CENTER FOR HEALTH AND SAFETY IN THE WORKPLACE

A study by the RAND Institute for Civil Justice and RAND Health

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REPORT

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

Appendix II: Quality Measures: Overview of Use

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Supported by the California Commission on Health and Safety and Workers' Compensation and by the Zenith Insurance Company

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Appendix II: Quality Measures: Overview of Use

This Appendix provides an overview of how to use of a set of measures for assessing the quality of medical care provided to patients with possible or actual carpal tunnel syndrome (CTS). These measures were designed so that quality-of-care could be assessed by reviewing patient's medical records. While it is possible that a few measures could be scored using administrative data (such as billing records containing ICD-9 and CPT codes), this will not be possible for most of the measures. The materials needed to actually use the measures are included in Appendices III through VII.

Clinical Topics Covered

This set of measures is intended to be fairly comprehensive in that it addresses the initial approach to patients with symptoms that could be CTS; diagnostic tests; issues pertaining to activity modification and/or work-associated CTS symptoms; whether surgery was offered to patients who would be likely to benefit substantially from it; whether surgery was not performed on patients for whom the risks were greater than the potential benefits; and care before, during, and after surgery. Figure II-A is a flow diagram that describes an idealized clinical course of care for a patient with CTS. Most of the quality measures we have developed specifically relate to one of the boxes in the figure. As patients move through the course of their care (from top to bottom in the figure), the size of the relevant patient population shrinks. Initially, CTS is a possibility in a relatively larger population. Because only a fraction of patients with relevant symptoms are ultimately diagnosed CTS, the population relevant to non-operative treatment measures is smaller. And because and only a fraction of patients with CTS undergo surgery, the population relative to surgical treatment measures is smaller still. The Scoring Instructions and Data Forms reflect this idealized clinical course:

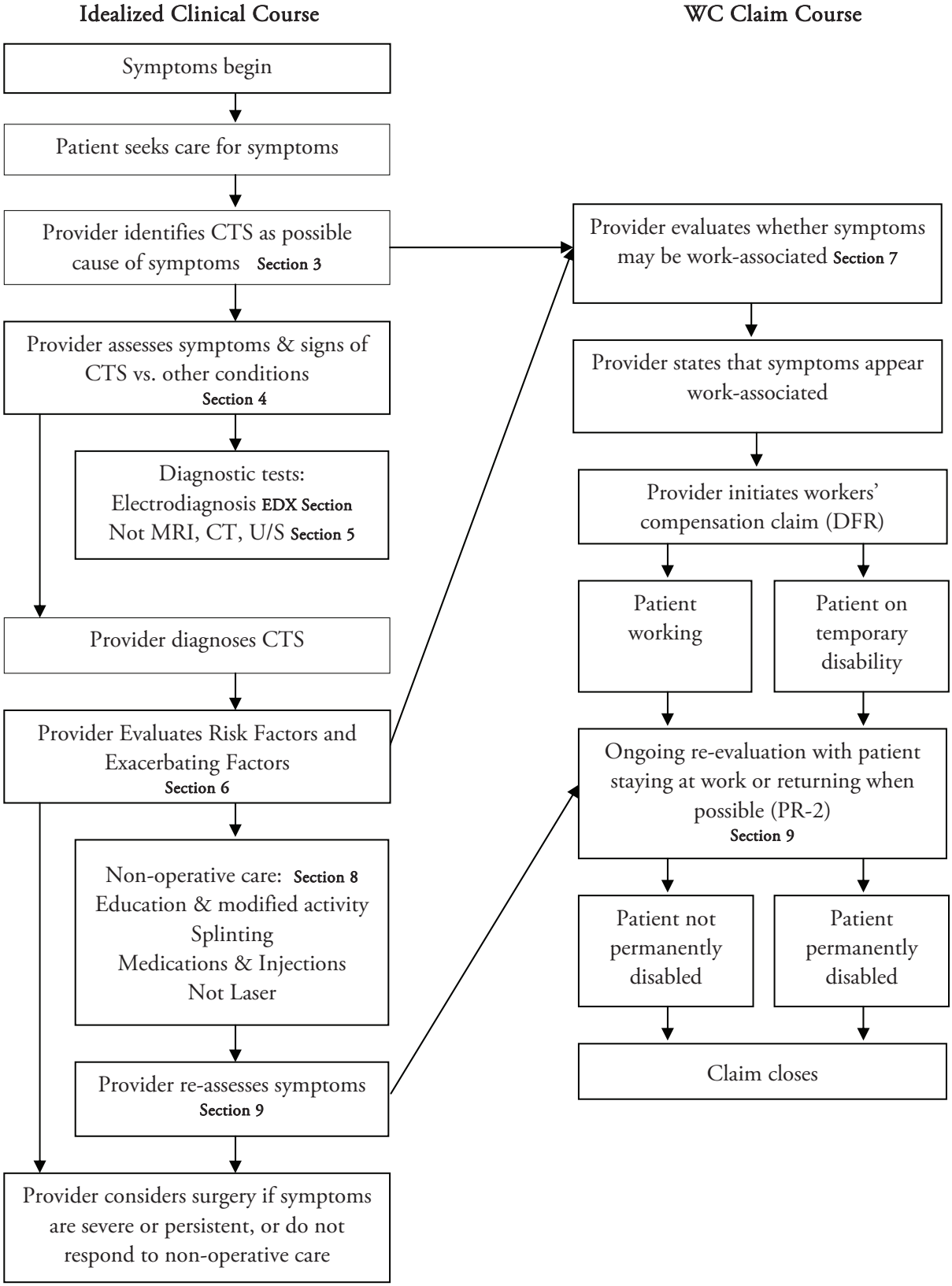
1. CTS as possible cause of symptoms
2. Symptoms and signs of CTS vs. other conditions
3. Imaging studies
4. Non-occupational risk factors and exacerbating factors
5. Work-associated CTS symptoms
6. Non-operative treatment
7. Follow-up
8. Surgical decision-making
9. Compelling indications for carpal tunnel surgery
10. Compelling contra-indications to carpal tunnel surgery
11. Peri-operative care

