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Notice of Independent Review Decision

May 30, 2013

DESCRIPTION OF THE SERVICE OR SERVICES IN DISPUTE:

Office visits with cortisone injections

A DESCRIPTION OF THE QUALIFICATIONS FOR EACH PHYSICIAN OR OTHER HEALTH CARE PROVIDER WHO REVIEWED THE DECISION:

Board Certified Orthopedic Hand Surgeon

The rationale for the opinions stated in this report is based upon experience as a licensed, board-certified, practicing Orthopaedic Hand Surgeon. Additionally, I have read and thus rely upon numerous texts and thousands of pertinent professional journal articles, none of which should be considered solely authoritative or definitive. The textual basis for the opinions includes, but is not limited to past and current editions, of the following: a) Campbell's Operative Orthopedics, b) Green's Operative Hand Surgery, c) Peimer's Surgery of the Hand and Upper Extremity, d) McKinnon and Dellon's Surgery of the Peripheral Nerve, e) Lister's The Hand, Diagnosis and Indications, f) Morrey's The Elbow and its Disorders, g) Cooney's The Wrist, h) Lichtman's The Wrist, i) Taleisnik's The Wrist, j) Hand Clinics, and k) Hand Surgery Update 4, published by the ASSH.

I hereby certify that I hold the appropriate credentials as defined by 28 TAC § 180.1 to perform this review.

REVIEW OUTCOME:

Upon independent review, the reviewer finds that the previous adverse determination/adverse determinations should be:

Partially Overturned (Agree in part/Disagree in part)

Medical documentation **partially supports** the **medical necessity** of the health care services in dispute.

The requested services are office visits with cortisone injections. It appears that the previous denial was based on causal relationship and not on whether the request was medically reasonable or necessary.

Based on the medical records submitted and current EBM literature, I concur that the patient's chronic recurrent CTS is not causally related to or aggravated by the patient's work activities/alleged occupational injury. Regarding causation (determination), the ODG Carpal Tunnel Syndrome Chapter states that some controversy continues about whether computer work is a risk factor for CTS, with current opinion that the keyboard is low risk and that the mouse may be mild risk. There is some evidence to conclude that CTS symptoms are associated with workplace activities, but current studies have not proven a causal relationship. In the AMA Guides to the Evaluation of Disease and Injury Causation, the carpal tunnel section indicates that keyboard activities, awkward postures and length of employment provide insufficient evidence for an occupational risk factor for CTS. Per the EBM literature, computer use does not increase the risk of developing CTS. Until recently, the two most referenced studies are the Mayo Clinic study (Stevens, Neurology, 2001, 56:1568-70) and the Danish study (Andersen, JAMA, 2003, 289:2963-69). The Canadian study (Watts, Can J Plastic Surgery, 2003, 11:199-201) concluded that "an extensive literature review revealed that there is minimal to no evidence to support the view that CTS should be a compensated claim." They found that many of the decisions to cover CTS as a Workers' Comp claim were not evidence based. A recent study, indicated as the Swedish study (Atroshi, Arthritis and Rheumatism, 2007, 56:3620-25), concludes that intensive keyboard use at the workplace is associated with a lower risk of CTS. The newest study (Lozano-Calderon, JHS, April 2008, 33-A: 525-538) evaluated 117 English language published articles from the National Library of Medicine's PubMed data base regarding the etiology of CTS. This review and analysis of the literature concluded that "the etiology of CTS is largely structural, genetic and biological with environmental and occupational factors, such as repetitive hand use, playing a minor and more debatable role. There is insufficient evidence to implicate hand use of any type, typing in particular, as an important and direct cause of CTS." At risk occupations for development of CTS include meat processors, fruit packers, aircraft and auto assembly workers and those jobs requiring prolonged vibratory equipment use. There are no studies reported that show an increased risk of CTS by typing or computer use. The current scientific and medical studies seem to verify that there is no increase in CTS among computer users versus the general population. The evidence is inadequate to implicate occupational factors in CTS. This individual's job duties do not put her at greater risk than the general public for developing this ordinary disease of life. Some of these articles are referenced in the ODG.

