Journal of Nurse Life Care Planning

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2011 Issue Index

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Welcome to the Winter 2011 issue of the Journal of Nurse Life Care Planning, Topics in Pain Management. With chronic pain identified as a serious problem for millions of Americans, nurses in every specialty are searching for better ways to make pain assessment, treatment, and education part of daily practice. We often find that chronic pain is an important part of Life Care Planning; as in many other aspects of our practice, we may find ourselves the first to clearly identify how chronic pain affects someone over the life span, and to seek out meaningful aspects of assessment and management.

Mariann Cosby deserves your thanks for the hard work she did as contributing editor, developing leads for contributors, following up to meet deadlines, and getting their submissions in order. Among the articles you have before you are a first-person piece with good links for patient teaching and support, an interesting paper on gender differences in pain, an overview of pharmacological agents for neuropathic pain, and information on interventional pain management.

Our recent readership survey revealed that almost all respondents read every article, feature, book review, and advertisement, and print out hard copies for future reference. Many shared some or all of the Journal with colleagues, clients, and others as part of their educational efforts. We had some interesting suggestions that we look forward to implementing over the next year, among them a suggestion for disease-specific information. You will find an excellent article on Life Care Planning for the long-term cancer patient on page 519. As ever, we are eager to hear what you would like to see in your Journal.

At year’s end I want to acknowledge our Editorial Board. All are volunteers who review and proofread every article and feature, attend monthly meetings, and share in discussions on the Journal’s future. Each is a working CNLCP with a commitment to our profession. The Annual Issues Index (p. 537) bears witness to the breadth of their influence and dedication.

Wishing you a happy and healthy holiday season!

Cordially,

Wendie Howland
Editor, Journal of Nurse Life Care Planning
whelowland@howlandhealthconsulting.com
Information for Authors

AANLCP® invites interested nurses and allied professionals to submit article queries or manuscripts that educate and inform the Nurse Life Care Planner about current clinical practice methods, professional development, and the promotion of Nurse Life Care Planning within the medical-legal community. Submitted material must be original. Manuscripts and queries may be addressed to the Editorial Committee. Authors should use the following guidelines for articles to be considered for publication. Please note capitalization of Nurse Life Care Plan, Planning, etc.

Text

Manuscript length: 1500 – 3000 words

- Use Word® format only (.doc)
- Submit only original manuscript not under consideration by other publications
- Put the title and page number in a header on each page (using the Header feature in Word)
- Set 1-inch margins
- Use Times, Times New Roman, or Arial font, 12 point
- Use double-spacing, using the Word formatting feature
- Place author name, contact information, and article title on a separate title page, so author name can be blinded for editorial review
- Use APA style (Publication Manual of the American Psychological Association)

Art, Figures, Links

All photos, figures, and artwork should be in JPG or PDF format (JPG preferred for photos). Line art should have a minimum resolution of 1000 dpi, halftone art (photos) a minimum of 300 dpi, and combination art (line/tone) a minimum of 500 dpi. Each table, figure, photo, or art should be on a separate page, labeled to match its reference in text, with credits if needed (e.g., Table 1, Common nursing diagnoses in SCI; Figure 3, Time to endpoints by intervention, American Cancer Society, 2003). Live links are encouraged. Please include the full URL for each.

Editing and Permissions

The author must accompany the submission with written release from:

- Any recognizable identified facility or patient/client, for the use of their name or image
- Any recognizable person in a photograph, for unrestricted use of the image
- Any copyright holder, for copyrighted materials including illustrations, photographs, tables, etc.

All authors must disclose any relationship with facilities, institutions, organizations, or companies mentioned in their work.

All accepted manuscripts are subject to editing, which may involve only minor changes of grammar, punctuation, paragraphing, etc. However, some editing may involve condensing or restructuring the narrative. Authors will be notified of extensive editing. Authors will approve the final revision for submission.

The author, not the Journal, is responsible for the views and conclusions of a published manuscript.

Submit your article as an email attachment, with document title article_name.doc, e.g., wheelchairs.doc

All manuscripts published become the property of the Journal. Manuscripts not published will be returned to the author. Queries may be addressed to the care of the Editor at: whowland@howlandhealthconsulting.com

Manuscript Review Process

Submitted articles are peer reviewed by Nurse Life Care Planners with diverse backgrounds in Life Care Planning, case management, rehabilitation, and the nursing profession. Acceptance is based on manuscript content, originality, suitability for the intended audience, relevance to Nurse Life Care Planning, and quality of the submitted material. If you would like to review articles for this journal, please contact the Editor.

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(Many thanks to all our reviewers. They catch inconsistencies, make suggestions for improvements to the authors, and help proof the final product before it goes out the door, thus helping us bring you this journal. Ed.)
Contributing To this Issue

Dr. William Ackerman (“Gender Specificity and Chronic Pain”) is American Board of Medical Specialties Board certified in Pain Medicine and is fellowship trained in Pain Medicine. He is an expert in Complex Regional Pain Syndrome treatment and disability and is a fellow of the American Academy of Disability Evaluating Physicians. He is an Independent Medical Examiner and has published four books and over 100 scientific articles in peer reviewed journals.

Sandra Callaghan (“Interventional Pain Management for LCP with CPT Codes) is a Family Nurse Practitioner, having received her Master’s of Science in Nursing/Family Nurse Practitioner in March 2011. She currently works as a Nurse Practitioner in the pain management field in Los Angeles, California. She is a Certified Nurse Life Care Planner and Medicare Set Aside Consultant Certified.

Doris Cope MD (“Interventional Techniques for Chronic Pain”) has been the Director of the Pain Medicine Fellowship at the University of Pittsburgh Medical Center since 1997 and Director of the Interprofessional Program on Pain Research, Education, and Health Care at the University of Pittsburgh Schools of the Health Sciences. She will be leaving academic medicine in February 2012 to join a private pain practice in Annapolis MD and will also be affiliated with Johns Hopkins Medical Center. She has been named both in Best Doctors, Inc and Top Doctors for the past two decades, the Editor Emerita of the Bulletin of Anesthesia History, and has been a long time board member of both the Wood Library-Museum and Anesthesia Foundation. She was the first female President of the Academy of Anesthesiology, and is a graduate of the Executive Leadership in Academic Medicine program.

Penney Cowan (“Moving from Passive Patient to Active Participant”) is the founder and chief executive officer of the American Chronic Pain Association (ACP A). She herself is a person with chronic pain and established the ACPA in 1980 to help others living with the condition. Over the past 30 years, Cowan has been an advocate and consumer representative for pain issues. The American Pain Society awarded her the 2005 John and Emma Bonica Public Service Award. She is the author of Patient or Person, Living With Chronic Pain, published by Gardner Press. Most recently she has been appointed as a Consumer Representative for the FDA/CDER Division of Anesthesia, Analgesia and Addiction Products (DAAAP).

Cheryl Kaufman (“Life Care Planning in Cancer”) is owner and principal of CK Medical-Legal Consulting Services in Massachusetts. She has more than 25 years of nursing experience in Legal Nurse Consulting and Life Care Planning. In addition to her early clinical experience in neonatal intensive care, pediatrics and caring for patients who suffered a stroke, her career path predominantly focused on infectious diseases, oncology and biotechnology and nursing education with emphasis on oncology disease management with specific chemotherapeutics and biological response modifiers, drug-drug interactions and patient safety issues.

continued next page
Gokul Toshniwal MD ("Interventional Techniques for Chronic Pain") is currently a Pain Medicine Fellow at the University of Pittsburgh Medical Center. He completed residencies at Wayne State University/Detroit Medical Center (WSU/DMC) and the All India Institute of Medical Sciences (AIIMS), New Delhi, Delhi, India, in both anesthesiology and intensive care. Dr. Toshniwal attended medical school at Mysore Medical College and Research Institute, Mysore, Karnataka, India. He has been named as FAER resident scholar twice at ASA annual meetings. He has also given presentations at the American Academy of Pain Medicine and the Michigan Society of Anesthesiology.

Keith Sofka ("Technology Corner: Ramps, Part II") is a principal of Caragonne and Associates, Ajijic, Jalisco, MX. He has practiced the provision of assistive technology services for the past 30 years. Mr. Sofka provides consultation to hundreds of companies, schools, government agencies and individuals. A major focus of Mr. Sofka’s work has been to provide recommendations for and implementation of school and workplace reasonable accommodation recommendations for individuals and organizations. This work typically includes housing and commercial building access as well as transportation, mobility and completion of daily living needs as well as modifications to the individual worksite. He has also taken training and practiced in other areas of assistive technology including custom seating and positioning for individuals with severe orthopedic involvement. His work has always been focused on ways to use technology to increase the independence of the individual.

Zirong Zhao MD ("Interventional Techniques for Chronic Pain") is board-certified in Internal Medicine and Pain Medicine and is a fellow of the American College of Physicians. She obtained her Bachelor of Medicine degree from Shanghai Medical University. During her practice as an internist, she became interested in treatment of chronic pain. Dr. Zhao completed a Pain Medicine fellowship at the University of Pittsburgh Medical Center and joined the Veterans Affairs Medical Center in Washington, DC, where she is a staff physician leading the interventional pain clinic. She is also an associate professor at the George Washington University Medical Center.
Letters to the Editor

Perhaps everyone is too busy writing holiday to-do lists or thank-you notes to their Thanksgiving hosts! Our mailbox is empty this issue.

Letters on any topic are welcome and may be sent to the Editor at whowland@howlandhealthconsulting.com. Letters may be edited for brevity.

Wild turkey
Meleagris gallopavo
As you plan a ramp there are a number of design considerations that should be addressed as the design progresses. In the last column, I described the basic issues related to the slope of the ramp. There are some additional considerations related to ramp design which will be addressed in this column.

The first issue is planning the actual route that the ramp will take. Front or back of the home? Left or right side of the porch or landing? Sometimes the terrain will dictate ramp placement. There may be only one side of one entrance where a ramp could fit. Sometimes the other sides and entrances have sloping grades or are too close to a neighbor’s property line. Most cities require two exits accessible by all occupants, so in a case like this, you may install a ramp at one entrance and a lift at another.

Other users Before completing the planning stage, it is important to consider all users, able-bodied as well as wheelchair or scooter users. Will the ramp block access for other users? If possible, build the ramp to the side of stairs so that the stairs can still be used. For a porch on a home, this may mean approaching the porch from one side or the other. Building to the side of the stairs will probably require that some of a railing be removed.

Getting to the top of the porch or landing is usually only part of the problem: often there is one last smaller step directly under the entry. The easiest solution is to raise the floor of the porch to make it level with the interior floor of the home. If there is a threshold which would make passage difficult, it can be removed and the bottom of the doors extended with a flexible piece of rubber (called a sweep) that seals the interior from drafts and weather. The front edge of the raised porch level, in front of the stairs, should be set back the same distance as the depth of each stair so that stair users will not encounter and trip over a higher step at the top of the flight.

Consideration must be given to how the wheelchair and user will enter the home. If the individual will be using the ramp and entering the home without assis-
tance, strength, fine motor control, and reach must be considered. If there are two doors, i.e., one storm/screen door swinging out and a main door swinging in, it is often necessary to remove the outer door so that the person can approach the inner door without having to open and hold another door that swings in the opposite direction. Lever-type door handles and key extensions are typical door-opening adaptive items. Sometimes a rope with a handle at the end attached near the inside and outside door handles can help the individual close the door without excessive maneuvering.

Depending upon how much room is available on the porch and the abilities of the individual (e.g., right- or left-handed, stronger on one side) it may be best to plan the ramp or change the hinge side of the door so that the individual approaches the door on the handle side. This way the door can be unlocked and just swing into the house. Approaching the hinge side of the door first would require rolling somewhat past the center of the door to reach the handle and lock, followed by an awkward backwards maneuver to be able to enter the open door.

Sometimes space on a porch can be limited. If stairs remain functional, they can present a fall risk to the wheelchair user. Attaching a spring-loaded hinged safety gate on the stair side of the porch will address this. This gate should be designed to open only 90 degrees so that it stops parallel to the stairs, effectively blocking access to the wheelchair user. This will provide an extra margin of safety for the wheelchair user while they move around on the porch, unlock the door and enter the house.