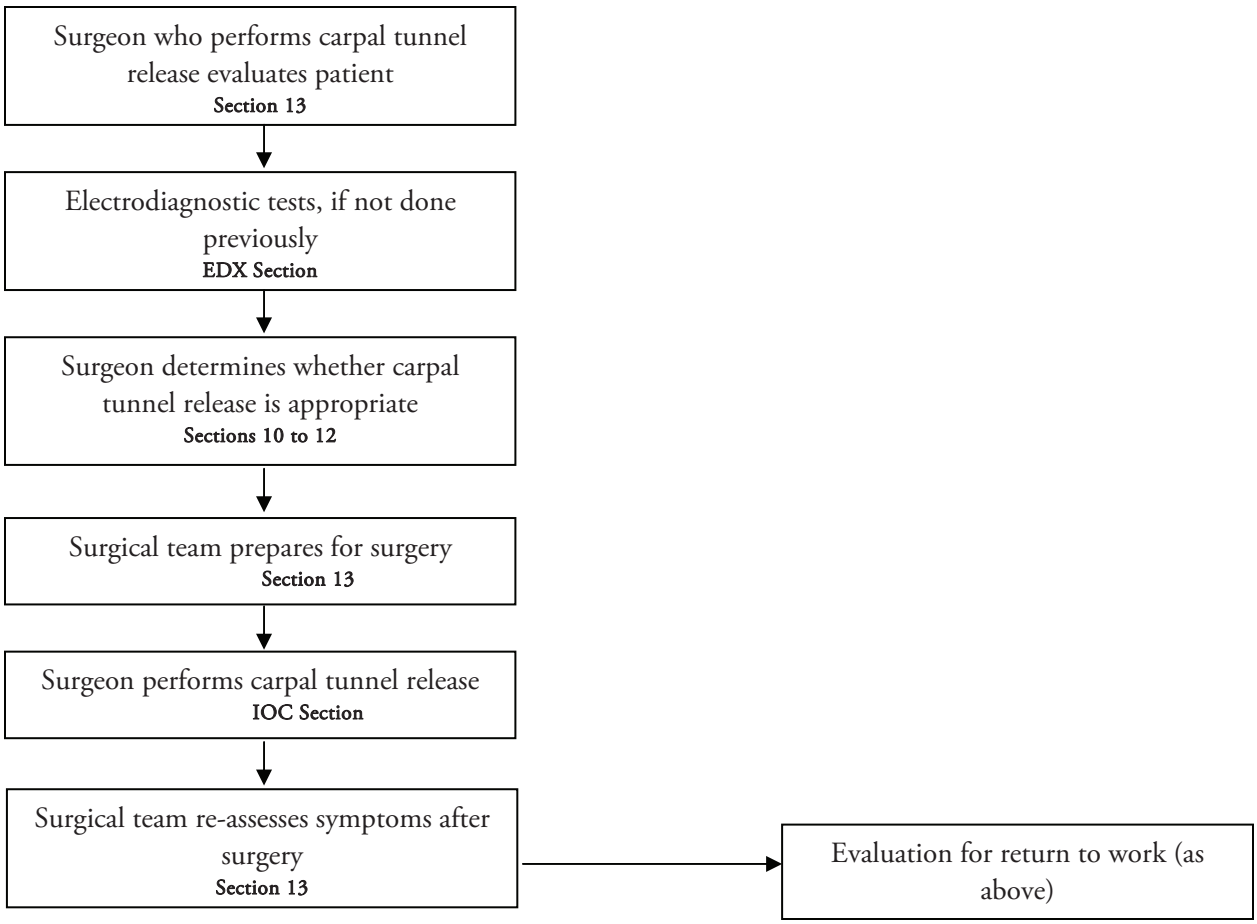
For the main set of measures, in Appendix IV, the objectives of Sections 3 through 5 are to assess whether providers performed the appropriate clinical work-up. Consequently, these measures were designed to apply to patients with a variety of symptoms in the wrist or hand; i.e., for patients in whom CTS would be in the "differential diagnosis" list. This list includes both neurological and non-neurological conditions. Section 3 focuses patients having paresthesias, numbness, and tingling; therefore a distinct subgroup of patients with neurological conditions should be included in the sample. Section 4 includes some measures that pertain to serious or urgent non-neurological conditions that are clinically dissimilar to CTS; therefore, a distinct subgroup of patients with non-neurological conditions should also be included. Starting with Section

