoporosis who are on pharmacologic therapy	ICSI
118	AHRQ NQMC	ECC	Process	Diagnosis and treatment of osteoporosis: percentage of patients who were assessed for risk factors for osteoporosis during an annual preventive visit	ICSI
119	AHRQ NQMC	ECC	Process	Diagnosis and treatment of osteoporosis: percentage of patients who were found to be at risk for bone loss or fractures who had bone densitometry	ICSI
120	AHRQ NQMC	ECC	Process	Diagnosis and treatment of osteoporosis: percentage of patients with a history of low-impact (fragility) fracture and diagnosed with osteoporosis due to secondary causes offered treatment	ICSI
121	AHRQ NQMC	ECC	Process	Diagnosis and treatment of osteoporosis: percentage of patients with whom adequacy of vitamin D and calcium dietary supplementation were addressed	ICSI
122	AHRQ NQMC (CMS PQRS)	ECC	Process	Osteoporosis: percentage of female patients aged 65 years and older who have a central DXA measurement ordered or performed at least once since age 60 or pharmacologic therapy prescribed within 12 months	NQF #0046, PQRS #039, AAFP, AAOS, ACR, NCQA, AMA PCPI, TES
123	AHRQ NQMC	ECC	Process	Osteoporosis testing in older women: the percentage of Medicare women 65 years of age and over who report ever having received a bone density test to check for osteoporosis	NCQA
124	AHRQ NQMC (CMS PQRS)	ECC	Process	Percentage of patients aged 18 years and older who were diagnosed with rheumatoid arthritis and were prescribed, dispensed, or administered at least one ambulatory prescription for a disease-modifying anti-rheumatic drug (DMARD)	NQF #0054, PQRS #108, NCQA
125	AHRQ NQMC	ECC	Process	Osteoporosis: percentage of patients, regardless of age, with a diagnosis of	AAFP, AAOS, AACE, ACR,

				osteoporosis who are either receiving both calcium and vitamin D or had documented counseling regarding both calcium and vitamin D intake, and exercise at least once within 12 months	NCQA, AMA PCPI, TES
126	AHRQ NQMC	ECC	Process	Assessment and management of chronic pain: percentage of patients diagnosed with chronic pain with referral to physical rehabilitation and/or behavioral management therapy	ICSI
127	AHRQ NQMC	ECC	Process	Assessment and management of chronic pain: percentage of chronic pain patients who are referred to diagnostic and/or therapeutic procedures if the goals for pain control or functional status have not been met	ICSI
128	AHRQ NQMC	ECC	Process	Assessment and management of chronic pain: percentage of patients diagnosed with chronic pain with documentation of reassessment of pain at the time of follow-up visits using a standardized tool that addresses pain intensity, location, pattern and current functional status	ICSI
129	AHRQ NQMC	ECC	Process	Assessment and management of chronic pain: percentage of patients diagnosed with chronic pain with documentation of receiving education regarding their diagnosis of chronic pain, medications, importance of physical activity and/or any interventional procedures in the medical record	ICSI
130	AHRQ NQMC	ECC	Process	Assessment and management of chronic pain: percentage of patients diagnosed with chronic pain with documentation of screening for major depression and chemical dependency	ICSI
131	AHRQ NQMC	ECC	Process	Assessment and management of chronic pain: percentage of patients diagnosed with chronic pain with functional outcome goals documented in the medical record	ICSI
132	AHRQ NQMC	ECC	Process	Assessment and management of chronic pain: percentage of patients with chronic pain diagnosis with documentation of a pain assessment completed at initial visit using a standardized tool that addresses pain intensity, location, pattern, mechanism of pain, current functional status and follow-up plan	ICSI
133	CMS PQRS	ECC	Process	Percentage of patients aged 50 years and older with a diagnosis of osteoporosis who were prescribed pharmacologic therapy within 12 months	PQRS #041, NCQA; AMA PCPI
134	CMS PQRS	C/PH	Process	Percentage of visits for patients aged 18 years and older with documentation of a pain assessment using a standardized tool(s) on each visit AND documentation of a follow-up plan when pain is present	NQF #0420, PQRS # 131

*NQS = National Quality System, AAOS = American Academy of Orthopaedic Surgeons, CPG = Clinical Practice Guideline, ECC = effective clinical care, AAPM&R = American Academy of Physical Medicine and Rehabilitation, ASPS = American Society of Plastic Surgeons, AANEM = American Association of Neuromuscular and Electrodiagnostic Medicine, AANS = American Association of Neurological Surgeons, CNS = Congress of Neurological Surgeons, SF = Short Form, PEM = patient education measure, DRUJ = distal radioulnar joint, NQF = National Quality Forum, QPS = Quality Positioning System, PQRS = Physician Quality Reporting System, CCC = communication and care coordination, NCQA = National Committee for Quality Assurance, DXA = dual x-ray absorptiometry, FDA = Food and Drug Administration, CMS = Centers for Medicare & Medicaid Services, PCCEO = person and caregiver-centered experience and outcomes, ACS = American College of Surgeons, AHRQ NQMC = Agency for Healthcare Research and Quality National Quality Measures Clearinghouse, RAND = RAND Corporation, ICSI = Institute for Clinical Systems Improvement, AAFP = American Academy of Family Physicians, ACR = American College of Rheumatology, AMA PCPI = American Medical Association Physician Consortium for Performance Improvement, TES = The Endocrine Society, AACE = American Association of Clinical Endocrinologists, and C/PH = community/population health.