However, the requested services are appropriate and medically reasonable for treatment of chronic recurrent bilateral CTS. Regarding injections, the ODG Carpal Tunnel Syndrome Chapter recommends a single injection as an option in conservative treatment. Corticosteroid injections will likely produce significant short-term benefit, but many patients will experience a recurrence of symptoms

within several months after injection. Symptomatic relief from a cortisone/anesthetic injection will facilitate the diagnosis; however the benefit from these injections although good is short-lived. Steroid injections and wrist splinting may be effective for relief of CTS symptoms but have a long-term effect in only some patients. A recent clinical trial found that, at 3 months of follow-up, 94.0% of the wrists in the steroid injection group showed improvement; at 6 months 85.5% showed improvement, and at 12 months 69.9% showed improvement. Over the short term, local steroid injection was better than surgical decompression for the symptomatic relief of CTS, but at 1 year, local steroid injection was slightly less effective compared to surgical decompression (but about “as effective”). (Ly-Pen, 2005) This systematic review found that the usefulness of steroid injections as initial treatment for improving CTS symptoms is still supported by the recent literature, but these effects are temporary. (Bernardino, 2011)

Regarding repeat Injections, as noted above, a single injection is recommended. Additional injections are only recommended on a case-to-case basis. Repeat injections are only recommended if there is evidence that a patient who has responded to a first injection is unable to undertake a more definitive surgical procedure at that time. A non-controlled study allowing for evaluation of repeat injections found 17 of 46 patients continued to enjoy satisfactory relief of carpal tunnel symptoms at 18 months of follow-up, but 13 of these 17 patients required multiple injections. Only 4 patients who had only one injection had adequate symptom control after 18 months. The median interval of pain relief after the first injection was 103 days and the duration of pain relief after repeated injections progressively dropped over the course of the study (range: 96 days to 73 days, with the last duration after 7 injections). (Armstrong, 2004)

Based on my forty two years of combined orthopaedic surgery and hand surgery professional experience, I have seen a number of patients with chronic recurrent CTS who do not desire surgery for one reason or another. I have seen these patients once or twice yearly for CT cortisone injections that subsequently have provided symptomatic relief for six months to one year or more. They realize that the injections provide temporary relief and are not curative. Based on review of this patient’s medical records, she has obtained symptomatic relief from injections at one year to greater than 2½ year intervals. As long as there is no clinical intrinsic muscle weakness or atrophy, this is a safe and reasonable treatment program.

INFORMATION PROVIDED TO THE IRO FOR REVIEW:

ODG criteria and AMA Guides to Evaluation of Disease and Injury Causation, 2008, was utilized for the denials.

PATIENT CLINICAL HISTORY [SUMMARY]:

The patient is a female who reported carpal tunnel in her hands on xx-xx-xx, due to repetitive motion in the court-reporting field.

PRE-INJURY RECORDS

1993: On September 13, 1993, evaluated the patient for aching pain in both wrists with some popping of the right wrist. The patient reported that she started

having a problem with her right wrist about five months ago. She did not remember any specific injury to the wrist but noted that at that time, she might have strained her hand on the steering wheel of the car when the power steering was not working. She also cleaned a barbecue grill which required a lot of forceful scraping. She was working as a court reporter and had continued to have some problems with her right wrist. After about two months, she started having problems on the left side as well. She had been treated with Naprosyn for 10 days. She used a wrist guard for the right side and then a brace and in spite of those treatments her problem had continued. She had to type about five-and-a-half hours per day between depositions at times and straight typing at a CRT at other times. She developed an aching pain at the wrist which on the right side would radiate into the dorsum of the hand on the ulnar side. She had some radiation up into the distal forearm but there was no numbness or tingling into the fingers. Surgical history was positive for cervical fusion in 1992. Examination of the right wrist showed some tenderness at the lunate triquetral joint, positive Phalen's test on both sides after 40 seconds for a feeling of coldness into the fingers, some decreased light touch sensation throughout the tips of finger and thumb of the right hand which affected the right small finger the least, some definitely decreased sensation in the left thumb, index and long finger as compared with the ring and small fingers. X-rays of the bilateral wrists and hands were unremarkable. diagnosed right carpal tunnel syndrome (CTS) and overuse syndrome of the left wrist. He explained to the patient that it seemed that both of her problems were basically cumulative trauma disorders. On the right side, it appeared to be more long-standing and therefore had become more definite. The left side seemed to be relatively early. provided a Futura wrist brace for the left side to wear that at night. The patient would wear the right brace at night also. If the inflammation could be settled, then an injection for the right carpal tunnel should be performed.