Wooden ramps are constructed very much like wooden deck, so most carpenters who can build a deck should be able to build a well-constructed ramp. Pressure treated boards or sheets of outdoor grade plywood (wood that has been treated to prevent rot and decay) should form the decking or the part of the ramp where you walk or roll.

A ramp, like a deck, requires railings on either side for safety. Vertical slats between the handrail and the bottom of the ramp should be avoided. This is because if someone rolls down the ramp out of control and hits the slats, a foot could get caught between the slats causing severe injury. It is much better to build the railings with a solid portion, running paral-

continued next page
lel to the ramp, that is wide enough to block the foot paddles of the wheelchair.

Floor boards should run across the direction of travel. A space about ½ inch wide between the boards will help to increase traction on days when the surface is wet or slippery. Decking should be waterproofed to help prevent the growth of slippery things like algae, mold, or mildew. It is typical to waterproof the entire structure for appearance; waterproofing should be reapplied according to the manufacturer’s recommendation or if it is losing its effectiveness.

If you use solid plywood, you may want to consider adding indoor-outdoor carpet for better traction. In wet climates, you may need to remove the carpeting from time to time to permit the understructure to dry. Consideration may need to be given to wintertime snow and ice removal. Someone should have the standing assignment of snow removal before the level of snow becomes too deep. Salt or other anti-slip chemicals can be helpful but should be used sparingly since they can severely damage the wood.

Additional details and full construction information are readily available on the Internet. Most of this information will relate to the requirements of the ADA and public ramps, but remember: a private ramp does not have to meet ADA requirements. Be sure to check with the local building authority for local code requirements, as some municipalities require a permit and have restrictions regarding the construction of the ramp. A good contractor should be able to manage these details.

Finally, if you need a ramp in a hurry, perhaps for someone returning home from the hospital, many DME providers have aluminum ramp components and can erect a temporary ramp on a rental basis on short notice, sometimes with a rent-to-buy contract. This can also be useful when access is required for a short time, as for a limited rehabilitation period or holiday visitors. This may also be a good solution for access to a rental dwelling where a constructed ramp is not possible. An Internet search for “handicap ramps” returns many choices.
Moving from Passive Patient to Active Participant

Penney Cowan, American Chronic Pain Association

Before you can help people with pain, it is important to understand their journey.

All pain starts out as an acute problem. We went through the normal process of going to our health care providers, perhaps having tests, treatments, and prescriptions. Our expectation was that the pain would be short-lived and before we knew it, we would be back to our normal selves. However, somewhere along the way something happened. We did not respond to medication or treatment as expected; perhaps after numerous tests there was still no diagnosis of the cause of the pain.

At some point, we realized that maybe, just maybe, there was something more serious than we first thought. It never entered our minds that there was nothing serious and, while we were still hurting a great deal, there was nothing more that could be done. Our expectation since as far back as we can remember was that our health care professional could make us feel better. When we heard the words, “Learn to live with it,” or “all the tests came back negative, I think you are having emotional problems and need counseling,” our world fell apart.

We didn’t choose to have the pain. We would gladly give it back for our life before the pain. Some of us would and do spend our life savings looking for a way to get relief from the day-to-day nagging pain. When another door closes to the possibility of recovery, our spirit falls further into hopelessness and helplessness. Our life is controlled by the fear

Penney Cowan is the founder and executive director of the American Chronic Pain Association, POBox 850, Rocklin CA 95677, www.theacpa.org. She can be reached at 916-632-0922.
of pain; never knowing when it will intensify, how long it will last, or what small movement will send shockwaves through our body. We are completely controlled by our pain and, more importantly, by our fear of pain. Life slows to a snail’s pace and just about anything that we do requiring movement hurts.

Our health care providers are not really helping. The problem is they do not know how to help. Most health care professionals receive a minimal amount of pain management education. They can do many things, but helping someone manage pain is, for many, not among them. The situation grows grim and the person with pain loses identity and becomes a “chronic pain patient” with no expectation that life will ever get better.

Lack of training of health care professionals and the expectations of people with pain only fuel the fire of hopelessness. The patients’ role is passive and, unfortunately for most, they remain passive. Seeking out any means to get relief, they disappear into a world that strips them of hope. Far too often, that happens to their families, too. Their lives become controlled by the pain.

Recently the International Association for the Study of Pain adopted the Declaration of Montreal. (IASP, 2010) The key is that access to pain management is a fundamental human right. It is possible to live a full life in spite of pain, but the person with pain needs some kind of roadmap. The problem is how to provide it.

Since 1980, the American Chronic Pain Association (ACPA) has been helping people to help themselves through peer-led groups to teach coping skills and offer support and understanding. People that attend these groups are validated. No one questions their pain. Instead the ACPA provides coping strategies that allow people with pain to take active part in their treatment rather than being the passive patient. We encourage them to work with their health care professionals (HCPs) as part of the treatment team instead of sitting on the sidelines waiting for someone to “fix” them.

At the ACPA, our message is that it is possible to regain control of one’s life in spite of pain. The goal of pain management is to improve the quality of life, increase function and reduce one’s sense of suffering. What a person with pain needs to understand is that there may always be some pain, but that life is for living, not just existing from day to day.

Keeping the lines of communication open is critical to a positive and constructive relationship with one’s HCP. However, in today’s busy world there is little time for office conversations. Pain management is not just about the level of pain experienced. It is important to measure function and quality of life.

The ACPA has a number of tools to help patients communicate with HCPs, understand the impact the continued next page
Ten Steps from Patient to Person
©American Chronic Pain Association

Making the journey from patient to person takes time. The isolation and fear that can overwhelm a person with chronic pain grows over time. And the return to a fuller, more rewarding life also takes time.

It’s a journey with many phases. The ACPA describes these phases as Ten Steps.

**STEP 1: Accept the Pain**

Learn all you can about your physical condition. Understand that there may be no current cure and accept that you will need to deal with the fact of pain in your life.

**STEP 2: Get Involved**

Take an active role in your own recovery. Follow your doctor's advice and ask what you can do to move from a passive role into one of partnership in your own health care.

**STEP 3: Learn to Set Priorities**

Look beyond your pain to the things that are important in your life. List the things that you would like to do. Setting priorities can help you find a starting point to lead you back into a more active life.

**STEP 4: Set Realistic Goals**

We all walk before we run. Set goals that are within your power to accomplish or break a larger goal down into manageable steps. And take time to enjoy your successes.

**STEP 5: Know Your Basic Rights**

We all have basic rights. Among these are the right to be treated with respect, to say no without guilt, to do less than humanly possible, to make mistakes, and to not need to justify your decisions, with words or pain.

**STEP 6: Recognize Emotions**

Our bodies and minds are one. Emotions directly affect physical well being. By acknowledging and dealing with your feelings, you can reduce stress and decrease the pain you feel.

**STEP 7: Learn to Relax**

Pain increases in times of stress. Relaxation exercises are one way of reclaiming control of your body. Deep breathing, visualization, and other relaxation techniques can help you to better manage the pain you live with.

**STEP 8: Exercise**

Most people with chronic pain fear exercise. But unused muscles feel more pain than toned flexible ones. With your doctor, identify a modest exercise program that you can do safely. As you build strength, your pain can decrease. You'll feel better about yourself, too.

**STEP 9: See the Total Picture**

As you learn to set priorities, reach goals, assert your basic rights, deal with your feelings, relax, and regain control of your body, you will see that pain does not need to be the center of your life. You can choose to focus on your abilities, not your disabilities. You will grow stronger in your belief that you can live a normal life in spite of chronic pain.

**STEP 10: Reach Out**

It is estimated that one person in three suffers with some form of chronic pain. Once you have begun to find ways to manage your chronic pain problem, reach out and share what you know. Living with chronic pain is an ongoing learning experience. We all support and learn from each other.

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pain has on life, and how to move from passive patient to active participant in care. Simply click on the American Chronic Pain Association web page www.theacpa.org or look at the copyrighted tools below to help patients communicate with HCPs, understand how to take medicines, or figure out what activities and things in daily life influence pain.

**ACPA Pain Log** (ACPA, 2010) Many things can affect your pain. These can include stress, sleep, money worries, and even the weather. The Pain Log can help you track the everyday things that have an impact on your pain. When you understand what makes your pain worse, you can begin to work on ways to reduce or deal with your pain “triggers.” This tool is also now interactive on the web page. Individuals can go on daily, weekly or however often they want to track their progress and begin to make the connection of function, activity and all the other factors that impact their level of pain. The tool can be found at [http://www.theacpa.org/painlog/painlog.aspx](http://www.theacpa.org/painlog/painlog.aspx)

**Quality of Life Scale** (ACPA, 2007) (right) Rather than trying to measure your level of pain, it is helpful to use this tool to measure your function, how your pain influences your ability to do normal, everyday tasks. Share it with your health care provider at your next visit.

[http://www.theacpa.org/documents/Quality of Life Scale.pdf](http://www.theacpa.org/documents/Quality of Life Scale.pdf)

**Fibromyalgia Pain Map** (ACPA, 2010) This tool can help you create a detailed picture of your pain—where it is, how it feels, and how much it hurts—that you can print out and share with your health care provider when you visit.

**FOLLOW-UP FROM YOUR VISIT**

It is important that after your appointment with me you follow through with what we discussed during your visit. I have provided you with this simple guide to ensure that you complete all the treatments/advice/recommendations. Keep in mind that you play a significant role in your health care.

<table>
<thead>
<tr>
<th>Name:</th>
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<th>Date:</th>
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<th>Diagnosis:</th>
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<tr>
<td>Other Treatment:</td>
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<td>Tests:</td>
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<td>X-Ray</td>
<td>Lab Test</td>
<td>EKG</td>
<td>Nerve Conduction Study</td>
<td>Stress Test</td>
<td>MRI</td>
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<td>Medications</td>
<td>Diet / Weight Loss</td>
<td>PT / Massage</td>
<td>Acupuncture</td>
<td>Counseling</td>
<td>Nerve Blocks</td>
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<td>Follow-up:</td>
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<td>One Week</td>
<td>Two Weeks</td>
<td>One Month</td>
<td>Two Months</td>
<td>Six Months</td>
<td>Call</td>
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<td>Restrictions:</td>
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<td>No Smoking</td>
<td>No Lifting</td>
<td>No Workouts</td>
<td>No Sun</td>
<td>Stay off your feet</td>
<td>No Driving</td>
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<td>Diet:</td>
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<td>No Spicy Food</td>
<td>No Dairy</td>
<td>No Salt</td>
<td>No Caffeine</td>
<td>No Alcohol</td>
<td>No Sweets</td>
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<td>Recommendations:</td>
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<tr>
<td>Exercise</td>
<td>Walking</td>
<td>Swimming</td>
<td>Stationary Bike</td>
<td>Bed Rest</td>
<td>Classes &amp;/or ACPA Groups</td>
</tr>
</tbody>
</table>

www.theacpa.org  800.533.3231  © ACIPA 2008

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When you’re not feeling well you go to the doctors. He or she may give you a prescription to obtain medication from the pharmacy as part of your treatment. It is important that you understand what you are taking, why and how to take it. The process should be like this:

How to have your prescription filled:

<table>
<thead>
<tr>
<th>Script</th>
<th>Fill</th>
<th>Ask</th>
<th>Take</th>
<th>Questions? Call</th>
</tr>
</thead>
</table>

Things that you need to keep in mind when taking your medication:

- **Time to Take**
  - Morning
  - Evening

- **Number of Pills**
  - Morning
  - Evening

- **Take with Food**
  - On Empty Stomach

Things to Avoid:

- Driving
- Alcohol
- Sun
- Dairy Products
- Vitamins

May Cause:

- Drowsiness
- Blurred Vision
- Dry Mouth
- Constipation

Storing:

- Medicine Cabinet
- Safe
- Bedroom Drawer
- Purse
- Kitchen Cabinet

Disposing:

- Flushing
- Coffee Grounds
- Cat Litter
- Pharmacy
- Garbage Can
- Share with Friends & Family

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continued next page
Visit Follow Up (ACPA, 2009) (below) It is important that after your appointment with your doctor you follow through with what was discussed during your visit. The ACPA Follow-Up tool provides you with this simple guide to ensure that you complete all the treatments/advice/recommendations.

http://www.theacpa.org/documents/ACPA%20Follow-Up%20V-5.pdf

CARE Card (ACPA, 2009) (below) It is important that you understand what you are taking, why and how to take it. This graphic tool will help you to understand how your medication should be taken, what things you should avoid while taking it as well as possible side effects.


