

# THE LNC NEWSLETTER

PRESENTED BY:

## Medical-Legal Interface

### Spinal Cord Injuries 101

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It is estimated that approximately 450,000 people in the US live with spinal cord injuries. There are about 10,000 new spinal cord injuries per year, with the majority of them being males, approximately 82%, between the ages of 16 and 30. 36% are from motor vehicle accidents, 28.9% from violence and 21.2% from falls. Quadriplegia (tetraplegia) is slightly more common than paraplegia.

Simply put, a spinal cord injury is damage to the spinal cord that results in loss of function or sensation. These injuries are usually caused by either trauma such as a motor vehicle accident, fall or gun shot wound or by a disease process such as polio or spina bifida. More often than not, the actual spinal cord is not severed in these injuries. Usually it is an injury to the vertebrae covering the spinal column, and

if it can be properly fixed, the person will suffer no further problems or at least greatly diminished problems in the area.

The spinal cord carries messages to and from the brain for function. In complete injuries to the spinal cord, the area of and below the injury can no longer “communicate” at all to the brain, and thus can no longer function at all—they also have no function below the complete spinal cord injury. Both sides of the body are affected equally. With an incomplete spinal cord injury, the person has some functioning below the injury. The person may be able to move one limb more than the other, feel parts of the body that cannot be moved, or may have more functioning on one side than the other.

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### Let's Hear It for the Team

Robert Morrison, RN BSN

As an attorney, you have to balance a lot of tasks. Your client expects that you will handle all of the tasks involved in determining their claim, preparing their case, and carrying it through. To balance all of these requirements a law office needs the strengths and skills of many different people. Legal Assistants, Secretaries, Paralegals, and Legal Nurse Consultants are some of the necessary roles in the legal office. While similar in many respects, their roles are all different, and all provide invaluable service.

One way to view the difference between these roles is to look at it with the perspective of the medical office. A physician uses many types of professionals to support their practice: physician assistants, nurse practitioners, nurses, medical assistants, medical receptionists, and billing/coding specialists. Each of these people has a particular set of skills to bring to the operation, and the physician depends on this to gather all of the pertinent information, determine the best course of action, and follow through with the plan of care. A nurse can function as a billing specialist to a limited degree, and vice versa, but they would be limited in their ability to provide the practice with all of the needed work.

The same holds true for the legal office. Too often, the LNC is seen as a duplicate of, and replacement for, the Paralegal or Legal Assistant. In fact, both of these people

are needed. The nurse brings a strong understanding of healthcare and medicine. They are accustomed to reading and gathering medical histories, assessing the information, and providing an accurate report of the health status of the client. The legal assistant and the attorney are experts in the areas of legal protocol and procedure. They are the ones who need to take the medical information, interpret the law as it applies to that information, and determine the best course of action. The nurse is an expert in healthcare delivery; the legal assistant is an expert in the law and its machinations.

We usually ask the prospective attorney client to look at their office this way. First, how much is an hour of your time (or your assistant's) worth? Second, what is the best use of that time, reading and interpreting the medical information or acting on it? You need to know what to file, when, where, and with whom. Is the claim worth accepting? What court has jurisdiction over the case? What are the deadlines? What must be included in the court filings? These are all important questions, and require a specialized and extensive knowledge base. Putting that knowledge and experience to work reading and researching medical information means that the above activities are put on hold.

Another question for the attorney- when you have an opening for a Legal Assistant or Paralegal, Cont on P 4

## MORE ON EXPERT WITNESSES

As issues grow more and more complex, we are seeing an increasing use of expert witnesses with credentials in still more specialties. Psychiatrists and psychologists, for instance, are being used more frequently to determine the extent of emotional damage for which awards are sought in civil trials.

More and more, lawyers are calling in experts to testify about final issues which formerly might strictly have been left up to a jury. There was a time when there were objections to such testimony, but now it is clear that experts can be expected to testify on ultimate issues.

Many of the abuses which occurred prior to legislative revisions in the discovery law have been eliminated. It is now mandatory that when one party requests an exchange of experts, every party must join in. Litigants must disclose in the exchange which experts they have contacted and in which specific areas they will testify. Attorneys are also required to ensure that the experts will testify and that they will be ready at the time of deposition. Sandbagging beyond the allotted time to disclose experts may now preclude an attorney from using them.

