

**Complex Regional Pain
Syndrome**

Dawn Cook, RN, Life Care Planner and Legal Nurse
Consultant

Conflict of Interest

Dawn Cook certifies that, to the best of her knowledge, no affiliation or relationship of a financial nature with a commercial interest organization has significantly affected her views on the subject on which she is presenting.

Objectives

- Review specific disease processes and the impact on CRPS on the injured person.
- Discuss causation factors which can lead to litigation in CRPS cases.
- Discuss common therapies for CRPS
- Discover new and novel treatments for CRPS
- Evaluate future medical costs as relates to CRPS.
- List available sources of information on CPRS.

CRPS/RDS

- Complex Regional Pain Syndrome/Reflex Sympathetic Dystrophy, known as CRPS/RSD, is a rare and difficult to treat pain syndrome. Identifying present and future treatment is essential in the management of these patients.

Other names

- Algodystrophy
- Causalgia
- CRPS
- CRPS I
- CRPS II
- Neurodystrophy
- Reflex Sympathetic Dystrophy Syndrome
- RSD
- RSDS
- Shoulder-hand Syndrome
- Sudeck's Atrophy
- Sympathalgia

History of CRPS

- The condition currently known as CRPS was originally described during the American Civil War using the word "causalgia." From the Greek words for heat and pain.
- In the 1940s, the term reflex sympathetic dystrophy (RSD) came into use to describe this condition, based on the theory that sympathetic hyperactivity was involved in the pathophysiology
- In 1959, it was observed that "the damage of the nerve is always partial." With doubts about the underlying pathophysiology, this led to calls for a better name for the condition.
- In 1993, a special task group provided the umbrella term "complex regional pain syndrome", with causalgia and RSD as subtypes

Theories of CRPS

1. Inflammatory (limb is hot, red and swollen)
2. Sympathetically Mediated (limb is cold and bluish)
3. Central sensitization (typical of chronic pain)
4. Auto-Immune (Immune globulin sometimes helps)
5. Limb Ischemia (an inflammatory response)
6. Cortical Reorganization sustains CRPS (MRI studies)
7. Nerve Damage (neuropathic pain syndrome)
8. Neurogenic Inflammation (neuropeptide evidence)

Early Recognition

- Early recognition and treatment are thought to be critical for good outcomes, yet many patients experience a delay in diagnosis and have difficulty accessing expert medical care. While there are no universally effective treatments, there are several promising new therapies, but these are not widely available.

CRPS I & II

- CRPS has two forms:
- CRPS 1 is a chronic nerve disorder that occurs most often in the arms or legs after a minor injury. 90% of the cases.
- CRPS 2 is caused by an injury to the nerve. 10% of the cases.

Causes of CRPS

- Injuries precipitating the development of CRPS, in order of decreasing frequency, are as follows:
- (1) sprain/strain
- (2) surgical wounds
- (3) fractures
- (4) contusion/crush injury
- (5) rarely, other injuries such as venipuncture, lacerations, burns, inflammatory processes, electric shock, and spinal cord injuries.

Less Common Causes

- Spontaneous cases/unknown causes account for approximately 5% of patients and may be explained by minor injuries that have been forgotten.
- Unusual, disputed precipitating events include visceral lesions, CNS lesions (eg, strokes, tumors, brain injury, amyotrophic lateral sclerosis, meningitis, syringomyelia), peripheral vascular bypass procedures, arteriovenous grafts for hemodialysis, carpal tunnel surgery, and spinal cord injury.

Incidence

- More common in women, and can occur at any age, but usually affects people between 40 and 60 years old.
- The National Institute of Neurological Disorders and Strokes reports CRPS in 2% to 5% of peripheral nerve injury patients and 12% to 21% of patients with hemiplegia.
- The Reflex Sympathetic Dystrophy Syndrome Association of America (RSDSA) reports the condition appears after 1% to 2% of bone fractures.