While people with pain have to look to a HCP for medical care, they also need to understand what their own responsibilities are. Making the journey from patient to person takes time. Isolation and fear can overwhelm a person with chronic pain, and they grow over time. The return to a fuller, more rewarding life also takes time. It’s a journey with many phases. The ACPA describes these phases as Ten Steps, coping skills that focus on areas where change may be needed. They are explained in the publication Ten Steps From Patient to Person. (ACPA, 1984)

There are videos on the ACPA web page that go into detail about how to apply these steps to daily life. They are reproduced below and can be found at: http://www.theacpa.org/agrability/agrability.aspx.

Unlike traditional medicine with the patient as passive participant, living a full life with pain requires the patient to take an active role in the recovery process. The answer is different for each individual, depending on individual medical and personal needs. Biofeedback, physical therapy, counseling, pacing, nutritional counseling, and a host of medical modalities are but a few ways someone living with pain can become an active participant in recovery.

Nursing Diagnoses to Consider

NANDA International Nursing Diagnosis, 2009-2011

- **Readiness for Enhanced Self-Health Management** (Domain 1, Health Promotion; Class 2, Health Management)
- **Readiness for Enhanced Coping** (Domain 9, Coping and Stress Tolerance; Class 2, Coping Responses)
- **Readiness for Enhanced Self-concept** (Domain 6, Self-Perception; Class 1, Self-Concept)
- **Readiness for Enhanced Power** (Domain 6, Self-Perception; Class 1, Self-Concept) Class 3, Value/Belief/Action Congruence

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References


Snow coming
Rural Colorado
Gender Specificity and Chronic Pain

William E. Ackerman III MD FAADEP
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Men and women feel pain differently and respond to treatment differently (Fillingim, 2000). Women report more severe and longer-lasting pain than men. Furthermore, there are gender differences in pharmacokinetics and/or pharmacodynamics. One obvious reason for these differences is that women tend to have lower body weight than men. Adults are often given the same dose of drug regardless of body weight, so women tend to have higher serum concentrations of drugs than men. Other gender differences in bioavailability, metabolism, and renal elimination may also be involved in medication effects.

Gender and Pharmacology
Nalbuphine (Nubain), pentazocine (Talwin), and butorphanol (Stadol), mixed agonist/antagonist opioids that induce analgesia by acting predominantly at kappa opioid receptors, have been shown in single dose studies to have greater analgesic efficacy in women than in men (Gear et al., 1999). The reason for this observation remains unclear. Morphine, a mu receptor agonist, has greater efficacy in males in animal studies (Boyer, Morgan, & Craft, 1998).

Drug metabolism may differ in men and women (Oztekin et al., 2005).

Gender also affects distribution. Drug concentrations are determined by volume of distribution and clearance, both of which depend on body weight for most drugs independent of sex differences. Women have a higher body fat percentage than men, which can affect the volume of distribution. The menstrual cycle can affect drug blood levels due to to fluctuating body fluid mass. This can result in differing renal drug clearance in women due to changes in glomerular filtration.

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Gender may be an important variable in the processes of absorption, distribution, metabolism, and excretion of drugs taken by males and females. (Fletcher, Acosta, & Strykowski, 1994)
The impact of hormone therapy on long term pharmacokinetics of concomitantly-given drugs is an important issue. Oral contraceptives can decrease the blood levels of some anticonvulsants, such as phenytoin (Dilantin). On the other hand, they can increase the blood level of other medications, such as diazepam (Valium). Hormone replacement therapy (HRT) in women enhances the effects of antidepressants-- and approximately two-thirds of the antidepressants in the United States are prescribed to women.

Women have more side effects with antidepressants (e.g., fatigue, gastrointestinal affects, and other adverse affects) than men (Keers & Aitchison). Gonadal hormonal changes in women that occur before, during and after the menstrual cycle alter the metabolism of certain drugs and can affect their removal from the body.

One reason why pain perception differs between individuals is due to the effects of estrogen and progesterone on the brain and spinal cord. Although male and female brains have approximately the same number of receptors for both estrogen and androgen, researchers have found that gender-specific hormone and hormonal receptor differences influence the regulation and transmission of the nervous impulses that transmit pain. Furthermore, female gender-specific diseases may be related to estrogen receptor abnormalities (Sekigawa et al.).

Estrogen affects the central nervous system levels of dopamine and serotonin, which when decreased can cause mood disorders, and women experience more depression than males. Men may have more serotonin receptors, which may account for their lower incidence of depression.

Woman's greater sensitivity to pain may be dependent on the fact that they have less serotonin in the brain and spinal cord. Some pain syndromes are affected by changes in sex hormone levels. For example, migraine headaches resolve during pregnancy as a result of elevated blood levels of progesterone. When a woman’s estrogen decreases, joint pains may increase. In men, a decreased testosterone will increase angina frequency. Increased testosterone increases the incidence of cluster headaches in men. Increased progesterone, testosterone, and estrogen increases temporomandibular joint pain in both men and women.

Other physiologic factors such as gastric acid secretion, gastrointestinal blood flow, proportions of

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muscular and adipose tissue, amount of drug binding proteins, gender-specific cytochrome P450 iso-
zymes, and renal blood flow are several factors that may contribute to sex-related differences in pharma-
cokinetics. Women have a lower stomach acid secre-
tion than men. This can increase the absorption of 
drugs such as amitriptyline (Elavil) or diazepam, and decrease the absorption of acidic drugs such as 
phenytoin and barbiturates. Body fat is 11 percent higher in women between the ages of 25 and 35, which can increase the volume of distribution of many drugs.

Opioid therapy efficacy can decrease in both men and women if serum testosterone levels decrease; long-acting opioid preparations suppress the hypothalamic-pituitary-
gonadal axis in men and produce symptomatic opioid-induced androgen deficiency (Daniell, Lentz, & Mazer,
2006). Testosterone therapy may normalize levels and improve quality of life parameters (e.g., sexual function, well-being, mood) in both men and women (Daniell et al., 2006; Dolan et al., 2004).

Because estrogens modulate the function of the nervous, immune, skeletal, and cardiovascular sys-
tems, estrogenic modulation of pain is an exceedingly complex, multi-faceted phenomenon, with es-
trogens producing both pro and antinociceptive ef-
ffects that depend on the extent to which each of 
these systems of the body is involved in a particular 
type of pain (Craft, 2007). For example, estrogen interacts with other substances and cells (e.g., sub-
stance P, bradykinin, and mast cells) to modulate neurogenic inflammation, thus influencing its onset 
and course (Bjorling & Wang, 2001). Estrogen independently exerts direct effects on nociceptor neu-
rons to promote axon outgrowth (Black-
lock, Johnson, Krizsan-Agbas, & Smith, 2005).

Antidepressants are frequently prescribed in chronic pain management. Gender differ-
ences in antidepressant treat-
ments, including responses and side effects, have been studied (Sramek & Cutler, 
2011). Liver enzymes in women may not metabolize selective 
serotonin-specific reuptake inhibitors 
(SSRIs), e.g., citalopram (Celexa et al.), escitalo-
pram (Lexapro et al.), fluoxetine (Prozac et al.), par-
oxetine (Paxil et al.), and sertraline (Zoloft et al.), among others. Women tend to have higher blood concentrations of tricyclic antidepressants, such as amitriptyline, than men.

Women may respond better to SSRIs than tricyclics. Men responded better to tricyclics than to SSRIs, but continued next page
may have better therapeutic effects than women at lower SSRI blood levels. Side effects differ: Women taking SSRIs are more likely to report nausea and dizziness, while men report increased urinary frequency and sexual dysfunction.

Gender specificity regarding muscle relaxants and anticonvulsants has not been studied in depth. Previous studies directed at the more traditional NSAIDs reveal that male patients do not respond differently to the effects of the traditional NSAIDs than females (Knights, McLean, Tonkin, & Miners, 1995). Estrogen may increase prostaglandins, which in turn may attenuate NSAID efficacy. On the other hand, studies with COX-2 inhibitors suggest that there is no greater analgesic effect in men versus women.

**Gender and Disease**

There are notable sex differences in the incidence and manifestations of virtually all central nervous system disorders, including neurodegenerative disease (Parkinson's and Alzheimer's), chronic pain, drug abuse, anxiety, and depression (Gillies & McArthur). Male and female nervous systems respond differently to traumatic brain injury; *in vivo* research attributes this difference to neuroprotection from female sex hormones (Berry et al., 2009).

Women are more prone to neck pain because they have smaller necks, making them vulnerable to the onset of pain following trauma (Stemper et al., 2009). Women have more whiplash injuries than men, and their injuries are more severe. Gender affects the incidence of back pain (Miller, Slota, Agnew, & Madigan). Back pain prevalence is higher among women than men at younger ages, but around age 45 the rate for back pain among men exceeded that of women (Kanlayanaphotporn, Trott, Williams, & Fulton, 2003). In people 65 years of age or over, the incidence of back pain is similar for both men and women. The incidence of lower back pain in men is usually from an injury, whereas in women it can be from repetitive movements.

Hypoestrogenic states contribute to osteoporosis (Koera, Nozaki, & Nakano, 2002). Osteoporosis, therefore, is more prevalent in women. Osteoporosis is a significant bone disease because of its potentially disabling effects, largely chronic back pain. Lumbar compression fractures are more common in postmenopausal women. Approximately 30 percent of all postmenopausal Caucasian women will suffer from fractures related to osteoporosis. Osteoporosis can be seen in a small percentage of men.

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Osteoarthritis is the most common arthritic disease. Osteoarthritis is not common before age 45, but when it does occur before 45, it is seen more often in men. After age 55, osteoarthritis is seen 2-3 times more often in females than in males (McKean et al., 2007). Osteoarthritis, which affects 40 percent of middle-age patients and approximately 70 percent of geriatric patients, essentially will have the same degree of input into the central nervous system of men and women.

Irritable bowel syndrome, more prevalent among women than men, is commonly associated with an increased incidence of back pain in women. The exact reason for this is unknown. It may be a hormonal effect or a lack of a hormonal effect on the inflammatory chemicals in the female body that causes the incidence of lower back pain.

Migraine headaches with an aura occur more frequently in women, whereas migraine headaches without an aura occur more frequently in men. Cluster headaches and post-traumatic headaches occur more frequently in men. Chronic muscle tension headaches are more prevalent in women (Cairns, 2007). Headaches arising from degeneration of the neck or muscle spasms of the neck are more common in women.

Ankylosing spondylitis will become manifest in a male around age 20. Gout is more common in men than in women.

Disease patterns in rheumatoid arthritis (RA) vary between the sexes; RA is more common in women, with more aggressive disease and poorer long-term outcomes (Da Silva & Hall, 1992). Sex hormones may play a role: A premenopausal woman could develop RA if she has low levels of DHEA as well as testosterone. Androgens are of some benefit in preventing disease progression, and postmenopausal women have high levels of both testosterone and DHEA. Men with RA usually have low testosterone levels. In addition, a history of smoking is associated with an increased risk for the development of rheumatoid arthritis in men but not in women.

Carpal tunnel syndrome (CTS), compression of the median nerve, is a common neuropathy. It affects women more than men, with average age of the onset between 40 and 60 years of age. CTS patients are known to show gender-related differences in severity as well (Mondelli et al., 2005). Autonomic distur-

There are notable sex differences in the incidence and manifestations of virtually all central nervous system disorders.
bances are common (55%) in CTS, occurring with increasing severity of electrophysiologic findings (Verghese, Galanopoulou, & Herskovitz, 2000).