On October 5, 1993, performed an injection of Hydeltra, Kenalog and lidocaine into the right carpal tunnel and prescribed Naprosyn to help the left side.

On October 27, 1993, the patient reported she was still having some ache at the volar aspect of the right wrist. referred the patient for an electromyography/nerve conduction velocity (EMG/NCV) test.

On October 28, 1993, performed an EMG/NCV study of the bilateral upper extremities that showed no electrodiagnostic evidence to suggest the presence of radiculopathy, branchial plexopathy, generalized peripheral neuropathy or peripheral nerve entrapment syndrome. The patient was instructed to schedule a follow-up appointment for further evaluation and treatment.

On November 4, 1993, the patient noted that the injection for the right side had really done well and settled things down. The left side had also been improving. reviewed the EMG/NCV studies that were within normal limits. He recommended completing a course of Lodine.

On December 6, 1993, the patient realized that the inflammation had settled well. recommended follow-up on a p.r.n. basis noting that there were no signs of inflammation.

1994: On March 8, 1994, evaluated the patient for wrist, elbows and fingers symptoms. He noted that the left side had surpassed the right side. She had pain in the wrist and hand and aching pain in the palm. It was hard to say if it was cubital tunnel or carpal tunnel because they were somewhat variable. On examination, the patient had subluxation of the ulnar nerve at the elbow on both sides and some tenderness but did not have any true paresthesias. that the patient probably had cumulative trauma involving the carpal tunnel as well as cubital tunnel areas. injected the carpal tunnel on the left side and gave a prescription for vitamin B6 and Vicodin.

On May 17, 1994, the patient complained of having symptoms off and on. She pointed to her ulnar two digits and up her arm to her elbow and stated that it had always been along that area. When she bent her arm sometimes, she would have a "funny bone" feeling at her elbow in addition. recommended an elbow splint around the elbow at night and two-to-six hours during the daytime if it was not enough.

On June 28, 1994, noted the patient was six weeks post injection into the cubital tunnel on the right side. She had substantial improvement for a while and felt quite good. recommended either performing an injection in the cubital tunnel on the left side or repeat EMG/NCV study looking for evidence of cubital tunnel syndrome.

On December 5, 1994, noted the patient was having pain mainly in the ulnar side of the hand and aching which went up the distal aspect of hand up into the elbow region. She had a sore elbow. recommended an EMG/NCV study.

On December 12, 1994, reviewed the EMG/NCV study that showed only cubital tunnel syndrome. He performed an injection into the cubital tunnel on the right side.

1995: On January 18, 1995, electromyographic studies were consistent with cubital tunnel syndrome, bilateral chronic and moderately severe. The ulnar nerve compromise at the elbow clearly predominated on the left. There were motor abnormalities of a significantly chronic nature, preponderantly in the form of increased polyphasicity in the absence of frank denervation present in the ulnar wrist flexor and present in the ulnar wrist flexor and hand intrinsics bilaterally, more prominent on the left than on the right. Nerve conduction studies corroborated ulnar nerve compromise at the elbow bilaterally, more prominent on the left than on the right with slowing of both ulnar motor and sensory conduction velocities together with temporal dispersion and diminution in amplitude of the ulnar motor and sensory evoked responses on stimulation proximally and distally.

On January 20, 1995, reviewed the EMG/NCV studies that showed cubital tunnel syndrome and recommended an anterior submuscular transposition of the ulnar nerve at the elbow.

On February 3, 1995, evaluated the patient for nine days postop anterior submuscular transposition of the ulnar nerve at the elbow. He recommended starting therapy.

On February 20, 1995, and March 15, 1995, evaluated the patient and noted there was an excellent scar formation. He recommended desensitizing the scar with cortisone cream and starting therapy and working on strengthening.

On April 11, 1995, noted the patient had no tenderness along the flexor tendon sheaths of the fingers. She was slowly getting some strength back in the hand. He recommended an injection into the flexor carpi ulnaris.

On May 9, 1995, evaluated her for ongoing evidence of some tendinitis. noted the patient was complaining of sunburn-type feeling in the top of the hand. felt that it was probably due to the terminal branch of the ulnar nerve and it would get better with time.

POST-INJURY RECORDS

1998: Per a record dated January 23, 1998, the patient had advised on xx-xx-xx, that she was having pain in her hand and she thought that she might have CTS.