Onset and Location

- Often, symptoms of CRPS type I begin immediately, or days, or weeks after an injury, usually in a distal extremity. Rarely, the onset can be months after the injury.
- Usually, only one limb is involved, but in a few cases, the involvement is bilateral (4-5%), and even more rarely, 3 or 4 extremities are affected. CRPS type I can be acute (lasting < 2 months) or chronic (>2 months). Approximately half of patients with CRPS type I report it to be related to an on-the-job injury.

CRPS

- Duration: As many as 80% of patients with the initial symptoms of CRPS are cured within **18 months** from its onset, either spontaneously or with treatment. A longer duration of CRPS is related to a significantly greater likelihood of abnormalities of sensation and less of sweating abnormalities or edema.

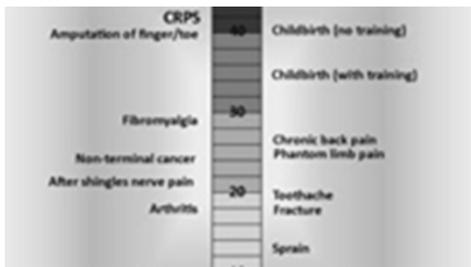
CRPS

- Location: Pain and other symptoms can be located anywhere in the body. The extremities are involved most often, although other locations such as external genitalia or the nose may also be involved. Patients may have pain at the ulnar styloid process after a Colles fracture or at the lateral malleolus after a sprain. Frozen shoulder and/or tendinitis of the biceps often accompany CRPS type I in the hand.

Symptoms of CRPS

- Many patients with CRPS/RSD from an injury may be in litigation. In order to support the diagnosis of pain, it is important for clinicians to document objective findings as well as the patients subjective findings, especially temperature, color and movement/deformity.
- Spontaneous pain: Pain that is not limited to the territory of a single peripheral nerve is the cardinal feature of CRPS. The pain's character can be burning (occurring most often), aching, throbbing, or tingling. The pain is aggravated by activity of the affected extremity, and its severity is typically disproportionate to the inciting event.

McGill Pain Scale



McGill Pain Scale

- The **McGill Pain Questionnaire**, also known as McGill pain index, is a scale of rating pain. It was developed in 1971 at McGill University.
- Descriptive words for pain are used, as well as scoring points and other descriptions, it has a minimum of 0 points and a maximum of 78 points.

McGill Pain Questions

- Group 1 Flickering, Pulsing, Quivering, Throbbing, Beating, Pounding
- Group 2 Jumping, Flashing, Shooting
- Group 3 Pricking, Boring, Drilling, Stabbing
- Group 4 Sharp, Cutting, Lacerating
- Group 5 Pinching, Pressing, Gnawing, Cramping, Crushing

McGill Pain Questions

- Group 6 Tugging, Pulling, Wrenching
- Group 7 Hot, Burning, Scalding, Searing
- Group 8 Tingling, Itchy, Smarting, Stinging
- Group 9 Dull, Sore, Hurting, Aching, Heavy
- Group 10 Tender, Taut (tight), Rasping, Splitting

McGill Pain Questions

- Group 11 Tiring, Exhausting
- Group 12 Sickening, Suffocating
- Group 13 Fearful, Frightful, Terrifying
- Group 14 Punishing, Grueling, Cruel, Vicious, Killing
- Group 15 Wretched, Binding

McGill Questions

- Group 16 Annoying, Troublesome, Miserable, Intense, Unbearable
- Group 17 Spreading, Radiating, Penetrating, Piercing
- Group 18 Tight, Numb, Squeezing, Drawing, Tearing
- Group 19 Cool, Cold, Freezing
- Group 20 Nagging, Nauseating, Agonizing, Dreadful, Torturing

Skin Symptoms

- Altered skin temperature: This is often noted as a difference in skin temperature between affected and unaffected limbs. Altered skin temperature, 40% are warmer, 40% are cooler than other limb.
- Abnormal sweating
- Changes in skin and hair growth, changes in skin color (skin may appear red, dusky, covered with red dots, cyanotic, blotchy, or pale).
- Changes in nails. Thicker, more ridges
- Edema

Other symptoms

- Difficulty/inability in using the affected extremity
- Neglect-like symptoms: These include cognitive neglect, in which the limb may feel foreign, and motor neglect, in which directed mental and visual attention are needed to move the limb.
- Rapid fatigability: This is almost invariably present in the later stages.
- tremors (shakes).
- migraines/cluster headaches.