Fibromyalgia (FM) is a chronic pain syndrome that affects soft tissue, tendons, and fascia (Yoshida, 2000). It affects about 5 percent of the population, 90 percent of which are women of childbearing age. Male patients with FM had fever symptoms and fewer trigger points, and less commonly report "hurt all over," fatigue, morning fatigue, and IBS compared with female patients (Yunus, Inanici, Aldag, & Mangold, 2000).

Myofascial trigger points occur when there is trauma to a muscle or prolonged tension to a muscle from faulty posture. It appears that men with FM have more acute myofascial pain, and women suffer more from latent myofascial pain syndromes. Latent myofascial trigger points are more prevalent in women who do not participate in active aerobic exercise. On the other hand, active trigger points are more prevalent in men who exercise vigorously or who do heavy manual labor.

Temporomandibular joint (TMJ) dysfunction prevalence peaks between the ages of 25 and 44. TMJ pain is less in men than women, and testosterone reduces TMJ pain at supraphysiological serum levels (Fischer, Clemente, & Tambeli, 2007).

Female gender is associated with about a 40% lower rate of myocardial infarction (Cunningham et al., 1989). Hypoandrogenemia in men and hyperandrogenemia in women are associated with increased risk of coronary artery disease (Eckardstein & Wu, 2003). Numbness and pain radiating from the chest into the left arm is especially characteristic of anginal pain in men. In women with coronary insufficiency, symptoms of angina pain include pressure in the center of the chest accompanied by pain in the neck or arms.

The distribution of complex regional pain syndrome (CRPS) between men and women is almost equal for individuals younger than 50 years of age. However, for those over 50 years of age women predominate (de Mos, Huygen, Stricker, Dieleman, & Sturkenboom, 2009). CRPS usually develops after a noxious event, but spontaneous onsets mostly in females have been described in 3-11% of the cases (de Rooij et al.).

Women are five times more likely than men to develop primary Raynaud's disease. Most patients develop Raynaud's disease before age 40. Estrogen-

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induced effects on sympathetic postganglionic neu-
rons have been implicated in the vasomotor abnor-
malities in patients with Raynaud’s phenomena
(Levine & Taiwo, 1989).

Conclusion
One may conclude that gender can have a significant
effect on chronic pain epidemiology as well as
pharmacologic management. Additional research is
needed to clarify the mechanisms for sex differences
in pain as well as responses to pain treatments and to
develop new treatment modalities that improve pain
management for both men and women. The “one
size fits all” pain treatment mentality is no longer
acceptable.

References
Berry, C., Ley, E. J., Tillou, A., Cryer, G., Margulies, D. R., &
to severe head injuries. J Trauma, 67(5), 950-953.
flammation. Urology, 57(6 Suppl 1), 40-46.
Blacklock, A. D., Johnson, M. S., Krizsan-Agbas, D., & Smith,
P. G. (2005). Estrogen increases sensory nociceptor neurito-
genesis in vitro by a direct, nerve growth factor-independent
mechanism. Eur J Neurosci, 21(9), 2320-2328.
jection of morphine into the rostral ventromedial medulla pro-
duces greater antinociception in male compared to female rats.
Brain Res, 796(1-2), 315-318.
on craniofacial nociception. Headache, 47(2), 319-324.
132 Suppl 1, S3-12.
Cunningham, M. A., Lee, T. H., Cook, E. F., Brand, D. A.,
Rouan, G. W., Weisberg, M. C., et al. (1989). The effect of
gender on the probability of myocardial infarction among
emergency department patients with acute chest pain: a report
from the Multicenter Chest Pain Study Group. J Gen Intern
sex hormones on outcome in rheumatoid arthritis. Baillieres
Clin Rheumatol, 6(1), 196-219.
pilot study of testosterone patch therapy in men with opioid-
de Mos, M., Huygen, F. J., Stricker, B. H., Dieleman, J. P., &
Sturkenboom, M. C. (2009). Estrogens and the risk of complex
regional pain syndrome (CRPS). Pharmacoepidemiol Drug Saf,
18(1), 44-52.
de Rooij, A. M., Perez, R. S., Huygen, F. J., van Eijs, F., van
Kleef, M., Bauer, M. C., et al. Spontaneous onset of complex
Dolan, S., Wilkie, S., Aliabadi, N., Sullivan, M. P., Basg ozone, N.,
Davis, B., et al. (2004). Effects of testosterone administration in
human immunodeficiency virus-infected women with low
weight: a randomized placebo-controlled study. Arch Intern
Med, 164(8), 897-904.
Eckardstein, A., & Wu, F. C. (2003). Testosterone and athero-
really are different. Curr Rev Pain, 4(1), 24-30.
Fischer, L., Clemente, J. T., & Tambeli, C. H. (2007). The pro-
tective role of testosterone in the development of temporoman-
Fletcher, C. V., Acosta, E. P., & Strykowski, J. M. (1994). Gen-
der differences in human pharmacokinetics and pharmacody-
Gear, R. W., Gordon, N. C., Heller, P. H., Paul, S., Miaskowski,
C., & Levine, J. D. (1996). Gender difference in analgesic re-
sponse to the kappa-opioid pentazocine. Neurosci Lett, 205(3),
207-209.
Gear, R. W., Miaskowski, C., Gordon, N. C., Paul, S. M.,
Heller, P. H., & Levine, J. D. (1999). The kappa opioid nal-
buphine produces gender- and dose-dependent analgesia and
antianalgesia in patients with postoperative pain. Pain, 83(2),
339-345.
Gillies, G. E., & McArthur, S. Estrogen actions in the brain and
the basis for differential action in men and women: a case for
Knol, S. A., & Stuifbergen, A. C. (2007). The protective role of
Levine, J. D., & Taiwo, B. (1989). The effect of gender and
sex hormones on outcome in rheumatoid arthritis. Baillieres
Clin Rheumatol, 6(1), 196-219.


Neuropathic Pain: Assessment and Pharmacologic Management

Chris Pasero MS RN-BC FAAN

Abstract: Neuropathic pain arises from a lesion or dysfunction of the peripheral or central nervous systems or both. When unrelieved, it can produce significant adverse physical, emotional, social, and financial consequences. Assessment relies on the patient’s report of characteristic descriptors, such as “sharp,” “shooting,” “electric,” and “numbness.” Treatment of neuropathic pain is labor-intensive and may take several weeks of analgesic trials. A multimodal approach is recommended, and the first-line analgesics are antidepressants (TCAs, SNRIs) and anticonvulsants (gabapentin, pregabalin) for generalized pain and the lidocaine patch 5% for some well-localized neuropathic pain syndromes.

Keywords: adjuvant analgesic, breakthrough pain, neuropathic pain, nociceptive pain, noxious stimuli, self-report

The prevalence of neuropathic pain is unknown (Haanpaa & Treede, 2010); however, it is projected to increase as the prevalence of some disease states that are associated with neuropathic pain increases (Wild, Roglic, Green, Sicree, & King, 2004). Survey research has provided a glimpse into the significant physical, emotional, social, and economic burden this type of pain has on the individual sufferer (Davies, Brophy, Williams, & Taylor, 2006). Among other adverse effects, people with neuropathic pain have more medical co-morbidities, adverse social consequences, and impaired health-related quality of life than those who do not (Jensen, Chodroff, & Dworkin, 2007; McDermott, Toelle, Rowbotham, Schaefer, & Dukes, 2006; O’Connor, 2009).

Classification of Pain

Pain most often is categorized generally as being acute or chronic (persistent) (Pasero & Portenoy, 2011). Acute pain differs from chronic pain primarily in how long it lasts. Tissue damage as a result of surgery, trauma, or burns produces acute pain, which is expected to have a relatively short duration and resolve with normal healing. Chronic pain is usually categorized as being of cancer or non-cancer origin and can be of short duration or persist throughout the course of a person’s life. Examples of non-cancer pain include postherpetic neuralgia as a result of the shingles virus, persistent back or neck pain after injury, and osteoarthritis pain from joint degeneration. Some patients have continuous chronic pain and also experience acute exacerbations of pain periodically (called breakthrough pain) or endure acute pain from repetitive painful procedures during management of disease processes (McCaffery, Herr, & Pasero, 2011).

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Pain is increasingly classified by its inferred pathology as being either nociceptive pain or neuropathic pain (Table 1).

*Nociceptive pain* refers to the normal functioning of physiologic systems that leads to the perception of noxious stimuli (tissue injury) as being painful (Pasero & Portenoy, 2011). Pain from surgery, trauma, burns, and tumor growth are examples of nociceptive pain.

*Neuropathic pain* is pathologic and results from abnormal processing of sensory input by the nervous system as a result of damage to the peripheral or central nervous system or both (Pasero & Portenoy, 2011). The International Association for the Study of Pain (2010) more specifically defines it as “pain arising as a direct consequence of a lesion or disease affecting the somatosensory system” (Treede, et al., 2008). The etiologies of neuropathic pain are numerous and include trauma, ischemia, neurotoxicity, neurodegeneration, metabolic abnormalities, vitamin deficiency, and cancer (Haanpaa & Treede, 2010). Phantom limb pain, postherpetic neuralgia, diabetic neuropathy, complex regional pain syndrome, and poststroke pain syndrome are among the many neuropathic pain syndromes.

Some patients have a combination of nociceptive and neuropathic pain. For example, a patient may have nociceptive pain as a result of tumor growth and also report radiating sharp and shooting neuropathic pain if the tumor is pressing against a nerve plexus.

**Assessment of Neuropathic Pain**

The American Pain Society (APS) (2008) defines pain as “*an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage*” (p. 1). This definition describes pain as a complex phenomenon that can impact a person’s psychosocial, emotional, and physical functioning. The clinical definition of pain reinforces that pain is a highly personal and subjective experience: “*Pain is whatever the experiencing person says it is, existing whenever he says it does*” (McCaffery, 1968, page 8). Regardless of the type of pain, all accepted guidelines consider the patient’s report to be the most reliable indicator of pain and the gold standard of pain assessment (APS, 2008; McCaffery, et al., 2011).

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### Categories and Examples

#### A. Somatic Pain
- Arises from bone joint, muscle, skin, or connective tissue. It is usually described as aching or throbbing in quality and is well localized.
- **Examples:** Surgical, trauma; wound, and burn pain; cancer pain (tumor growth) and pain associated with bony metastases; labor pain (cervical changes and uterine contractions); osteoarthritis and rheumatoid arthritis pain; osteoporosis pain; pain of Ehlers-Danlos Syndrome; ankylosing spondylitis.

#### B. Visceral Pain
- Arises from visceral organs, such as the GI tract and pancreas. This may be subdivided:
  1. Tumor involvement of the organ capsule that causes aching and fairly well-localized pain.
  2. Obstruction of hollow viscus, which causes intermittent cramping and poorly localized pain.
- **Examples:** Organ-involved cancer pain; ulcerative colitis; irritable bowel syndrome; Crohn’s disease; pancreatitis.

### Physiologic Processes

<table>
<thead>
<tr>
<th>Nociceptive Pain</th>
<th>Neuropathic Pain</th>
<th>Mixed Pain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal processing of stimuli that damages tissues or has the potential to do so if prolonged; is somatic or visceral.</td>
<td>Abnormal processing of sensory input by the peripheral or central nervous system or both.</td>
<td>Components of both nociceptive and neuropathic pain; poorly defined.</td>
</tr>
</tbody>
</table>

### Pharmacologic Treatment

<table>
<thead>
<tr>
<th>Nociceptive Pain</th>
<th>Neuropathic Pain</th>
<th>Mixed Pain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most responsive to non-opioids, opioids, and local anesthetics.</td>
<td>Adjuvant analgesics, such as antidepressants, anticonvulsants, and local anesthetics, but there is a wide variability in terms of efficacy and adverse-effect profiles.</td>
<td>Adjuvant analgesics, such as antidepressants, anticonvulsants, and local anesthetics, but there is a wide variability in terms of efficacy and adverse-effect profiles.</td>
</tr>
</tbody>
</table>

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No identified categories

**Examples:** Fibromyalgia; some types of neck, shoulder, and back pain; some headaches; pain associated with HIV; some myofascial pain; pain associated with Lyme disease.