6, only patients with a diagnosis of CTS are eligible for the measures. Starting with Section 12, only patients who have undergone carpal tunnel surgery are eligible for the measures.

Appendices V and VI focus on highly technical aspects of care, including electrodiagnostic testing (Appendix V, the "EDX Section") and intraoperative care (Appendix VI, the "IOC Section"). Our pilot test of these measures suggests that physicians and surgeons with specific experience in these areas will be needed to accurately score these measures.

Figure II-A.
Events in the Course of Clinical Care and Workers' Compensation Claim





Data Collection: Applying the Quality Measures to a (Hopefully) Random Sample of Patients

This process entails the following steps:

1. Identifying and training abstractors,
2. Identifying a sample of patients,
3. Having abstractors apply the quality measures to patients' records, and
4. Analyzing findings.

A. Identifying and Training Abstractors

An organization planning to use these measures will need to recruit individuals with sufficient medical expertise to apply the measures. These individuals will primarily be nurses (licensed vocational nurses or registered nurses), although other providers with relevant experience may also work.

The organization planning to use the measures will need to develop a protocol for training the abstractors. Ideally, one to two full days of training will be needed for the abstractors to understand the task expected of them. The appendices to the current report provide most of the materials required to conduct the training, including Scoring Instructions, Guidance Documents, and Data Forms.

Obtaining sample patient records to use in training is a critical step since the abstractors may have claims review experience but will not be likely to have experience applying these types of measures. Reviewing a few (at least 5 to 10) sample patient records before actually collecting data is important. The records should, ideally, be selected to illustrate a variety of points that will be important for abstractors to understand, so experienced the project leaders should consider selecting the records in advance of the training. It may be helpful to have abstractors score the first few records in pairs so that they can discuss the issues. A physician with expertise in a relevant discipline should be available to answer questions both during the training process and during data collection.