Meantime, the courts continue to chip away at the attorney work product privilege and attorney-client privilege with

We all are familiar with the name Viagra and the properties of this drug. In addition, it is not only in our country but I believe anywhere in the world, the name Viagra is known and a good number of these people have a somewhat off-colored joke to go along with the very mention of the word.

If one were to believe the many advertisements, one would assume it has made many a woman happy and well, should we say, her male partner ecstatic. Additionally one is lead to believe the drug is a relationship or marriage lifesaver.

This drug is now proving to be a lifesaver for the neonate. Yes, you read correctly—I did say the neonate. In the case of the neonate, the drug is a lifesaver but not for relationships but literally saving the infants life. No, of course it is not

respect to experts. Both the attorney and the expert need to be conscious of that.

Remember that experts shouldn't simply be told to analyze something. To be most effective, they should know the issues and how counsel plans to use their reports. Those experts who are able to communicate effectively can be invaluable. They should be qualified carefully, used early and prepared with painstaking care. For in the final analysis, what the expert has to say is more important than what the lawyer has to say.

Experts can get things into evidence that would be otherwise inadmissible, from visual aids to projections and treatises. Visual aids, maps, diagrams, charts, photos, models and videos are also helpful in simplifying complex issues for the jurors.

Sometimes an expert may give an opinion that is based on hearsay. All kinds of records, facts and data may be relied on by an expert in forming an opinion, including the expert's experience, so long as the reliance is reasonable, but an expert may base his opinion only on reliable information.

During trial there is no question that the expert will be attacked relentlessly. He or she may be the most important witness. Anticipating this, try to get everything out on direct examination.

In qualifying your expert before the jury, avoid a long procedure that makes the expert seem self-important and bores the jurors. Focus on what your expert has to say rather than past performance. Passing out copies of his or her resume to the jurors and mentioning a few of the important points can save time.

Should an expert crumble on the stand, it doesn't pay to be melodramatic or to pick on that witness. The jury won't like it. Having your expert sit at your table during cross-examination of the other side's witness is discouraged. Seating your expert in the audience throughout the trial, however, could gain a few points.

In preparing your experts for trial, tell them to be polite, respectful and to communicate: to tell a story as would a salesman. It is also wise that the experts' message be delivered in more simple language than they or you would ever believe necessary.

Sometimes the law requires the use of experts; sometimes you may decide to use experts to increase the credibility of your case. In selecting experts, you will notice that in many instances, there are no clear-cut, absolute, right or wrong answers, but rather choices to be made that should be based on a careful consideration of the pros and cons.

## Viagra

Jan Aken RN IBCLC LNC

given to correct what seems now to be an omnipresent problem in males called erectile dysfunction or ED as Bob Dole states in his Viagra commercial.

Let me back and give a bit of history about how this drug came to be used for anything other than ED. It appears that the first time the drug was used for another condition was in India. A doctor in India gave the anti-impotence drug Sildenafil to three newborn babies with pulmonary hypertension. Naturally, when word of this treatment was leaked to the press this caused a big controversy over the unauthorized use of the drug.

The first time the drug was given for pulmonary hypertension in the world was when it was given to these three newborns in India. These Indian babies were given Sildenafil orally. The unorthodox

treatment took place at a Medical Sciences and Research Centre. Standard intensive treatment had failed, and Sildenafil was given in a situation described as "life threatening" by the hospital spokesman. The doctor said, "There were children dying in my presence, and I was expected as a responsible physician to use all available methods to save my patients" so, I used Sildenafil citrate," he added. All three babies lived. The doctor was using the drug to dilate the blood vessels supplying the babies' lungs in a condition called blue baby syndrome.

Studies are now proving Sildenafil to be a very promising and effective in the treatment of pulmonary hypertension. Sildenafil is used during cardiopulmonary bypass surgery and works by alleviating pulmonary level

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## Spinal Cord Injuries 101

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of the spinal cord injury determines what area of the body is affected. Cervical injuries usually result in quadriplegia. If the injury is above C-4 level, the person will likely require a ventilator to breathe. (See table below)

Effects of injury related to site

Level of Injury	Resulting Effects
C-4	Ventilator dependent
C-5	Shoulder and bicep control but no wrist or hand control
C-6	Wrist control but no hand control
C-7 and T-1	Still have dexterity problems with hands
T-1 to T-8	Often control of the hands but poor trunk control with poor abdominal muscle control.
T-9 to T-12	Allows good trunk and abdominal muscle control
L-1 to L-5	Affect the hip flexors and legs. Their control is poor if at all.
S1 to S-2	Affect bowel and bladder
S-3 to S-5	Affect sexual function

Of the patients who survive the first 24 hours after the injury, 85% will be alive 10 years after the injury. The most common cause of death for the spinal cord injured is a disease to the respiratory system, most often pneumonia. The second most common cause of death is non-ischemic heart disease. These are almost always unexplained heart attacks often occurring among young persons with no history of heart disease.