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*Table 1 Classification of Pain by Inferred Pathology Copyright 1999, Pasero C, McCaffery M. Used with permission.*

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A comprehensive pain assessment should be conducted during the initial interview with the patient, with each new report of pain, and whenever indicated by changes in the patient’s condition or treatment plan during the course of care. In the outpatient setting, pain assessment is conducted with every patient visit.

The initial pain assessment serves as the foundation for developing and evaluating the effectiveness of the pain treatment plan and is obtained from the patient’s report whenever possible. Although practice varies, the components of a comprehensive pain assessment usually include location, intensity, quality (characteristics), onset, duration, aggravating and relieving factors, and how the pain impacts function or quality of life. Other important information to obtain during the initial interview is the patient’s culture and past experiences with pain, and pertinent medical history such as current prescription and non-prescription medication use, co-morbidities, laboratory tests, and diagnostic studies.

Patients are asked to rate the intensity of their pain using reliable and valid pain assessment scales as a method of communicating the effectiveness of the treatment plan. Pain ratings provide a starting point and allow the team to evaluate whether pain-relieving interventions are working and if adjustments need to be made. A variety of pain rating scales in several language translations have been evaluated and made available for use in clinical practice (McCaffery, et al., 2011). The most common self-report pain intensity rating scales are shown in Table 2.

### Table 2  Commonly Used Self-report Pain Intensity Rating Scales  McCaffery, Herr, & Pasero (2011)

- **Numeric Rating Scale (NRS):** The NRS is most often presented as a horizontal 0-to-10 point scale, with word anchors of “no pain” at one end of the scale, “moderate pain” in the middle of the scale, and “worst possible pain” at the end of the scale.
- **Wong-Baker FACES Pain Rating Scale:** The FACES scale consists of 6 cartoon faces with word descriptors, ranging from a smiling face on the left for “no pain (or hurt)” to a frowning, tearful face on the right for “worst pain (or hurt)”. Patients are asked to choose the face that best reflects the intensity of the pain. It is important to appreciate that faces scales are self-report tools; clinicians should not attempt to match a face shown on a scale to the patient’s facial expression to determine pain intensity.
- **Faces Pain Scale-Revised (FPS-R):** The FPS-R has 7 faces to make it consistent with other scales using the 0 – 10 metric. The faces range from a neutral facial expression to one of intense pain and are numbered 0, 2, 4, 6, 8, and 10. As with the Wong-Baker FACES scale, patients are asked to choose the face that best reflects their pain intensity.
- **Verbal Descriptor Scales (VDS):** A VDS uses different words or phrases to describe the intensity of pain, such as “no pain, mild pain, moderate pain, severe pain very severe pain, and worst possible pain”. The patient is asked to select the phrase that best describes the pain intensity.
- **Visual Analog Scale (VAS):** The VAS is a horizontal (sometimes vertical) 10 cm line with word anchors at the extremes, such as “no pain” on one end and “pain as bad as it could be” or “worst possible pain” on the other end. Patients are asked to make a mark on the line to indicate intensity of pain, and the length of the mark from “no pain” is measured and recorded in centimeters or millimeters. Although often used in research, the VAS is impractical for daily clinical practice and rarely used in that setting.

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Asking patients to describe the pain is particularly important when identifying and evaluating neuropathic pain. Although diagnostic tests, such as neuroimaging, may be conducted to facilitate the identification of painful pathology, the presence of sensory descriptions is key to the diagnosis and treatment of neuropathic pain (Haanpaa & Treede, 2010). Patients describe this type of pain with distinctive words, such as “burning,” “shooting,” “numbness,” and “tingling.” The process of obtaining and evaluating descriptors is facilitated by the use of simple assessment tools. The Screening Tool for Neuropathic Pain: ID Pain asks the patient to respond “yes” or “no” to questions about various descriptors, such as “Did the pain feel hot/burning?” (Portenoy, 2006) The Neuropathic Pain Scale (NPS) asks the patient to rate on a scale of 0 to 10 the intensity of various common neuropathic descriptors, such as “sharp,” “hot,” and “sensitive” (Galer & Jensen, 1997). The NPS also helps the clinician to identify the presence of breakthrough pain and time qualities of the pain. Examples of these tools are provided elsewhere (McCaffery, et al., 2011).

The effect of pain on the patient’s ability to perform recovery activities should be regularly evaluated in the patients with pain. It is particularly important to ask patients with persistent pain about how pain has affected their lives, what they could do before the pain began that they can no longer do, or what they want to do but cannot do because of the pain. Patients can be asked to identify their unique functional or quality of life goals, such as being able to work or walk the dog, then to use a pain-intensity scale to identify a level of pain that will allow accomplishment of the functional goals with reasonable ease. A realistic level for most patients is 2 or 3 of 10. Pain intensities that consistently interfere with achievement of functional goals warrants further evaluation and consideration of an intervention and possible adjustment of the treatment plan (McCaffery, et al., 2011).

Pharmacological Management of Neuropathic Pain
As noted, neuropathic pain is a complex phenomenon involving multiple underlying mechanisms and as such, requires more than one analgesic to manage it safely and effectively (Pasero, Quinn, Portenoy, McCaffery, & Rizos, 2011). The recommended approach for the treatment of all types of pain is called multimodal analgesia (Dworkin, et al., 2010; Pasero, Quinn, et al., 2011). A multimodal regimen combines drugs with different underlying mechanisms, which allows lower doses of each of the drugs in the treatment plan, reducing the potential for each to produce adverse effects. Further, multimodal analgesia can result in comparable or greater pain relief than can be achieved with any single analgesic (Pasero, Quinn, et al., 2011).

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Safe and effective use of analgesics requires the development of an individualized treatment plan based on a comprehensive pain assessment, which includes clarifying the goals of analgesic treatment and discussing options with the patient and family (Pasero, Quinn, et al., 2011). Goals are periodically re-evaluated and changes made depending on patient response.

Many factors are considered when determining the appropriate analgesic for the patient with neuropathic pain. These include the unique characteristics of the various analgesics as well as several patient factors, such as pain intensity, age, coexisting disease, current drug regimen and potential drug interactions, prior treatment outcomes, and patient preference. Titration of the analgesic dose is usually required at the start and at intervals during treatment until a balance between pain relief and adverse effects is achieved. The goal of titration is to use the smallest dose that provides satisfactory pain relief with the fewest adverse effects.

**Routes of Administration**

The primary routes by which medications are administered for the treatment of neuropathic pain are oral and topical. More invasive routes of administration, such as intravenous and intraspinal, are usually reserved for treatment of refractory pain or episodes of severe acute exacerbation.

The first-line anticonvulsant and antidepressant analgesics are available in oral formulation. Opioids, which are second-line analgesics for neuropathic pain, are also available in numerous oral formulations. The topical lidocaine patch 5% is often used for well-localized types of neuropathic pain, such as post-herpetic neuralgia.

It is important to distinguish between topical and transdermal drug delivery. Although both routes require the drug to cross the stratum corneum to produce analgesia, transdermal drug delivery (e.g., transdermal fentanyl patch) requires absorption into the systemic circulation to achieve effects; topical agents (e.g., lidocaine patch 5%) produce effects in the tissues immediately under the site of application (“targeted peripheral analgesia”) (Pasero, Polomano, Portenoy, & McCaffery, 2011).

**Around-the-Clock Dosing**

Two basic principles of providing effective pain management are preventing pain and maintaining a pain intensity that allows the patient to accomplish

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*continued next page*
functional or quality of life goals with relative ease (Pasero, Quinn, et al., 2011). Accomplishing these goals usually requires the mainstay analgesic to be taken on a scheduled around-the-clock (ATC) basis, rather than PRN (“as needed”) to maintain stable analgesic blood levels. ATC dosing regimens are designed to control pain for patients who report pain being present 12 hours or more during a 24-hour period. PRN dosing of analgesics is appropriate for intermittent pain, such as for breakthrough pain, for which supplemental doses of analgesia are provided (Pasero, Quinn, et al., 2011).

The Three Analgesic Groups
There are three main analgesic groups:
- nonopioid analgesics, which include acetaminophen and the nonsteroidal antiinflammatory drugs (NSAIDs)
- opioid analgesics, which include morphine, hydromorphone, fentanyl, oxycodone, and methadone;
- adjuvant analgesics (sometimes referred to as co-analgesics)

The first-line analgesics for the treatment of neuropathic pain are some antidepressants, anticonvulsants, and local anesthetics, all of which belong to the adjuvant analgesic group. An overview of these analgesics followed by a discussion of the role of opioid and nonopioid analgesics in the treatment of neuropathic pain is presented here.

Adjuvant analgesics The adjuvant analgesic group is the largest analgesic group and includes a variety of agents with unique and widely differing mechanisms of action. This diversity provides many options for treatment of neuropathic pain (Table 3).

Table 3. First-line Analgesics for Neuropathic Pain

<table>
<thead>
<tr>
<th>Analgesic</th>
<th>Starting Dose</th>
<th>Titration</th>
<th>Maximum Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCAs: Nortriptyline, desipramine</td>
<td>25 mg at bedtime</td>
<td>Increase by 25 mg/day every 3-7 days as tolerated</td>
<td>150 mg/day</td>
</tr>
<tr>
<td>SNRI: Duloxetine</td>
<td>30 mg once daily</td>
<td>Increase to 60 mg once daily after 1 week</td>
<td>60 mg twice daily</td>
</tr>
<tr>
<td>SNRI: Venlafaxine</td>
<td>37.5 mg once or twice daily</td>
<td>Increase by 75 mg each week</td>
<td>225 mg/day</td>
</tr>
<tr>
<td>Gabapentin</td>
<td>100-300 mg at bedtime or 100-300 mg 3 times daily</td>
<td>Increase by 100-300 mg 3 times daily every 1-7 days as tolerated</td>
<td>3600 mg/day (1200 mg 3 times daily)</td>
</tr>
<tr>
<td>Pregabalin</td>
<td>50 mg 3 times daily or 75 mg twice daily as tolerated</td>
<td>Increase to 300 mg/day after 3-7 days, then by 150 mg/day every 3-7 days as tolerated</td>
<td>600 mg/day (200 mg 3 times or 300 mg twice daily)</td>
</tr>
<tr>
<td>Topical lidocaine 5% patch</td>
<td>Up to 3 patches daily for 12 hours</td>
<td>None needed</td>
<td>3 patches daily for 12 hours</td>
</tr>
</tbody>
</table>

SNRI, serotonin norepinephrine reuptake inhibitor; TCA, tricyclic antidepressant

1 The analgesics in this table usually require a trial of 3 to 8 weeks to determine efficacy.
2 Reduce dose if impaired renal function.
3 Up to 4 patches worn continuously has been shown to be safe.

References: Dworkin et al. 2010, Pasero et al., 2011
Drug selection and dosing is based on both clinician experience and evidence-based guideline recommendations (Dworkin, et al., 2010). There is wide variability among individuals in their response to adjuvant analgesics, including to agents within the same class. Thus a “trial and error” strategy is used in the outpatient setting, beginning with low initial doses and gradual dose escalation to allow tolerance to adverse effects. Patients must be told that onset of analgesia is likely to be delayed and that more than one analgesic (multimodal analgesia) may be required to optimize pain control (Pasero, Polomano, et al., 2011). Further, it is important to recognize that patients may be confused to learn that drugs, such as antidepressants and anticonvulsants, will be used to treat their pain. Explaining that many of the drugs that are commonly used to treat other conditions (e.g., depression and seizure disorders) have been found to be analgesic for some painful conditions helps ensure the patient’s understanding and adherence to the treatment plan (Pasero, Polomano, et al., 2011).

**Antidepressants** Antidepressant adjuvant analgesics are divided into two major groups: tricyclic antidepressants (TCAs) and the newer serotonin and norepinephrine reuptake inhibitors (SNRIs) (Table 3). Evidence-based guidelines recommend the secondary-amine TCAs desipramine (Norpramin) and nortriptyline (Aventyl, Pamelor) and the SNRIs duloxetine (Cymbalta) and venlafaxine (Effexor) as first-line options for neuropathic pain treatment (Dworkin, et al., 2010). Because of a high incidence of adverse effects, the tertiary-amine amitriptyline (Elavil), which has been used for many years for treatment of neuropathic pain, is recommended only if a secondary-amine is unavailable (Dworkin, et al., 2010). Analgesic antidepressant therapy is initiated with low doses and titrated according to patient response.