On January 29, 1998, noted the patient was three years postop anterior subcutaneous transposition of the ulnar nerve of the elbow. She complained of pain around the thenar area bilaterally left worse than right and it had been going on and off since the August for the past five-to-six months. On a regular basis though the patient had pain around the thenar area, she pointed to the carpometacarpal (CMC) joint. Examination of the wrist showed positive Tinel's at the median nerve on the left side but not on the right side. felt that the patient's problem was probably carpal tunnel undoubtedly on the left side. He prescribed Naprelan and recommended starting therapy that should include stretching and strengthening exercises. He gave her a splint to wear and prescribed Naprelan and vitamin B6.

From February 10, 1998, through March 2, 1998, the patient attended three sessions of physical therapy (PT) consisting of cold/hot packs, therapeutic procedures and therapeutic activities.

On March 17, 1998, noted the patient was doing better with cutting back on repetitive use and with exercises. She still had symptoms into the thumb and had positive Tinel's along median nerve at the wrist and decreased sensation to light touch previously. recommended an injection into the carpal tunnel.

On June 11, 1998, noted the patient had some improvement for a short period of time. She was still having the same problems. occluded the patient's radial artery without occluding her ulnar artery and the patient got a swollen sensation perhaps in the hand, not so much pain and not so much throbbing. prescribed Procardia XL-30 and quinidine sulfate.

On August 26, 1998, noted the patient was having pain along the radial aspect of the thumb. He recommended obtaining a repeat EMG/NCV study and injecting the flexor carpi radialis. He felt that even if it was flexor carpi radialis tendinitis that did not mean that it should not be covered by Worker's Compensation.

On September 16, 1998, EMG/NCV studies showed: (1) Resolution of the cubital tunnel syndrome on the left. (2) Bilateral chronic and moderately severe CTS. (3) Chronic and moderately severe persistent cubital tunnel syndrome on the right.

On September 17, 1998, reviewed the EMG/NCV studies and injected the flexor carpi radialis tendon sheath.

On September 21, 1998, performed a peer review and rendered the following opinions: (1) There was no documentation to support that a diagnosis of CTS existed prior to the hire date of July 1, 1994. (2) There was no documentation that indicated when the patient first became aware of a work related CTS. (3) Any symptoms related to the shoulders, the neck, and the upper extremities were most likely due to the cervical condition that was diagnosed in 1992. A cervical arthrodesis was performed on that condition in 1992. The initial upper extremity problems involved the only cubital tunnel syndrome with no documentation of any

CTS involvement. Even in the later years there was no documentation of any abnormal electrical test or clinical examination objective test that would confirm and support a diagnosis of carpal tunnel involvement.

On November 16, 1998, the patient reported improvement in her thumb for past six weeks but began after having a strenuous week. She was having tenderness along the base of the intrinsics. There was some element probably of flexor pollicis brevis tendinitis at its origin. injected that and prescribed Vicoprofen for pain.

On December 18, 1998, opined as follows: (1) The work restrictions included minimizing repetitive use of hands, working with the wrist in a flexed position and working with vibrating tools. The patient was last seen on November 16, 1998, when she was given an injection of the thenar intrinsic. The current treatment plan included trying to teach the patient to minimize repetitive use of her hand and pace herself and maximize the amount she was able to do. There were attempts made to avoid surgery if at all possible. However, if symptoms would progress then a surgery would be required and then the patient would not be able to return to repetitive use. It was always recommended that the patient should minimize the repetitive use of hands, working with wrist in a flexed position and working with vibrating tools.

1999: On January 11, 1999, noted that the last injection did not give the patient any benefit. He performed an injection into the CMC joint, prescribed Vicoprofen and gave the patient a CMC splint.

On March 8, 1999, performed an injection into the carpal tunnel. He noted that the previously performed injection into the CMC joint was without any benefit.

On March 15, 1999, performed a required medical evaluation (RME) and rendered the following opinions: (1) The patient had not yet reached maximum medical improvement (MMI). (2) The patient would probably require repeat injections of lidocaine and Celestone into either the left carpal tunnel or around the tendons of the left wrist to relieve the pain. If the patient could not limit the use of her hand and wrist in work and activities of daily livings (ADLs) and if the present conservative continued over the next month or two then a surgical release of the median nerve compression in the left carpal tunnel should be done. (3) The patient had bilateral CTS related to overuse of her hands at work.