External deaths are the third cause of death in spinal cord injured persons. The most common external cause of death in people who have sustained a spinal cord injury is suicide. Others include homicide

and subsequent injuries.

Some of the complications that spinal cord injured person experience are:

### 7. Skin breakdown or decubitus ulcers

Decubitus ulcers are a major complication for a spinal cord injured person. They most often occur over the bones of the buttocks. After a spinal cord injury there are not only changes in sensations and muscle tone, but blood supply to the skin and subcutaneous tissue. The elasticity of the skin and tissues also changes and becomes stiff. This makes the skin even more susceptible to breakdown.

### 8. Osteoporosis and fractures

People without a spinal cord injury keep their bones strong through regular muscle activity and weight bearing. When muscle activity is decreased or eliminated altogether, they begin to lose calcium and phosphorus and their bones begin to become weak and brittle. Over time, this can develop into osteoporosis.

### 9. Pneumonia, atelectasis and aspiration

Persons with a spinal cord injury above T-4 level are at risk of developing restrictive lung disease—a restriction in lung function. This occurs five to 10 years after the injury and is progressive.

### 10. Heterotopic ossification

Heterotopic ossification is when bone forms outside of the normal skeletal system. This occurs in acute spinal cord injuries, though the condition is not well understood. The main problem with this occurring is the risk for joint stiffening and fusion.

### 11. Spasticity

The nerves below the level of the injury are no longer receiving messages from the brain, so they begin to overreact

to any type of stimuli causing the spasticity. Anything can trigger the spasticity, stretching the muscles, pain or irritation. Also things such as a kidney infection or a decubitus ulcer can trigger it as well.

### 1. Autonomic dysreflexia

This can occur in anyone who has a spinal cord injury above the T-6 level. In this condition the blood pressure rises to a potentially dangerous level. It can be caused by a number of things such as bladder infection, decubitus ulcer and constipation. The best way to treat this is to remove the stimulus that is causing it.

### 2. Deep vein thrombosis

Deep vein thrombosis in the lower leg is almost a given during the early stages of recovery and rehabilitation due to the lack of movement coupled with the changes in circulation. Thromboses in the thigh however are of a great concern, as they can dislodge and cause a pulmonary embolism.

### 3. Cardiovascular disease

Cardiovascular disease is a major long-term risk due to their sedentary lifestyle.

### 4. Syringomyelia

Syringomyelia is post traumatic enlargement of the spinal column. This occurs in 1-3% of all spinal cord injured persons. The major concern is the loss of function above the area of injury.

### 5. Neuropathic spinal cord pain

This is similar to the pain that amputees experience called phantom pain.

### 6. Respiratory dysfunction.

When the injury is above the upper thorax the normal breathing pattern is permanently altered.

## Viagra

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At the present, there is no commercially manufactured suspension formulation available in these minute dosages. Therefore, NICU units are left only with the male adult dose of the “little blue pill.” Not to be deterred NICU’s now have involved the hospital pharmacy in making available to them these small dosage requirements. Individual hospital pharmacies are going ahead and crushing the Viagra tablets in mortar to reduce it to a fine powder, adding water to make a paste,

then mixing until the mixture is a smooth paste and finally adding more water to reduce the suspension to an adjusted dosage able to meet the neonate and/or pediatric patient requirements. This seems like a very archaic way to make this drug given the high tech ways drugs are manufactured. However, this is the only way to make this available for this population group.

Soon one may see not only couples on TV extolling the virtue of Viagra but in other advertisements, parents discussing

how thrilled they are because Viagra saved their infants life.

Soon one may see not only couples on TV extolling the virtue of Viagra but in other advertisements, parents discussing how thrilled they are because Viagra saved their infants life.

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do you go to the local hospital to recruit the nursing staff? If not, then why recruit legal assistants to read and research healthcare issues? Neither one is "better" than the other, they have very different skills and experiences. Quite frankly, reading and interpreting legal briefs filed by opposing council would be beyond the understanding of most nurses. A nurse who had spent many hours doing this would, of course, gain some insight into the process. However, to get the most from this service you need someone who is educated specifically in this area.