The primary adverse effects of TCAs are dry mouth, sedation, dizziness, mental clouding, weight gain, and constipation (Pasero, Polomano, et al., 2011). Orthostatic hypotension is a potentially serious TCA adverse effect. The most serious adverse effect is cardiotoxicity, and patients with significant heart disease are at particularly high risk for this. The SNRIs are thought to have a more favorable adverse effect profile and to be better tolerated than the TCAs (Pasero, Polomano, et al., 2011). The most common SNRI adverse effects are nausea, headache,

*continued next page*
sedation, insomnia, weight gain, impaired memory, sweating, and tremors.

**Anticonvulsants** Current neuropathic pain treatment guidelines recommend the anticonvulsants gabapentin (Neurontin) and pregabalin (Lyrica) as first-line analgesics for neuropathic pain (Dworkin, et al., 2010) (Table 3). Although further research is needed, adding anticonvulsants to multimodal postoperative pain treatment plans has been shown to improve analgesia and help prevent persistent neuropathic postsurgical pain syndromes, such as phantom limb, post-thoracotomy, and post-mastectomy pain (Dauri, et al., 2009). They are also effective in reducing the potential for chronic neuropathic pain following burn injury (Gray, et al., 2011). Analgesic anticonvulsant therapy is initiated with low doses and titrated according to patient response. Primary adverse effects of anticonvulsants are sedation and dizziness, which are usually transient and most notable during the titration phase of treatment.

**Lidocaine patch 5%** Local anesthetics have a long history of safe and effective use for the treatment of all types of pain. They are given by a variety of routes of administration and are generally well tolerated by most individuals (Pasero, Polomano, et al., 2011). The lidocaine patch 5% (Lidoderm) is 10 cm by 14 cm and contains 700 mg of lidocaine. The patch is placed directly over or adjacent to the painful area for absorption into the tissues directly below. It is left in place for 12 hours, then removed for 12 hours (12 hours on, 12 hours off regimen). This application process is repeated as needed for continuous analgesia (Table 3). The drug is approved for the neuropathic pain syndrome post-herpetic neuralgia, but research has shown it to be effective and safe for a wide variety of acute and chronic pain conditions (Pasero, Polomano, et al., 2011).

Allergy to local anesthetics is rare, and adverse effects are dose-related. The lidocaine patch 5% produces minimal systemic absorption and thus few adverse effects. Should they occur, central nervous system signs of systemic local anesthetic toxicity include ringing in the ears, metallic taste, irritability, and seizures. Signs of cardiotoxicity include circumoral tingling and numbness, bradycardia, cardiac dysrhythmias, and cardiovascular collapse (Pasero, Polomano, et al., 2011).

**Opioid analgesics**

The opioid analgesics are considered second-line analgesics for neuropathic pain (Dworkin, et al., 2010). Among the most commonly used are morphine, oxycodone, and increasingly methadone.

**Methadone** (Dolophine) is a unique opioid analgesic that may have advantages over other opioids in carefully selected patients. In addition to being a mu opioid (binds primarily to the mu-type opioid receptor), it is an antagonist at the N-methyl-D-aspartate (NMDA) receptor site and thus has the potential to

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produce analgesic effects as a second-line option for some neuropathic pain states (Dworkin, et al., 2010). It is often used as an alternative when it is necessary to switch a patient to a new opioid or other analgesic because of inadequate analgesia or unacceptable adverse effects. The use of conventional equianalgesic dose conversion is not recommended when switching patients to and from methadone. Extensive guidelines on how to safely accomplish this are available elsewhere (Pasero, Quinn, et al., 2011).

Methadone usually is administered orally but has also been given by virtually every route. Although it has no active metabolites, methadone has a very long and highly variable half-life (5 to 100+ hours; average is 20 hours). This impacts clinical management during titration for pain management; patients must be watched closely for excessive sedation, a sign of drug accumulation during this time period. (The drug is described as “long-acting” because of its exceptionally long half-life.) Other limitations are its propensity to interact with a large number of medications and prolong QTc interval. Baseline and periodic EKGs during treatment are recommended (Pasero, Quinn, et al., 2011). Despite these characteristics, methadone can be an effective and safe drug when prescribed by practitioners who have an appreciation of its characteristics and experience in its use (Pasero, Quinn, et al., 2011).

**Tramadol** (Ultram) is classified as a dual-mechanism analgesic because it binds weakly to the mu opioid receptor site and blocks the reuptake (resorption) of the inhibitory neurotransmitters serotonin and norepinephrine at central synapses in the spinal cord and brainstem of the modulatory pain pathway (Pasero & Portenoy, 2011). It is discussed here because of its opioid-binding capability. Tramadol’s dual mechanism of action provides automatic “built-in” multimodal analgesia, because a single tablet produces an effect on more than one analgesic action site.

Tramadol is available in oral short-acting and modified-release (Ultram ER) formulations, including a short-acting tablet in combination with acetaminophen (Ultracef). Adverse effects are similar to opioids. The drug can lower seizure threshold and interact with other drugs that block the reuptake of serotonin, such as the SNRIs and SSRIs, although serotonin syndrome, characterized by agitation, diarrhea, heart and blood pressure changes, and loss of coordination, appears to be a rare problem in the

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clinical setting (Dworkin, et al., 2010). Dose should be decreased (300 mg/day) in older patients and those with renal or hepatic dysfunction because of a propensity for drug accumulation (Dworkin, et al., 2010).

**Adverse effects of opioid analgesics** The most common adverse effects of opioid analgesics are constipation, nausea, vomiting, pruritus, and sedation (Pasero, Quinn, et al., 2011). Respiratory depression is less common but the most feared of the opioid adverse effects (Pasero, 2009). As patients become opioid tolerant, tolerance to the opioid adverse effects (except constipation) develops. It is reassuring for patients receiving long-term opioid therapy to know that most of the adverse effects will subside with regular daily doses over several days.

Constipation is perhaps the most concerning adverse effect in the outpatient setting when opioids are used for the treatment of neuropathic pain. Opioids can result in delayed gastric emptying, slowed bowel motility, and decreased peristalsis, all of which result in slow-moving, hard stool that is difficult to pass. Risk is elevated with opioid use, advanced age, and immobility, but it is an almost universal opioid adverse effect (i.e., tolerance rarely develops) (Pasero, Quinn, et al., 2011). Constipation is a primary reason people stop taking pain medication. This underscores the importance of a preventive approach and aggressive management if symptoms are detected. Prevention includes reminding patients to take a daily stool softener plus mild peristaltic stimulant, such as senna, for as long as they are taking an opioid (Pasero, Quinn, et al., 2011).

**Nonopioid analgesics**

Acetaminophen and NSAIDs comprise the nonopioid analgesic group. As flexible analgesics, they are used for a wide variety of painful conditions. They are appropriate alone for mild to some moderate nociceptive pain (e.g., from surgery, trauma, or osteoarthritis) and are added to opioids, local anesthetics, and anticonvulsants as part of a multimodal analgesic regimen for more severe nociceptive pain (Pasero, Quinn, et al., 2011).

Although commonly used and effective for nociceptive pain, nonopioid analgesics are the least effective for neuropathic pain.

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drocodone (e.g., Vicodin, Lortab), and are very popular for the treatment of mild-to-moderate persistent neuropathic pain. However, it is important to remember that these combination drugs are not appropriate for severe pain of any type because the maximum daily dose of the nonopioid limits the escalation of the opioid dose (Pasero, Quinn, Portenoy, et al., 2011). The NSAID diclofenac is available in gel (Voltaren gel) and patch (Flector) formulations, which may be effective for well-localized neuropathic pain that has an inflammatory component.

References


Interventional Techniques for Chronic Pain

Gokul Toshiwal MD, Zirong Zhao MD, Doris K. Cope MD

This article focuses on interventional techniques and their role in management of chronic pain.

Chronic pain is defined as any pain lasting for more than three to six months. Prevalence of chronic pain in the American population is more than the combined prevalence of diabetes, heart disease and cancer (Hardt et al., 2008). Millions of people suffer from chronic pain every year; pain exacts tremendous costs on our country for health care, rehabilitation, lost work productivity, and the emotional and financial burden it places on patients and their families. The goal of any treatment protocol in management of chronic pain is not only to decrease pain but also to improve functional status. Care is often long-term with frequent reassessment and therapy adjustment.

Management involves a multidisciplinary integrated approach including medication, physical therapy, behavioral therapy, and vocational evaluation and training. Since medication use can be limited by side effects, interventional techniques are a necessary part of any multidisciplinary approach.

Interventional techniques include trigger point injections and implantable devices, such as spinal cord stimulators or intrathecal drug delivery systems. Interventional techniques play an important role in avoiding side effects, thus decreasing medication requirements. Singly or in combination with other options, they can be quite effective in pain control and increase the chances of returning patients to active life.

Physiological Basis for Interventional Management for Chronic Pain

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.

- International Association for the Study of Pain

Pain signals are transmitted from a peripheral site, or site of injury, to the cortex in a very complex...
manner involving several orders of neuronal connectivity and several pain modulating pathways. Trigger point injections, nerve blocks, sympathetic blocks, epidural steroid injections, spinal cord stimulators, and intrathecal therapies target different steps of the pain pathways.

- **Trigger point injections** decrease the transduction of the painful signals by the A-delta mechanothermal and C-polymodal nociceptors.
- **Regional nerve blocks**, radiofrequency ablation or sympathetic blocks decrease transmission of painful signals through the primary afferent neurons.
- **Epidural steroid injections** mainly decrease inflammatory responses that cause nerve irritation.
- **The spinal cord stimulator** modulates the painful signal at the dorsal column of the spinal cord.
- **Epidural/intrathecal drug delivery systems** are used in chronic pain to deliver analgesic medication directly to the subarachnoid space. Drugs administered by this route inhibit the painful signals or modulate the painful signals by acting directly at the spinal cord and cortical level.

**Interventional Techniques**

**Trigger point injections** A myofascial trigger point is “a cluster of electrically active loci, each of which is associated with a contraction knot and a dysfunctional motor endplate in skeletal muscle” (Simons, Travell, and Simons 1999). Trigger points usually affect postural and masticatory muscles and present as poorly-localized muscular pain or headache. They can be active or latent. Latent trigger points affect almost half of the population by adulthood. These are activated by sudden overloading contraction, viral infection, cold, fatigue, or increased emotional stress. Local anesthetic injection into these trigger points has been shown to decrease pain in clinical conditions like chronic headaches, myofascial pain syndrome, and fibromyalgia (Hong and Hsueh 1996). The possible complications from these injections are local site infection, hematoma formation or sometimes increase in pain.

**Somatic nerve blocks** Somatic nerve blocks are used in managing pain for both acute and chronic painful conditions. The somatic nerve to be blocked depends on the site involved and the type of chronic pain syndrome. Table 1 (next page) shows the list of somatic nerve blocks that are shown to be effective in managing pain particular chronic pain syndromes. Specific complications related to these blocks are permanent peripheral nerve damage and inadvertent intravascular injection of the local anesthetics.

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### Table 1. Somatic nerve blocks for selected pain syndromes

<table>
<thead>
<tr>
<th>Peripheral nerve</th>
<th>Chronic pain syndromes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater occipital nerve</td>
<td>Greater occipital nerve</td>
</tr>
<tr>
<td>Supra orbital nerve</td>
<td>Supra orbital nerve</td>
</tr>
<tr>
<td>Infra-orbital nerve</td>
<td>Infra-orbital nerve</td>
</tr>
<tr>
<td>Intercostal nerve</td>
<td>Post-herpetic neuralgia</td>
</tr>
<tr>
<td>Gasserian ganglion</td>
<td>Trigeminal neuralgia</td>
</tr>
<tr>
<td>Mandibular/maxillary nerve</td>
<td></td>
</tr>
<tr>
<td>Upper or lower extremity nerve and plexus (brachial/lumbar plexus, individual nerves)</td>
<td>Compartment pain syndrome. (e.g., carpal tunnel syndrome)</td>
</tr>
<tr>
<td>Ilio-inguinal / Ilio-hypogastric nerve</td>
<td>Complex Regional Pain Syndrome (CRPS)</td>
</tr>
<tr>
<td>Transversus Abdominis Plane block</td>
<td>Chronic abdominal pain</td>
</tr>
</tbody>
</table>

**Sympathetic nerve blocks** Sympathetic nervous system hyperactivity can cause painful conditions, e.g., complex regional pain syndrome (CRPS). Some pain fibers also traverse the sympathetic tract to the spinal cord. **Table 2 (next page)** lists common indications for different sympathetic blocks and their possible complications.