On May 13, 1999 felt that there were indications that the patient had mainly a carpal tunnel which was bothering her. recommended surgery in August with the idea of getting the patient to MMI by the date of her statutory which was January 2000.

On June 3, 1999, noted that the patient symptoms had progressed. He scheduled a carpal tunnel release in August 1999 in getting the patient to MMI before the statutory MMI.

On June 12, 1999, and September 7, 1999, recommended a carpal tunnel release.

On September 8, 1999, performed left hand release of the carpal tunnel, release of Guyon's canal and decompression of the motor branch of nerve around hook of hamate and into palm through adductor and first dorsal interosseous.

On September 13, 1999, noted that wound looked good after removing the dressing. He referred the patient to therapy for ROM, stretching and strengthening exercises.

From September 13, 1999, through December 30, 1999, the patient attended 11 sessions of therapy, consisting of therapeutic procedures, therapeutic activities, isometrics and hot packs. The patient was given supplies of Gel Shell Splint and hand gripper.

Per therapy note dated November 18, 1999, the patient reported increased discomfort at her CMC joint with some crepitation. It was noted that this had been injected on January 11, 1999, with excellent results, decreasing her pain.

On December 15, 1999, noted the patient continued to have some discomfort in her hand in general. She was utilizing Celebrex. recommended trial of Lodine and gave two weeks supply of Arthrotec. The patient was to follow-up in two weeks for cast removal and mobilization and desensitization.

Per utilization review dated January 10, 2000, the request for outpatient PT was denied.

On February 3, 2000, noted that the patient had reached statutory maximum medical improvement (MMI). X-rays of the wrist showed well-seated CMC joint and no advanced arthritic changes. It was noted that the patient had been injected about twice there. provided the patient with some Celebrex.

On February 4, 2000, assigned 7% whole person impairment (WPI) rating. His revised narrative report indicated 12% WPI rating.

On May 17, 2000, performed a designated doctor evaluation (DDE) and assessed MMI as of January 18, 2000, with 4% WPI rating.

On October 2, 2000, the patient presented to have something stated about her ability to work.

2001: No records are available.

On July 25, 2002, noted that as long as she held her hours down she did fine. He recommended keeping her on this regimen as she seemed to be working okay

with that regimen. He provided some Celebrex and a wrist brace for the thumb as it helped her.

2003: No records are available.

2004: On November 10, 2004, the patient reported having little increased symptoms in the thumb, median nerve area. She had a little tenderness along the radial digital nerve of the thumb. recommended monitoring and keeping the patient at the same level of restrictions.

On November 10, 2005, noted that the patient had a flare-up. He recommended bilateral carpal tunnel injections that were approved.

2006 – 2007: No records are available.

2008: On June 2, 2008, noted the patient was having recurrence of her carpal tunnel. He had not seen the patient since 2005. The patient had a flare up again of the carpal tunnel. She had a positive Tinel's along the median nerve at the wrist and the Phalen's test given increased coldness in her thumb. recommended bilateral carpal tunnel injections and referred the patient.

On June 20, 2008, administered bilateral carpal tunnel injections and referred the patient.

2009: No records are available.

2010 – 2011: On May 4, 2010, noted the patient was having a flare-up. The patient was to have a cortisone injection into her carpal tunnels on both sides. She had pain in the carpal tunnel area down into her thumb and her fingers and her thumb would get cold. She had good results in the past with injections. recommended bilateral carpal tunnel injections.

On May 26, 2010, noted the patient had evidence of recurrent carpal tunnel. He prescribed Norco and recommended re-injecting the carpal tunnels.

On September 26, 2011, noted that the patient was doing well but had her ups and downs. recommended bilateral carpal tunnel injections.

Per utilization review dated October 10, 2011, the request for outpatient bilateral carpal tunnel injections was denied.

On October 21, 2011, noted that the injection was denied. The evaluator had recommended conservative treatment as much as possible. The patient was having pain in the median nerve distribution on both sides particularly into the thumb and numbness in the thumb on both sides. She had improvement from the cortisone injections. In addition, on the right side, she had a positive Tinel's along the median nerve at the wrist on both sides. In the Phalen's position, she had

increased pain and numbness and her hands would get cold. The patient presented with classic symptoms of carpal tunnel which had improved in the past with cortisone injections for a prolonged period of time. She was given intermittent carpal tunnel injections every couple of years to settle it back down again. She had done well with this. recommended appealing a cortisone injection.