Psych symptoms

- Irritability.
- Depression, fatigue, and/or insomnia.
- Short-term memory problems, concentration difficulties, and irritability.
- Suicide, especially in children

Symptoms %

- 80-90% of patients have motor difficulties
- 25% have muscle spasms
- 70% have reduced sense of touch
- 70-80% allodynia (pain from touch, breeze, sound, vibration, wind, noise, temperature, barometric pressure changes, water temperature, etc.)
- 70-80 % exaggerated response to pain

Diagnosis

- No specific diagnostic tests identify the presence of CRPS and no objective guidelines verify its existence. The current criteria for diagnosing CRPS are based mainly on physical examinations and a careful analysis of patient history. Physical examination, history including thermography.
- Rule out other conditions with:
 - Nerve Conduction Tests
 - Bone Scans, triple phase bone scan
 - X-rays
 - There may be bone wasting eventually

Duration

- Duration: CRPS may last only a few weeks, or it may go on for years or even indefinitely. It may go into remission for days, weeks or even years.

Budapest Criteria step one

- IASP (International Association for the Study of Pain) approved CRPS diagnostic criteria.
- (1) Continuing pain, which is disproportionate to any inciting event

Budapest Criteria step two

- (2) Must **REPORT** at least 1 symptom in 3 of the 4 following categories
- 1. **Sensory**: reports of hyperesthesia and/or allodynia
- 2. **Vasomotor**: reports of temperature asymmetry and/or skin color changes and/or skin color asymmetry
- 3. **Sudomotor**/edema: reports of edema and/or sweating changes and/or sweating asymmetry
- 4. **Motor/trophic**: reports of decreased range of motion and/or motor dysfunction (weakness, tremor, dystonia) and/or trophic changes (hair, nail, skin)

Budapest Criteria step three

- (3) Must **DISPLAY** at least 1 sign at the time of evaluation in 2 (clinical) or 3 or more (scientific) of the following categories
- Sensory: evidence of hyperalgesia (to pinprick) and/or allodynia (to light touch and/or deep somatic pressure and/or joint movement)
- Vasomotor: evidence of temperature asymmetry and/or skin color changes and/or asymmetry
- Sudomotor/edema: evidence of edema and/or sweating changes and/or sweating asymmetry
- Motor/trophic: evidence of decreased range of motion and/or motor dysfunction (weakness, tremor, dystonia) and/or trophic changes (hair, nail, skin)

Budapest Criteria step four

- (4) There is no other diagnosis that better explains the signs and symptoms

Three Stages, generally

- Stage 1, starts within hours or up to eight weeks (lasts 1 to 3 months):
- Changes in skin temperature, switching between warm or cold
- Faster growth of nails and hair
- Muscle spasms and joint pain
- Severe burning, aching pain that worsens with the slightest touch or breeze
- Skin that slowly becomes blotchy, purple, pale, or red; thin and shiny; swollen; more sweaty

Stage Two

- Stage 2 (lasts 3 to 6 months):
- Continued changes in the skin
- Nails that are cracked and break more easily
- Pain that is becoming worse
- Slower hair growth
- Stiff joints and weak muscles

Stage Three

- Stage 3 (irreversible changes can be seen)
- Limited movement in limb because of tightened muscles and tendons (contracture)
- Pain in the entire limb
- Muscle wasting

Goals of Treatment

- Education
- Functional Restoration
- Reduce pain
- Decrease anxiety

Typical Treatment Protocol

1. Optimize oral and transdermal medications, TENS and mobilizing the limb
2. Series of 3-6 Sympathetic Nerve Blocks, at the same time, PT and psychotherapy
3. Then consider oral narcotic therapy, sympathectomy or spinal cord stimulator.
4. Many, many more therapies are now considered, this is just the basics.