**Epidural steroid injections** Epidural steroid injections have modest benefit in neck, low back pain, and radicular pain (Benoist, Boulu, and Hayem 2011). Epidural steroids decrease nerve root inflammation and irritation caused by a herniated disc or inflamed synovial facet joint. Most studies suggest modest benefits for variable periods of two weeks to perhaps three months. The short-term benefit from epidural steroid injections and the natural history of radicular pain may complement each other in regard to patient clinical improvement.

Epidural steroid injections can be done via an interlaminar, transforaminal, or caudal approach. In clinical practice, technique preference is based on patient characteristics and clinical presentation. However, each technique has its unique risks and there are no head-to-head comparison studies. Interlaminar injection carries a risk for dural puncture and post-dural puncture headaches. Transforaminal injection is preferred if the patient has more radicular symptoms concordant with MRI findings, but carries greater risk of nerve damage. The caudal approach is preferred in persons with past history of back surgery.

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Radio-frequency ablation (RFA) or neurolytic nerve blocks  Neurolytic blockade and RFA are valuable tools designed to produce prolonged interruption of neural transmission. The common rationale for neurolytic block, prolonged relief of intractable pain, is used most often in patients with malignancy. Its role in non-malignant conditions is not clear and is individualized on case-to-case basis.

RFA uses high frequency current (pulsed or ablative) to modulate the neural transmission. Clinically, it is most commonly used for cervical or lumbar facet pain (Dreyfuss et al. 2000) and trigeminal neuralgia (Taha and Tew Jr. 1996) but can also be used for sympathetic block, occipital neuralgia, and other chronic painful conditions.

Spinal cord stimulators (SCS) and peripheral nerve stimulators  Spinal cord stimulators are effective in radicular and neuropathic pain, e.g., CRPS in extremities. SCS and physical therapy used together improve quality of life and reduce pain in 50% of properly selected patients (North et al. 2005). Compared to conventional pain management, spinal cord stimulators are more cost-effective in long-term management ($29,000 vs. $39,000 respectively over five years) and around 15% of these patients return to employment due to superior pain control and

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lower drug intake (Kumar, Malik, and Demeria 2002). Similarly, peripheral nerve stimulators are effective in patients with neuralgias, e.g., greater occipital or ilio-inguina/iliohypogastric neuralgia (Mobbs, Nair and Blum 2007; Schwedt et al. 2007).

Another advantage of stimulators is that trial lead placement and stimulation make it possible to evaluate pain reduction and functional improvement before proceeding with permanent implant.

Complications specifically related to permanent implants include the risk for infection, epidural hematoma, lead migration and dural puncture.

Epidural and intrathecal drug delivery systems

Pain medications work on the spinal cord. Delivering medications directly adjacent or into the spinal canal decreases the amount needed to produce analgesia and decreases the systemic side effects of high doses of narcotics. There are several newer medications, e.g., zicotinide (Prialt, an NSAID), that are effective for epidural and intrathecal use in conditions resistant to all other pain medications.

Although the initial cost for an implanted intrathecal system is high compared to conventional medical management, intrathecal pump systems are cost-effective for long-term treatment with high doses of narcotics for chronic non-malignant pain. The first-year cost of intrathecal pump is around $16,000 - $20,000 in comparison to $8,000 – $10,000 for conventional medical management (Kumar, Hunter and Demeria 2002). However, over a five-year period, the mean annual cost is about $5000, comparing favorably to $7,500 per year for conventional medical management.

There are two systems commonly used for management of chronic malignant pain: tunneled epidural infusions and implantable intrathecal pumps. Cost comparison shows higher initial cost (for three months) for intrathecal system ($16,000) than the tunneled epidural system ($15,000). However, at six months post implant, the overall cost of the tunneled epidural system becomes higher ($22,000), compared to implanted intrathecal pump ($18,000) (Gerhard, Samuel and Enrique 1999). Therefore, in clinical practice, implantable intrathecal pumps are used if expected life span is greater than six months, and tunneled epidural catheters with portable infusion pump are used if the life expectancy is less than six months. Studies show that life expectancy and quality of life are improved in pa-

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tients with chronic malignant pain who are success-
fully managed with an intrathecal pump.

Possible complications with intrathecal drug delivery
system include local infection, meningitis, CSF se-
roma, catheter granuloma, catheter migration, respir-
atory depression, post-dural puncture headache, and
epidural hematoma.

Summary

Pain procedures are quite safe; large numbers per-
formed in everyday clinical practice. Catastrophic
events such as permanent nerve damage, epidural
hematoma, epidural abscess, and paraplegia, occur
only infrequently.

Even in the era of evidence-based practice, it is diffi-
cult to develop consistent criteria for pain interven-
tion effectiveness. There are only few procedures
with sufficient evidence for use in a particular
chronic pain condition; evidence for many
commonly-performed procedures is not available in
the literature. In practice, pain reduction does not
necessarily translate into improved function and re-
turn to work and activities of daily life. However,
this is not to say that these procedures are not effec-
tive; even when patients are selected by strict criteria
for clinical trials, we often observe a broad spectrum
of response to an intervention.

Therefore, it is imperative to consider risk and bene-
fit of each intervention for each patient, individualiz-
ing the plan of care based on the individual’s comor-
bidity, motivation, and psychology.

References

Benoist M, Boulu P, Hayem G (2011). Epidural steroid injec-
tions in the management of low-back pain with radiculopathy:
an update of their efficacy and safety. Eur Spine J. [Epub ahead
of print].

Dodick DW, Hentz J, Trentman TL and Zimmerman RS
(2007). Occipital nerve stimulation for chronic headache -

Dreyfuss P Halbrook, B, Pauza, K, Joshi, A, McLarty, J, Bog-
duk, N (2000). Efficacy and validity of radiofrequency neu-
rotomy for chronic lumbar zygapophysial joint pain. Spine, 25
(10), 1270-1277.

of intrathecal therapy for pain. Neuromodulation: Technology
at the neural interface, 2 (2), 77–87.

Hardt J, Jacobsen C, Goldberg J, Nickel R, Buchwald D
(2008). Prevalence of chronic pain in a representative sample in

Hong CZ, Hsueh TC 1996. Difference in pain relief after trig-
ger point injections in myofascial pain patients with and with-
out fibromyalgia. Archives of Physical Medicine and Rehabili-
tation, 77 (11), 1161-1166.

Mobbs, RJ, Nair S, Blum P (2007). Peripheral nerve stimula-
tion for the treatment of chronic pain. Journal of Clinical Neu-
roscience, 14 (3), 216-221.

cord stimulation versus repeated lumbosacral spine surgery for
chronic pain: A randomized, controlled trial. Neurosurgery, 56
(1), 98-107.

Kumar K, Malik S, Demeeria D (2002). Treatment of chronic
pain with spinal cord stimulation versus alternative therapies:

pain by using intrathecal drug therapy compared with conven-
97 (4), 803-810.

pain and dysfunktion: the trigger point manual. Baltimore and
Philadelphia: Lippincott Williams & Wilkins.

treatments for trigeminal neuralgia: Reevaluation of radiofre-
Interventional Pain Management for LCP with CPT codes

Sandra Callaghan MSN RN NP-C MSCC

Interventional pain management procedures may not cure pain. Indeed, 50% or greater reduction in pain is the criterion for interventional procedure success. A successful procedure can allow a person to work, participate in family activities, remain functionally independent, and enjoy a better quality of life.

Trigger point injections A trigger point is a discrete, focal, hyperirritable area located in a taut band of skeletal muscle (Saunders, 2009, p. 29). These occur when overstimulated muscles are deprived of oxygen and blood when tiny knots develop in injured muscle and block local blood flow. Lactic acid accumulates, causing increased soreness in the muscle and leading to spasms. Trigger points can manifest as both local pain and referred pain, including persistent headache, tinnitus, temporomandibular joint pain, decreased range of motion in the legs and low back pain.

A common treatment for trigger point pain is injections into the primary trigger points that cause local and referred pain. Injections can provide immediate relief. Steroids and a local anesthetic are typically used for the injections; however, trigger point injections with anesthetic alone may be given, especially in a diabetic patient due to the effect of anti-inflammatory corticosteroids on blood sugar. Botulinum toxin may occasionally be indicated for longer lasting relief if effects of steroid and anesthetic are only temporary.

Trigger point injections are office procedures and can also be combined with other injections (see below).

CPT Codes

- 20551 - 20553 depending on the number of muscle groups injected
- Injectable codes to cost the medication (bupivacaine, lidocaine and Depo-Medrol are most commonly used)
- 99212 - 99215 An office visit may also be charged at the same appointment if treatments are for newly-diagnosed trigger points, interval condition changes that need to be docu-

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Nerve Blocks  In selective nerve root blocks, medication is injected around just a few damaged nerve roots. A sympathetic nerve block is injected into the nerve ganglion to control deep pain. A peripheral nerve blocks affects an individual painful nerve.

Peripheral nerves are outside the spinal column. They can become trapped by swelling or injury causing local or referred pain. An injection can be both therapeutic and diagnostic: if successful, it temporarily numbs the nerve and relieves the pain, thus identifying the cause of the pain. The injection may include a steroid to help decrease swelling for longer-lasting relief.

Peripheral nerve blocks can be given anywhere in the body, from head to toes. For example, pain attributed to migraine or dental conditions may actually originate in entrapped nerves in the head or face. If a patient has been in a motor vehicle accident, whiplash can injure the occipital nerve, a common cause of headache. Pain in the shoulder or radiating down the arm might be from suprascapular nerve entrapment. Rib fractures can result in intercostal nerve entrapment that can be perceived as abdominal, chest, or pelvic pain. The pain of "sciatica," sciatic nerve irritation, can be a local nerve pain from a local condition impacting the L4-5 nerve root, resembling the radicular effects of a herniated disc.

Once peripheral nerve injury is confirmed, radiofrequency ablation (RFA) or cryoneuroablation can be performed for longer lasting relief of symptoms. Peripheral nerve stimulation is another option for treatment of peripheral nerve damage after diagnostic evaluation.

These nerve blocks can be done in the office or a surgical center depending on the nerve(s) being treated and the patient / physician comfort level.

CPT Codes
• 64402 Facial nerve block
• 64405 Greater occipital nerve block
• 64412 Spinal accessory nerve block
• 64418 Suprascapular nerve block
• 64220-64221 Intercostal nerve blocks
• 64445 Sciatic nerve block
• 76942 Ultrasonic guidance for a nerve block may be used
• Anesthesia: (if used) Call Surgical Center for cost and codes. This may be costed in the Surgical Center fee.
• Medications
• Surgical Center Fee (if used) - Call geographically appropriate Surgical Center for cost

The criterion for interventional procedure success is a 50% or greater reduction in pain.

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Stellate ganglion blocks and lumbar sympathetic blocks When nerves are damaged they may respond with a diffuse pain syndrome. This usually affects a single extremity, and is called complex regional pain syndrome (CRPS). The pain is often described as burning, deep, or stabbing. Other symptoms may include hyperesthesia, color changes (red, blue, purple), swelling, excessive sweating, abnormal hair growth on the extremity, and abnormal posturing or dystonia of the extremity.

In CRPS, stellate ganglion or lumbar sympathetic blocks are diagnostic procedures to determine if there is damage to the sympathetic nerve chain and if it is the source of pain. Blocks are given at the sympathetic nerve ganglia under fluoroscopy, usually in a series. The injection may produce immediate warming of the extremity and often rapid reduction in edema, thereby relieving pain. Although it is mainly used as a diagnostic tool, pain relief may be obtained beyond the duration of the anesthetic. Aggressive physical therapy should be provided in conjunction with the block to maximize function.