On November 15, 2011, administered injection of Hydeltra, Kenalog and Xylocaine in the bilateral carpal tunnels. He recommended follow-up as needed.

2012: On October 18, 2012, performed a peer review and rendered the following opinions: (1) The documentation did not support that the current symptoms and physical findings were causally related to the work injury. The patient was placed at MMI on January 18, 2000, and did not seek medical attention for the alleged occupational injury for five years. Clinic note dated November 10, 2005, did not establish the diagnosis of CTS per evidence-based guidelines. One could state with a degree of medical probability the patient's bilateral CTS and the current signs and physical findings were not causally related to the alleged work injury. (2) The treatment including office visits, diagnostic tests, referrals, medications, procedures and surgery, etc. did not follow evidence-based guidelines. The documentation did not establish the medical necessity for the procedure of left CTS with compression, distal branch, ulnar nerve in palm, release, carpal tunnel, release, Guyon's canal and decompression of motor branch of nerve around hook of hamate and into palm through adductor and first dorsal interosseous performed on September 8, 1999, per the ODG. The treatment was no longer reasonable and necessary since September 8, 1999, to treat the alleged work injury. However, if the CTS and surgery were accepted as causally related to the work injury, then treatment was no longer reasonable and necessary after the patient was placed at MMI on January 18, 2000. (3) The evidence-based treatment plan that should be used for the work injury depends on the severity of the CTS. The documentation indicated the patient had mild CTS. The future treatment should include two to three office visits to monitor the progress and compliance with her home exercise program (HEP). No further prescription medication was medically necessary for the work injury. ODG would support bilateral wrist x-rays, over-the-counter (OTC) nonsteroidal anti-inflammatory drugs (NSAIDs) and one to three PT visits. No further procedures or surgery would be medically necessary for the work injury. No further durable medical equipment (DME) or injections were supported. Repeat injections were only recommended if there was evidence that the patient, who had responded to a first injection, was unable to undertake a more definitive surgical procedure at that time.

2013: On February 14, 2013, rendered the following opinions: (1) The documentation supported that the current symptoms and physical findings were causally related to the work injury. But it was aggravated by doing repetitious activities, so, dating back some more than fifteen years, the patient had had carpal tunnel and it had been aggravated by repetitive use as to say, she had only had one injury to begin with and that was what was continuing to give her

symptoms, that was a little harder to say, but she did have persistent symptoms and it had required injections over the ensuing years. (2) The treatment of office visits, diagnostic tests, referrals, medications, procedures and surgery, etc. was consistent with the literature. (3) There was no evidence-based treatment plan. However, conservative treatment with cortisone injections, splints as needed, watching activities, stretching exercises were the best way to go and if the patient had an occasional flare-up, to treat that flare up rather than doing repeat surgeries because one could go back and do a repeat surgery with a hypothenar flap, one could go back and do a carpal tunnel release; however, the problem was scarring was added and it did not completely cure the problem.

On March 22, 2013, responded to question #1, stating that based on evidence-based discussion, one could state with a degree of medical probability that the patient's CTS was not causally related to the alleged work injury and the alleged work injury did not aggravate the patient's CTS. With regards answer to question #2, the treatment of office visits, diagnostic tests, referrals, medications, procedures, surgery, etc. did follow evidence-based guidelines; however, all of the treatment would not be causally related to the alleged occupational injury of excessive typing according to evidence-based medicine. With regards answer to question #3, the evidence-based treatment plan he outlined for the future would be supported by evidence-based medicine; however, this treatment would not be causally related to the alleged occupational injury.

ANALYSIS AND EXPLANATION OF THE DECISION INCLUDE CLINICAL BASIS, FINDINGS, AND CONCLUSIONS USED TO SUPPORT THE DECISION:

The requested services are office visits with cortisone injections. It appears that the previous denial was based on causal relationship and not on whether the request was medically reasonable or necessary.