Restoration PT

- Physical Therapy and Occupational Therapist in some cases, overuse is possible
 - Assess and treat with Mirror visual feedback (MVF) or GMI (graded Motor Imagery).
 - Minimize edema, promote normal positioning, decrease muscle guarding and increase functional use of the extremity.
 - Stress-loading program with scrubbing and carrying.
 - ROM, coordination/dexterity and strengthening
 - Increase range of motion, flexibility and later strength
 - GMI
 - Hydrotherapy/aquatherapy
 - Desensitization
 - Pain exposure therapy
 - Massage and myofascial release

Restoration PT/OT

- Active therapy
 - Activities of daily living (ADL)
 - Functional activities
 - Gait training
 - Neuromuscular re-education
 - Therapeutic exercise
 - Work conditioning
 - Work simulation
 - Continuous passive motion (CPM)
 - Paraffin bath

Psychological Factors

- Relaxation training with biofeedback
- Cognitive intervention
- Behavioral intervention
- Family intervention
- Suicide prevention, when needed

Sequential Drug Trials

- In order to determine what works, start one at a time
- Treat in this order:
 - Pain
 - Sleep disorders
 - Inflammatory pain
 - Spontaneous jabs
 - Sympathetically maintained pain
 - Muscle spasms

Common CRPS/RSD meds

- For constant pain with inflammation: NSAIDS
- For constant pain not caused by inflammation: tramadol
- Constant pain or intermittent jabs and sleep disturbances: antidepressants such as amitriptyline, doxepin, nortriptyline, trazodone
- For spontaneous jabs, anticonvulsants: carbamazepine, gabapentin may relieve constant pain as well
- con't

Common CRPS/RSD meds

- Opioids: For constant widespread pain resistant to other therapies: propoxyphene, hydrocodone and acetaminophen drugs, acetaminophen and oxycodone Percocet, morphine, codeine
- For sympathetically maintained pain: clonidine patch
- For muscle cramps: clonazepam, baclofen
- For localized pain related to nerve injury: capsaicin cream

Sympathetic Block

- Purpose: might provide a permanent cure or partial remission, may be diagnostic, may help guide future treatments.
- Sympathetic nerve block, upper extremity is a stellate ganglion block (SGB), lower extremity is a lumbar sympathetic block (LSB)
- Usually about one week apart, 3-6 times
- If there is a significant relief of pain with a sympathetic block, the patient is said to have sympathetically maintained pain. A sympathectomy may be very beneficial.
- If not, they have sympathetically independent pain.

Spinal Cord Stimulator

- Spinal Cord Stimulator:
- Works by a low level electrical impulse on the spinal nerve.
- Trial of 7-10 days, goal a 40-70% decrease in pain
- Reserved for the worst patients due to the cost and risks
- Permanently implanted on spine, battery replacement every 3 - 10 years, depending on product and use. New rechargeable.

Not Recommended

- Amputation, used more commonly in the past, there is more interest in this approach, lately.
- Ice and heat don't work
- Morphine pump, doesn't work any better than oral morphine

New and Novel Treatments

- Low Dose Naltrexone, FDA-approved naltrexone (used for preventing narcotic and alcohol addiction at higher doses), in a off-label, low dose. Works by reversing neuropathic pain. Research is starting to CRPS at Stanford University with a placebo-controlled, double blind, cross-over trial of LDN. Needs a compounding pharmacy, costs about \$38 per month.(see June 2014 newsletter RSDSA)
- As of July 2015, this is a phase III clinical trial.