Just as legal briefs are complex and specialized, so are medical records. There is a lot of information in this record. Some of it is easy to find, much of it is not. A great deal of information may be comprised of what is not in the record. Other bits of information required interpreting the written records and findings, something the nurse is trained and educated for. There are a lot of resources available that discuss diagnostic information, and give insight on its meaning. Which ones are accurate and easy to use? What other sources are

available to back up those resources? These are questions that the LNC is ready and able to answer. In addition to written resources and guides, LNC's are part of a large network of people with specialized experience. We can, in a few minutes, discuss this information with a lot of healthcare professionals to give you the best analysis and interpretation of the available data.

The research needs of the attorney must also be taken into account. The attorney and the legal assistant are both engaged in this every day. The LNC is the attorney's best source of medical and healthcare research. We are not trying to tell our clients what they should do with a case. Rather, our goal is to describe in detail the medical facts of a case, include research findings to discuss the pros and cons of the medical interventions used, so that the attorney may then make an informed assessment of the case and its needs.

Efficiency is our goal. It has been interesting to read news assessments of the struggling airline industry, for example. The airlines showing the highest profit

margins (Southwest as an example) also have some of the highest paid employees in the industry. On the other hand, some of the airlines that are demanding the biggest salary concessions are the ones that are showing the worst financial returns. Most experts seem to agree that Southwest does this by performing the work they are best equipped to perform and outsourcing the work that is not a core (my word) activity. For the attorney this means that it may be less costly and more efficient to hand the medical-legal analysis to a dedicated medical-legal team. Since this is what we do every day it IS a core activity, as opposed to a minor or infrequent function for the legal staff.

Just as other professions would not be willing to practice without the support of their varied and knowledgeable staff, attorneys also need to surround themselves with all of the professional and technical expertise they need to complete their work. The LNC works closely with the attorney and their staff. Combining all of these elements allows the attorney to handle a great deal of work with a minimum of expense and duplicated effort.

## Acute Pediatric Meningitis

Maggie Driscoll BSN RN CCRN CLNC

Meningitis is an acute inflammation of the meninges, or membranes that line the outer surface of the brain and spinal cord usually caused by infection. While typically associated with college students, infectious meningitis in infants and children carries a higher risk of complications and death. Long term complications include: mental retardation, behavior problems, deafness, hydrocephalus (an increase in CSF on the brain), learning disabilities, paralysis, seizures and vision loss. While complications can occur despite adequate care, a failure to diagnose and treat infectious pediatric meningitis in a timely manner can lead to large settlements.

### Causes

Infectious meningitis is typically either viral or bacterial in origin, but can be caused by fungi and protozoa. Viral meningitis is more common than bacterial meningitis and usually less serious. Bacterial meningitis can be life-threatening if not promptly treated.

*Group B Streptococcus*, *Escherichia coli*, and *Listeria monocytogenes* are the most common causes of bacterial meningitis in newborns. *Streptococcus pneumoniae* (pneumococcus) and *Neisseria meningitidis* (meningococcus) are more frequent in children older than 2 months of age. Before routine use of the Haemophilus influenzae type b (Hib) vaccine in the 1990's, Hib was the leading cause of meningitis in children in the United States.

Enterovirus, a common cause of the stomach flu, is the most frequent viral cause of meningitis and can occur any time during the year but is most commonly associated with outbreaks in the summer and fall. Enteroviruses can be found in saliva, sputum, nasal mucus and the stool of an infected person. Other viral pathogens responsible for viral meningitis include paramyxoviruses, herpes, influenza, rubella, and adenovirus. Children at risk for developing meningitis include those with chronic diseases, such as diabetes or sickle cell anemia, conditions

that weaken the immune system, such as cancer or HIV, day care, preschool, or other large gatherings of children, head injury, facial cellulitis, sinusitis, ear infection, poor or crowded conditions, and viral illnesses, such as measles, mumps, or rubella. Meningitis in newborns is more commonly associated with maternal infection or fever at delivery.

### Signs and Symptoms

When bacteria or viruses infect the meninges, the body defends itself by launching white blood cells and other infection-fighting substances into the cerebrospinal fluid (the fluid that circulates within the brain and over its surface). This inflammatory process can cause symptoms of meningitis. The presenting signs and symptoms of meningitis are thought to be related to either infection and/or the inflammatory process within the central nervous system.