Based on the medical records submitted and current EBM literature, I concur that the patient's chronic recurrent CTS is not causally related to or aggravated by the patient's work activities/alleged occupational injury. Regarding causation (determination), the ODG Carpal Tunnel Syndrome Chapter states that some controversy continues about whether computer work is a risk factor for CTS, with current opinion that the keyboard is low risk and that the mouse may be mild risk. There is some evidence to conclude that CTS symptoms are associated with workplace activities, but current studies have not proven a causal relationship. In the AMA Guides to the Evaluation of Disease and Injury Causation, the carpal tunnel section indicates that keyboard activities, awkward postures and length of employment provide insufficient evidence for an occupational risk factor for CTS. Per the EBM literature, computer use does not increase the risk of developing CTS. Until recently, the two most referenced studies are the Mayo Clinic study (Stevens, Neurology, 2001, 56:1568-70) and the Danish study (Andersen, JAMA, 2003, 289:2963-69). The Canadian study (Watts, Can J Plastic Surgery, 2003, 11:199-201) concluded that "an extensive literature review revealed that there is minimal to no evidence to support the view that CTS should be a compensated

claim.” They found that many of the decisions to cover CTS as a Workers’ Comp claim were not evidence based. A recent study, indicated as the Swedish study (Atroshi, Arthritis and Rheumatism, 2007, 56:3620-25), concludes that intensive keyboard use at the workplace is associated with a lower risk of CTS. The newest study (Lozano-Calderon, JHS, April 2008, 33-A: 525-538) evaluated 117 English language published articles from the National Library of Medicine’s PubMed data base regarding the etiology of CTS. This review and analysis of the literature concluded that “the etiology of CTS is largely structural, genetic and biological with environmental and occupational factors, such as repetitive hand use, playing a minor and more debatable role. There is insufficient evidence to implicate hand use of any type, typing in particular, as an important and direct cause of CTS.” At risk occupations for development of CTS include meat processors, fruit packers, aircraft and auto assembly workers and those jobs requiring prolonged vibratory equipment use. There are no studies reported that show an increased risk of CTS by typing or computer use. The current scientific and medical studies seem to verify that there is no increase in CTS among computer users versus the general population. The evidence is inadequate to implicate occupational factors in CTS. This individual’s job duties do not put her at greater risk than the general public for developing this ordinary disease of life. Some of these articles are referenced in the ODG.

However, the requested services are appropriate and medically reasonable for treatment of chronic recurrent bilateral CTS. Regarding injections, the ODG Carpal Tunnel Syndrome Chapter recommends a single injection as an option in conservative treatment. Corticosteroid injections will likely produce significant short-term benefit, but many patients will experience a recurrence of symptoms within several months after injection. Symptomatic relief from a cortisone/anesthetic injection will facilitate the diagnosis, however the benefit from these injections although good is short-lived. Steroid injections and wrist splinting may be effective for relief of CTS symptoms but have a long-term effect in only some patients. A recent clinical trial found that, at 3 months of follow-up, 94.0% of the wrists in the steroid injection group showed improvement; at 6 months 85.5% showed improvement, and at 12 months 69.9% showed improvement. Over the short term, local steroid injection was better than surgical decompression for the symptomatic relief of CTS, but at 1 year, local steroid injection was slightly less effective compared to surgical decompression (but about “as effective”). (Ly-Pen, 2005) This systematic review found that the usefulness of steroid injections as initial treatment for improving CTS symptoms is still supported by the recent literature, but these effects are temporary. (Bernardino, 2011)

Regarding repeat Injections, as noted above, a single injection is recommended. Additional injections are only recommended on a case-to-case basis. Repeat injections are only recommended if there is evidence that a patient who has responded to a first injection is unable to undertake a more definitive surgical procedure at that time. A non-controlled study allowing for evaluation of repeat injections found 17 of 46 patients continued to enjoy satisfactory relief of carpal tunnel symptoms at 18 months of follow-up, but 13 of these 17 patients required

multiple injections. Only 4 patients who had only one injection had adequate symptom control after 18 months. The median interval of pain relief after the first injection was 103 days and the duration of pain relief after repeated injections progressively dropped over the course of the study (range: 96 days to 73 days, with the last duration after 7 injections). (Armstrong, 2004)

Based on my forty two years of combined orthopaedic surgery and hand surgery professional experience, I have seen a number of patients with chronic recurrent CTS who do not desire surgery for one reason or another. I have seen these patients once or twice yearly for CT cortisone injections that subsequently have provided symptomatic relief for six months to one year or more. They realize that the injections provide temporary relief and are not curative. Based on review of this patient's medical records, she has obtained symptomatic relief from injections at one year to greater than 2½ year intervals. As long as there is no clinical intrinsic muscle weakness or atrophy, this is a safe and reasonable treatment program.