New and Novel Treatments

- Bisphosphonates (anti-osteoporosis drugs) Neridronate (American RSD Hope announcement) NCBI results. Rheumatology Magazine Oxford Journals 2012, in 82 radomized CRPS-1 patients were given 100mg of IV Neridronate four times over 10 days, and half were given a placebo. After 50 days, the placebo patients were given the Neridronate regime. After one year, none of the test subjects had any symptoms of CRPS-1. Grunenthal USA, Inc.applied in 2013 for FDA approval for the use of Neridronate for CRPS, approval is expected this fall.

New and Novel Treatments

- Marijuana, seems effective for the worst symptoms of CRPS
- The American Pain Society published a paper February 2013 reporting a double blind, placebo controlled crossover study for the use of vaporized marijuana in persons with neurological pain despite conventional treatment. The findings are that even the lowest dose made a significant decrease in pain, allowing people to be more functional while enjoying decreased pain.

New and Novel Treatments

- Repetitive Trans Cranial Magnetic Stimulation is reported in the Journal for Clinical Neurophysiology in 2014.
- The article compared this treatment to other treatments for pain and other neurological conditions.

New and Novel Treatments

- Hyperbaric oxygen therapy about \$120-\$300 per session, need lots of treatment, hit a wall around 15 to 20 treatments. Several studies have investigated the use of hyperbaric oxygen therapy for chronic pain. Individuals lie down in a tank containing pressurized air, which delivers more oxygen to the body's organs and tissues. Although research is still experimental, some researchers report hyperbaric oxygen can reduce swelling and pain, and improve range of motion in individuals with CRPS.

New and Novel Treatments

- Ketamine is a dissociative anesthetic and NMDA receptor antagonist.
- Investigators are using low doses of ketamine—a strong anesthetic—given intravenously for several days to either reduce substantially or eliminate the chronic pain of CRPS. In certain clinical settings, ketamine has been shown to be useful in treating pain that does not respond well to other treatments.

New and Novel Treatments

- Scrambler/Calmare
- A Federal judge has ruled that the device works against chronic pain and should be covered under Medicare. The Calmare device uses electricity to block pain signals without the use of drugs. A typical session on a Scrambler lasts 30 to 45 minutes, with the device sending low doses of electricity through electrodes placed on the skin of painful areas. The device “scrambles” or re-boots nerves left frayed and sensitized by chronic pain.

Calmare

- Studies by a Johns Hopkins researcher have found that Calmare therapy works for most neuropathic pain patients, with the average pain score falling by 95 percent within one month. Relief continued for several months after Scrambler therapy ended.

Continuous Epidural Anesthesia

- The Japanese Society of Child Neurology reported in 2014 of a child with symptoms of CRPS for five days after a fall. She was treated with five days of continuous epidural anesthesia with complete resolution of her CRPS symptoms.

- http://www.thblack.com/links/RSD/Brain&Devel2015_37_175_CRPS-Resolution-Pediatric.pdf

Dorsal Root Ganglion Stimulation

- There several articles about the success of dorsal root ganglion stimulation, especially in areas of the lower extremities that Spinal Cord Stimulators have difficulty treating. Pain scores were significantly decreased after a few months. A stimulator is implanted in the lower back.

Burst Spinal Cord Stimulation

- "Burst SCS" is a new variant on conventional ("tonic") SCS, in which closely-spaced, high-energy pulses of energy replace the lower frequency (energy) stimulation normally used.
- It is more effective than the tonic variety and even works on patients for whom SCS has stopped giving satisfactory pain relief.

New and Novel Treatments

- Acupuncture has been helpful for some people.
- DMSO (dimethylsulfoxide) 50% cream
- Botox for reducing muscle spasm

New and Novel Treatments

- IVIG (if it is an autoimmune disease, neuro-inflammatory, new research) *Intravenous immunoglobulin*. Researchers in Great Britain reported that low-dose IVIG reduced pain intensity in a small trial of 13 patients with CRPS for 6 to 30 months who did not respond well to other treatments. Those who received IVIG had a greater decrease in pain scores than those receiving saline during the following 14 days after infusion. A larger study involving individuals with acute-phase CRPS is planned.