Signs and symptoms of meningitis in young infants can be difficult to identify

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## Acute Pediatric Meningitis

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and may include: irritability, inconsolable crying, high-pitched cry, seizures, arching of the back, sleeping more than usual, poor feeding, a bulging fontanelle (soft spot on infant's head) and low-grade or subnormal fever. The infant may cry when moved or held. After age 3 months, the infant may exhibit symptoms more often associated with bacterial meningitis, such as fever, vomiting, irritability, lethargy, or behavioral changes. A petechial rash (pinpoint, round, nonraised, purplish red spots caused by intradermal hemorrhage) may also be seen in more advanced cases of infection.

Children aged 2-3 years and beyond may also complain of headache, light sensitivity, neck or back pain, and nausea/vomiting. In addition the child may be sleepy, appear confused, have a fever, be irritable, refuse to eat and have a stiff neck.

Additional signs of meningeal inflammation include Kernig's sign (the patient lies on his or her back, the thigh is flexed to a right angle from trunk; in this position complete extension of the thigh is impossible) and Brudzinski's sign (on passive flexion of the leg on one side, a similar movement occurs in the opposite leg and if the neck is passively flexed, flexion of the legs occurs).

### Diagnosis

Diagnosis of meningitis is often the result of a "rule-out" sepsis work-up in the infant or child. Typically, the sepsis work-up consists of a complete blood count, chest x-ray, blood, urine cultures and cerebral spinal fluid cultures when meningitis is suspected. In children older than 2 years, a CXR is not routinely ordered unless a specific indication is present, such as a bronchial infection.

Examination of the cerebral spinal fluid via lumbar puncture (a needle is placed into the spinal canal where CSF is removed for testing) is considered the most important of all laboratory tests in diagnosing infectious meningitis. The results of the CSF can assist the practitioner in identifying the cause of meningitis.

CSF should be sent to the lab for cell count, gram stain, culture and sensitivity, glucose, protein and antigen, acid-fast bacillus, and fungal stains. Polymerase chain reaction (PCR) tests of CSF for enterovirus, HSV, CMV, and HIV may assist in the diagnosis of viral pathogens as the cause.

### Differential diagnosis of bacterial versus viral meningitis in the CSF

CSF	Bacterial features	Viral features
White blood count	Usually over 1000/ mm <sup>3</sup> with greater than 50% neutrophils	Usually below 500/mm <sup>3</sup> , with greater than 50% lymphocytes
Protein	Elevated	May be elevated
Glucose	Reduced	Normal or low
Gram stain	Positive in approximately 70% of patients	Negative

Normal CSF is clear in its appearance. Cloudy CSF can indicate infection. Normally the glucose level in the CSF is greater than two-thirds of the serum glucose. A "traumatic" lumbar puncture can cause bleeding into the CSF. Since blood contains protein, a bloody tap can alter the results of the protein results in the examination of the CSF.

Other laboratory examinations may also include: serum glucose (blood sugar), electrolytes, coagulation studies, estimated sedimentation rate (ESR), serum and urine osmolalities (a measure of the concentration of blood or urine), and bacterial antigen studies. Radiological studies such as brain CT may also be included to rule out abscesses, effusions or hydrocephalus.

### Initial Treatment

Children with bacterial meningitis should be hospitalized and treated with intravenous antibiotics. Antibiotic treatment is based on age if the causative organism is unknown. Treatment should not be delayed waiting for culture results.

*Infants > 30 days old:* Ampicillin and a cephalosporin OR Gentamicin  
*Infants 30-60 days old:* Vancomycin should be considered instead of Ampicillin Cephalosporin should also be used.

*Children > 3 months:* Ampicillin or a cephalosporin plus chloramphenicol  
 Seizures and hemodynamic instability should be immediately treated with the appropriate fluids and medications.

Corticosteroids such as Decadron are used to decrease inflammation in certain cases. Fluid and electrolyte imbalances should be corrected as well. Care should be taken not to over hydrate patients to prevent cerebral swelling.

Viral meningitis is treated with fluids, rest and fever-reducers such as acetaminophen. Whether a child requires hospitalization is determined by overall condition.

Bacterial meningitis can be deadly within hours and should be treated as a medical emergency. Failure to properly diagnose and treat meningitis in a timely manner has led to large claims for pediatric practitioners.

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## Viagra

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case.”*