In addition, abstractors will continue to learn more about the data collection process as they begin to do it. Expect the quality of the data an individual abstractor collects to improve substantially over the first several cases, perhaps reaching a plateau after about ten records; i.e., the results for the first ten records per abstractor should probably not be "counted" unless the abstractors work in pairs and discuss their answers to each question together. The ultimate objective of training is to ensure that the measures scored in an accurate (i.e., true to the measures and scoring instructions being used by the organization) and reliable (i.e., consistent across records and across abstractors) manner. Not all individuals who undergo training achieve the ability to score adherence to the measures accurately and reliably, however, and this requires effort to detect. To determine whether proficiency has been achieved, ideally, an individual who is trusted to abstract records in a meticulous and accurate manner should review at least three records per abstractor.

If the organization wishes to assess the quality of electrodiagnostic testing and intra-operative care, then physicians who perform electrodiagnostic tests and surgeons who operate on the hand, respectively, will be needed to abstract a small number of measures. We suggest training the physician and nurse abstractors separately because the role of the physician abstractors is quite specific and much more limited.

B. Identifying Study Subjects

To identify study subjects, the organizations using the measures will need to use claims data (a.k.a. billing or administrative data) to identify patients with actual or potential CTS. The sample size depends on the objectives of the project. Generally, at least 200 patients are needed to compare quality of care between two entities. For example, if the purpose is to compare quality among clinics within a regional network, at least 200 medical records will be needed per network. The CPT and ICD-9 codes required to identify relevant patients are described below. See Appendix IV. Identifying Relevant Patients Using Administrative (Claims) Data for detailed instructions.

C. Having Abstractors Apply the Quality Measures to Study Subjects' Records

The abstractors should apply the quality measures to the medical records of the patients selected to participate in the project, which entails answering questions on the Worksheets and recording them on the Data Collection Forms. The time required to review each subject's record may be about half an hour to one hour, depending on the experience of the abstractor, format of the records, and method of documentation (e.g., if electronic data entry is used

Quality assurance is as important to data collection as it is to providing care. Ideally, a small percentage (about 5-10%) of the records should undergo re-review by a second or leading abstractor for data quality control purposes.

D. Analyzing Findings

After data collection, information recorded on the Data Forms will need to be entered into a computer for analysis. Missing and invalid or illogical responses should be corrected or marked as missing during the transfer of information from the Data Forms to electronic forms.

The minimum data elements that must be recorded on the Data Forms and entered electronically are the eligibility and adherence variables. The eligibility variables have a suffix ".E" or ".ME"; the adherence variables have a suffix ".A" or ".MA." The Data Forms also include variables for the information that is needed to score the measures, which we call measured components; these are indicated by the suffix ".MC." These component variables can be useful in determining where there are specific opportunities for improvements in care, meaning specific care processes that tend not to adhere to the measures. In addition, the component variables can be used to identify responses to different questions that are internally inconsistent: certain variables have responses that are based on the same information and, if those responses are not observed together for certain patients, data errors are likely to be present.

Next, for each measure, the number of times care was ELIGIBLE for the measure should be determined (i.e., this is the denominator for the measure). Nearly all of these measures are scored only once per patient so the number of times care was eligible will usually equal the number of patients who were eligible.

Finally, for each measure the number of times care "passed" the measure, also called ADHERENCE, should be determined (i.e., this is the numerator for the measure). This is determined by determining how often care (i.e., patients, visits, or electrodiagnostic tests) met the criteria for the measure. Sometimes multiple questions are involved in determining adherence, but each measure ultimately has a summary PASS/NO PASS question. Dividing the numerator by the denominator for each measure gives its pass rate.

See Appendix VII, Quality Measures: Instructions for Analyzing Data for specifics on how to determine eligibility and adherence for each measure using data collected with the worksheets and scoring forms in this document. It includes the codes for the variables that comprise eligibility and adherence for each measure.

There are no widely established, universally accepted ways of assessing the overall pass rate. Sometimes researchers have calculated the denominator by simply adding up all of the times that care was eligible for the measures under consideration, then calculated the numerator by adding up all of the times care passed. Organizations may want to weight some measures more than others, however, meaning they may want to increase the measures' effect on an overall quality score. For example, whether a patient received necessary or inappropriate surgery may have a greater effect on his or her outcome than whether or not he or she did not receive muscle relaxants; consequently, users of the measures may want to prioritize the measures pertaining to the appropriateness of surgery more highly than those pertaining to medication use.