Royal College of Physicians 2012

- **Other Experimental Treatments for CRPS:**
- Brachial plexus analgesics
- Local anesthetic infusion with physiotherapy
- Electroconvulsive therapy (ECT)
- Oral phenoxbenzamine (for its antiadrenergic effects ,especially in first 3 month of the CRPS dx.)
- zincnotide, narcotic from cone snails

Royal College of Physicians 2012 con't

- Ketamine coma
- Ketamine infusion combined with nerve block
- Ketamine oral
- Nerve compression
- Memantine (used in Alzheimer's)
- Motor cortex stimulation
- Tactile discrimination
- Topical lidocaine
- Lycra pressure garments

New in August 2015

- Journal of Clinical Investigation: stem cells injected into spinal cord of mice, reduced neuropathic pain
- Pain Physician Journal: plasma exchange (PE) therapy may be helpful, unknown why it helps
- Neuron Journal, Boston Children's Hospital target protein that enhances pain and inflammation
- White House lifts restrictions on marijuana research
- UC Davis, researching endoplasmic reticulum stress and neuropathic pain, may lead to new therapies

Medical Team

- Routine Team Approach to treat the patient; combining an Pain Management physician, a Psychologist, Psychiatrist and a Neurologist, with maybe a GP or a Rheumatologist.

Therapy Team

- pain support groups
- pain management program
- OT/PT
- psychological
- Scrambler therapy, hyperbaric therapy, medication therapy etc.

Home Equipment

- Wheelchair**, accessories and maintenance
- Aids for Independent function** ie reachers
- Orthotics/prosthetics**, functional splints, lycra garments
- Supplies**
- Durable Medical Equipment**, like TENs, bathroom assists, dressing aids,

Care Plan

- Home or facility care**
- Transportation**, if wheelchair
- Health and strength maintenance** i.e. universal gym and stationary bike, once at \$500 to \$1500
- Architectural renovation**, If wheelchair bound
- Educational plan**

Screening for Legal Merit

- Medical Records, pre-incident and post incident.
- Bills
- Is there a real diagnosis that is well supported?
- Was a diagnosis made in a timely manner?
- Was treatment started in a timely manner?
- Was there a personal injury or products liability?

Burden of Proof, Injury

- The experience and expertise of the defendant—typically that they are a practicing doctor or other medical professional
- • Comparative or sole responsibility in cases where the injury was caused by more than one party
- • Whether or not the plaintiff's injuries were directly caused by the defendant's actions
- • How and where the accident occurred

Burden of Proof, Med Mal

- proving that the plaintiff's injury was caused by negligence or medical malpractice, as opposed to unavoidable complications.
- comparison to other medical professionals of similar specialization, qualification, and experience.
- must prove that the incidence in question would not have resulted in the development of CRPS if performed by similarly qualified medical professionals.

Defense

- Signs and symptoms were not consistent with CRPS
- Medical provider did not have the knowledge to make that diagnosis
- The injury was not related to the CRPS
- The injury was not liable
- The product did not cause the CRPS
- Patient is malingering

Case Study #1, Jeffery

- Jeffery was 14 years old when he was bullied and broke his right forearm.
- Casted and healed. Developed increased pain after the cast was removed.
- Pain increased and his primary care providers recommended to see a pain specialist
- Jeffery and his parents spent almost a year finding a pain specialist who would see a teenager.

Jeffery

- When I met Jeffery, his pain had spread to both hands and arms. He had a spinal cord stimulator that he said brought his pain from a 10/10 to a 4/10. However, he found it very difficult to hold things in his hands. Housework, writing, even keyboarding is painful. He is finding it difficult to drive to college.
- He plans to become a lawyer and help others.