The opinions rendered in this case are the opinions of this evaluator. This evaluation has been conducted on the basis of the medical documentation as provided with the assumption that the material is true, complete and correct. If more information becomes available at a later date, then additional service, reports, or reconsideration may be requested. Such information may or may not change the opinions rendered in this evaluation.

This opinion is based on a clinical assessment from the documentation provided. This is a retrospective report, which considers care/services rendered to the date of the report only. As per DWC rule 134.600 as reported in DWC Advisory 98-06, the opinion does not constitute, per se, a recommendation for specific claims or administrative functions to be made or enforced. Furthermore this review has been conducted in accordance with the Texas Labor Code 408.021.

The rationale for the opinions stated in this report is based upon experience as a licensed, board-certified, practicing Orthopaedic Hand Surgeon. Additionally, I have read and thus rely upon numerous texts and thousands of pertinent professional journal articles, none of which should be considered solely authoritative or definitive. The textual basis for the opinions includes, but is not limited to past and current editions, of the following: a) Campbell's Operative Orthopedics, b) Green's Operative Hand Surgery, c) Peimer's Surgery of the Hand and Upper Extremity, d) McKinnon and Dellon's Surgery of the Peripheral Nerve, e) Lister's The Hand, Diagnosis and Indications, f) Morrey's The Elbow and its Disorders, g) Cooney's The Wrist, h) Lichtman's The Wrist, i) Taleisnik's The Wrist, j) Hand Clinics, and k) Hand Surgery Update 4, published by the ASSH. I certify that I have no relationship or affiliation with the beneficiary of this independent review or a significant past or present relationship with the attending provider and/or the treatment facility. I have never met or had any form of contact with the claimant. I further certify that I have no familial or material professional or business relationship or incentive to promote the use of a certain product or

service associated with the review of this case. I have no familial or material professional or business relationship or incentive to promote the use of a competing product or service associated with the review of this case. I further certify that I have no direct or indirect financial incentive for a particular determination or ownership interest in any of the affected parties.

Note to providers for Worker's Compensation cases under the jurisdiction of Texas: Official Disability Guidelines (ODG) and Pressley Reed Medical Disability Advisor disability guidelines are the primary sources used for this review along with other sources of evidence based literature, guidelines and standards, if necessary.

If a peer review results in a denial of care due to matters of liability, causation, compensability, relatedness, extent of injury or other administrative issues, you have the right to request dispute resolution through the Division of Workers Compensation by requesting a BRC, CCH or appeal panel consideration. This should be directed to the insurance carrier.

A DESCRIPTION AND THE SOURCE OF THE SCREENING CRITERIA OR OTHER CLINICAL BASIS USED TO MAKE THE DECISION:

MEDICAL JUDGEMENT, CLINICAL EXPERIENCE, AND EXPERTISE IN ACCORDANCE WITH ACCEPTED MEDICAL STANDARDS

ODG- OFFICIAL DISABILITY GUIDELINES & TREATMENT GUIDELINES

PEER REVIEWED NATIONALLY ACCEPTED MEDICAL LITERATURE

AMA Guides to the Evaluation of Disease and Injury Causation
Stevens, Neurology, 2001, 56:1568-70
Andersen, JAMA, 2003, 289:2963-69
Watts, Can J Plastic Surgery, 2003, 11:199-201
Atroshi, Arthritis and Rheumatism, 2007, 56:3620-25
Lozano-Calderon, JHS, April 2008, 33-A: 525-538

OTHER EVIDENCE BASED, SCIENTIFICALLY VALID, OUTCOME FOCUSED GUIDELINES (PROVIDE A DESCRIPTION)

The textual basis for the opinions includes, but is not limited to past and current editions, of the following: a) Campbell's Operative Orthopedics, b) Green's Operative Hand Surgery, c) Peimer's Surgery of the Hand and Upper Extremity, d) McKinnon and Dellon's Surgery of the Peripheral Nerve, e) Lister's The Hand, Diagnosis and Indications, f) Morrey's The Elbow and its Disorders, g) Cooney's The Wrist, h) Lichtman's The Wrist, i) Taleisnik's The Wrist, j) Hand Clinics, and k) Hand Surgery Update 4, published by the ASSH