Jeffrey

- His medical team recommended spinal cord stimulator battery to be replaced every 8-10 years
- Physical Therapy, twice a year to review his home exercise program
- Psychologist for pain management
- Medications: gabapentin (Neurontin) and paroxetine (Paxil)
- I recommended hands free driving, housekeepers, Dragon Speaking and other hand free devices for his use.

Case Study #2, Judy

- Judy was walking at work when she twisted her ankle and had ankle surgery. After surgery she had increased pain and was diagnosed with CRPS. It later spread to her other lower leg.
- Multiple sympathetic blocks, oral pain killers, depression and difficulty concentrating.
- She has pain when her clothes brush her skin.

Judy

- Current care: blocks 5-10 per year, topical creams, medication for pain, inflammation, depression and sleep. She gets housekeepers for housework, meal preparation and shopping. She has various splints, braces, special shoes, canes and wheelchairs.
- Her physicians are planning: neurolysis of peroneal nerve, neuroectomy of peroneal nerve and spinal cord stimulator.

Case Study #3, Jim

- Jim is a just-retired man who experienced numbness in his hands. He had carpal tunnel surgery, first on the right wrist and then on the left wrist.
- The left wrist had more pain after surgery and a revision surgery was done a few weeks later, but his surgeon concludes that he developed CRPS due to nerve injury. Jim was reluctant to continue to see a pain management provider when that physician wanted him to sign a narcotic agreement. He sees only his PCP who simply orders Percocet. I recommended that he start with pain management and explore all the many things that could help with his pain and poor function.

Case Study #4, Veronica

- Veronica developed CRPS in her hand after a painful and difficult IV start. Her pain was almost immediate. At 30 years of age, she has become very disabled as the CRPS has spread first to her other hand, and now to both legs.
- Her pain management specialist is giving her continuous lidocaine infusions for five days, every three months. She is just starting to get ketamine daily infusions for five days, every three months. Her doctor would like to send her to Europe for ketamine coma

Veronica

- Veronica sees her pain specialist every month
- Medications: doxepan, baclofen, oxycodone 20 mg three times a day.
- Physical therapy three times a week. Psychological treatment for pain and for family counseling
- CBC, renal panel and LFT every three months, periodic drug testing
- She needs help at home for cooking, cleaning, shopping, yard maintenance, child care when hospitalized for treatments. As she ages, she will likely need help with personal care.

Veronica

- Veronica needs canes, wheelchairs/scooters, modifications to her home
- Voice activated keyboard, ipad holder
- Aids in the kitchen to assist with jar opening, large handled utensils
- Her care is very expensive.

Legal Nurse

- Screen case for merit, include research
- Recommend Expert Witness, pain management or neurologist with knowledge and experience diagnosing and treating CRPS.
- They all have future medical needs, so they will need a Life Care Planning Expert Witness.
- Vocational Rehab evaluation as CRPS likely effects their ability to work.

Demonstrative Evidence

- Timelines
- Pain Scales
- Patient's pain diaries
- Photos of limbs
- Day in the life videos

Resources

- Life Care Planning and Case Management textbook
- Best Doctor's Occupational Health Institute
- NIH.org
- American Chronic Pain Association, Pain Guide, 2012 Edition
- <http://www.theacpa.org>
- Clinical Practice Guidelines for RSD/CRPS. International Research Foundation for RSD/CRPS

Resources

- <http://www.rsds.org/pdfsall/CRPS-guidelines-4th-ed-2013-PM.pdf>
- Reflex Sympathetic Dystrophy: A Reappraisal. Dr. Wilfrid Janig and Michael Stanton-Hicks, Editors
- <http://www.rsdhope.org>
- <http://www.rsds.org>
- <http://www.thblack.com>

Resources

- US Department of Health and Human Resources
- Journal of Bone and Joint Surgery 2014
- Journal of Pain, 2014
- American Chronic Pain Association, ACPA Resource Guide

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