Facet Injections Typically, patients suffering from facet-related pain will have pain on range of motion of the cervical or lumbar spine because the facets are joints that guide and restrict spinal movement. The physical examination will help differentiate facet-related pain from other types of pain; palpation of the facet joints will cause increased symptoms. Although they may or may not provide long-term relief from pain caused by degeneration or arthritis, injections into the facet joints can relieve local and referred pain. Facet joint injections can also be used for diagnostic purposes to identify or rule out the facets as a pain generator.

Facet injections can be performed in two ways. In an intra-articular injection, a steroid and local anesthetic is placed inside the joint itself. In the medial branch block, local anesthetic with or without steroid is injected into the joints’ own sensory nerves. Medial branch blocks provide diagnostic information and therapeutic relief. If medial branch block results in only short-term relief, a radiofrequency ablation (see below) can be performed for longer effect.

CPT Codes
- 64510 Stellate Ganglion Block
- 64520 Lumbar Sympathetic Nerve Block
- Fluoroscopy 76000 or 76001
- Anesthesia - Call Surgical Center for cost. This may be costed in the Surgical Center fee.
- Medications
- Surgical Center - Call geographically appropriate Surgical Center for cost

CPT Codes
- 64490 Cervical or thoracic facet injection single level
- 64491 Cervical or thoracic second level
- 64492 Cervical or thoracic third or any additional levels
- 64493 Lumbar or sacral facet injection single level
- 64494 Lumbar or sacral facet injection second level

continued next page
• 64495 Lumbar or sacral facet injection, third or any additional levels
• Fluoroscopy 76000 or 76001
• Anesthesia - Call Surgical Center for cost. This may be costed in the Surgical Center fee.
• Medications
• Surgical Center fee - Call geographically appropriate Surgical Center for cost

Radiofrequency ablation / cryoneuroablation
Radiofrequency Ablation (RFA) reduces pain by destroying a small area of a facet’s medial branch with heat from radio waves or electrical current. After local anesthetic, the nerve is heated with radiofrequency energy, interrupting its ability to transmit the pain signal.

Pain relief can be achieved anywhere from three months or longer. Because the procedure is not permanent, the procedure may be repeated when the effects wear off.

Cryoneuroablation is similar to RFA, using cold instead of heat. A probe is placed on top of the nerve under local anesthesia and the temperature of the probe is dropped to -70º C. This destroys the nerve. The myelin sheath insulation is not damaged and remains, which allows the nerve to grow back.

After RFA or cryoneuroablation, the patient will often experience increased pain symptoms for one week and then progressive improvement over the next 6 to 8 weeks.

CPT Codes
• 64622 Lumbar or sacral, first level
• 62623 Lumbar or sacral, each additional level
• 64626 Cervical or thoracic, first level
• 62627 Cervical or thoracic, each additional level
• Fluoroscopy 76000 or 76001
• Anesthesia - Call Surgical Center for cost. This may be costed in the Surgical Center fee.
• Medications
• Surgical Center fee - Call geographically appropriate Surgical Center for cost

Epidural Steroid Injections
Spinal nerves can be irritated in many ways: mechanical compression by narrowing in the spinal canal (stenosis), trauma, local edema, or disk herniation; and chemical irritation by inflammation from adjacent disk or muscle damage. Symptoms generally include a radiation of pain down one or both of the extremities. Epidural steroid injections (ESI) are anti-inflammatory steroids placed into and around the nerves in the epidural space to treat nerve irritation and swelling. They may be performed at any spinal level. If there is more pain radiating down one side of the body then transforaminal epidural

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steroid injection is appropriate with emphasis on the affected side. If the inflammation is centrally located, an inter- or translaminar approach is used.

Steroids deposited in the epidural space are taken up by adipose tissue and blood vessels so it diffuses to adjacent nerve roots over time; systemic absorption also occurs and may affect diabetic glucose control (Ramamurthy, Rogers, Alanmanou, 2006). A caudal epidural steroid injection is used to reach the lower back or sacrum. In both cervical and caudal injections, a catheter is used to reach the level of the spine where needle insertion might be difficult or risky, or when surgery and scar tissue make needle insertion difficult.

ESI is best performed in a surgical center setting under fluoroscopy so needle insertion and contrast dye spread can be observed to ensure proper medication placement; this cannot be guaranteed with blind technique. Complications may include hypotension caused by sympathetic block, local anesthetic toxicity due to intravascular injection, and paralysis and apnea caused by high epidural, subarachnoid or subdural injection. Epidural opioids can cause respiratory depression, pruritus, nausea and vomiting, and urinary retention (Ramamurthy, Rogers, Alanmanou, 2006, p. 288). Facilities doing ESI must have resuscitation equipment immediately available.

Injections are usually performed in a series of three. If, however, the patient gets significant symptom relief and full functional return after the first, then no additional injections are required. If the patient receives some benefit after the first injection, then a second and perhaps third injection is indicated. Some patients will need intermittent injections for long-term pain control, usually no more than three to six per year.

**CPT Codes**
- 62311  Lumbar Epidural
- 62310  Cervical Epidural
- 64479 Transforaminal epidural cervical or thoracic level
- 64480 Transforaminal epidural cervical or thoracic additional level
- 64483 Transforaminal epidural lumbar or sacral
- 64484 Transforaminal epidural lumbar or sacral additional level
- 62318 Epidural Injection at the Cervical or Thoracic level using a catheter
- 62319 Epidural Injection at the Lumbar or Sacral (caudal) level using a catheter
- Fluoroscopy 76000 or 76001
- Anesthesia - Call Surgical Center for cost. This may be costed in the Surgical Center fee.
- Medications
- Surgical Center - Call geographically appropriate Surgical Center for cost

**Post-procedure care**  It is important to remember where the procedure is being performed, if anesthesia is required, and possible complications. The pa-
Patient should also be watched for side effects until fully recovered from the procedure and able to undertake independent self-care. Provision, therefore, must be made for someone to provide transportation and supervision until the patient is fully awake, alert and capable of caring for him or herself.

For example, a stellate ganglion block can temporarily affect swallowing and speaking. It is important for a caregiver to observe this and ensure that the patient will not aspirate. Respiratory depression can occur following epidural steroid injections. For procedures performed in a surgical center, local regulations may require that the facility ensures that the patient is discharged to a family member or caregiver who can make sure the patient is transported home.

Physical therapy usually begins with gentle range of motion; however some conditions, such as overuse or certain joint injections for inflammatory arthritis benefit from short-term rest. Once the symptoms have been relieved, a short course of physical therapy for rehabilitation and prevention of recurrence is encouraged.

References

Other Resources
www.medcentral.org
www.spine.org

Nursing Diagnoses to Consider
NANDA International Nursing Diagnosis, 2009-2011
- Ineffective Health Maintenance (Domain 1, Health Promotion; Class 2, Health Management)
- Ineffective Self-Health Management (Domain 1, Health Promotion; Class 2, Health Management)
- Deficient Diversional Activity (Domain 4, Activity/Rest; Class 2, Activity/Exercise)
- Risk for Spiritual Distress (Domain 10, Life Principles; Class 3, Value/Belief/Action Congruence)
- Chronic Pain (Domain 12, Comfort; Class 1, Physical Comfort)
Life Care Planning for the Cancer Patient

Cheryl Kaufman RN BScN CLCP CNLCP

Over the past several years, new targeted therapies to treat various cancers have come to market, including less toxic chemotherapy. Many patients are living longer with their disease with these technologies and pharmaceuticals. As a result, the Nurse Life Care Planner might be called upon to assist with preparation of a Life Care Plan for a patient with cancer.

Requests for future cost projection or Life Care Plan in cancer typically come from litigation about failure to diagnose or delay in diagnosing various cancers, and product liability and toxic tort litigation, e.g., related to asbestos or radiation exposure. Although every case is different and needs vary widely, this article will help provide a foundation to assist the nurse when preparing a Life Care Plan for the cancer patient.

Life Care Planning for cancer can be very challenging. The Plan for a survivor must take into consideration the stage of the disease, standard of practice for that stage as it concerns diagnostic testing, treatments with significant toxicity, complications that often follow, and future care and monitoring. Sometimes recurrence is inevitable, and the Nurse Life Care Planner might be asked for a future cost projection for items and services needed for recurrent disease or assistance with planning for the end of life situations.

Cancer Staging

Staging is the process of determining how much cancer there is and where it is located. Staging describes the extent or severity of an individual’s cancer based on the area of the original (primary) tumor and the extent of spread in the body. Knowing the stage of the disease helps determine a plan of treatment as well as the course of the disease and likely

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outcome (AJCC, 2010). Staging provides a common language with which all health care team members can communicate about a patient’s case, in the same way in which the nursing process provides a common language for nurse Life Care Planners.

In addition to a physical examination, staging involves diagnostic imaging to show the size, location of the tumor and presence or absence of any spread. Normal cells have a normal life span: cells die and are replaced with new. This programmed death is called apoptosis. Cancer cells, however, tend to grow and divide without any order; these cells lack apoptosis. Cancerous cells can also break away from the primary site and invade the bloodstream and the lymphatic system, spreading to other organs.

Cancer Staging

It is important for the Life Care Planner to understand the staging system for the specific cancer and to understand its impact on prognosis.

Stage I cancers are the least advanced and often carry a better prognosis. Higher-stage cancers are often more advanced; they may be treated successfully, but carry a higher risk of recurrence. (Table 1)

The staging workup includes a biopsy for definitive diagnosis. Surgery is often necessary to determine the size and appearance of the tumor and involvement of lymph nodes and other organs. The pathology of the biopsy specimen includes information about the size of the tumor, the cell type and the grade of the tumor (how closely the cancer cells resemble normal tissue.) Tumor size also affects treatment decisions and prognosis, because larger tumors are associated with increased probability of nodal or organ involvement and poorer prognosis (Itano & Taoka, 2005).

The TNM staging system is one the most commonly used to stage different types of cancer. It was developed and is maintained by the American Joint Committee on Cancer (AJCC) and the International Union Against Cancer (UICC). Most medical facilities and the National Cancer Institute (NCI)’s comprehensive cancer information database use the TNM staging system as their main method for cancer reporting. The “T” categorizes original (primary) tumor extent, “N” describes lymphatic spread, and “M” categorizes any distant metastases.


<table>
<thead>
<tr>
<th>Stage</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Stage 0</td>
<td>Carcinoma in situ.</td>
</tr>
<tr>
<td>Stage I,</td>
<td>Higher numbers indicate disease that is more extensive: Larger tumor</td>
</tr>
<tr>
<td>Stage II,</td>
<td>size and/or spread of the cancer beyond the organ in which it first</td>
</tr>
<tr>
<td>and Stage</td>
<td>developed to nearby lymph nodes and/or organs adjacent to the location of</td>
</tr>
<tr>
<td>III</td>
<td>the primary tumor.</td>
</tr>
<tr>
<td>Stage IV</td>
<td>The cancer has spread to another organ(s).</td>
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Criteria for stages differ by types. Each cancer type has its own classification system, and the letters and numbers may vary for different ones. For many, TNM combinations correspond to one of five stages and are represented as 0, I, II, III, or IV. Sometimes, stage is subdivided, e.g., stage IIA and IIB (AJCC, 2010). In breast cancer, for example, “T3N0M0” refers to stage IIB, defined as a large tumor greater than 5cm with no lymph node or organ involvement.

In some cases, recurrence rate is high despite good response to treatment, and relapse-free or disease-free period can be short. Cancer that returns or spreads is still referred to by its initial staging. However, if more treatment is planned, the physician might restage the cancer using the same process that was done when the cancer was first diagnosed: examination, imaging, biopsies, and possibly surgery, this last both to restage and possibly reduce tumor burden. If the cancer is restaged, the new stage will then be recorded with a lower case “r” before the restaged designation. e.g., “rT4N1M2” (AJCC).

**Cancer grade** represents the characteristics of the tumor cells, their appearance under the microscope. Grade I cancer cells look calm and bland under the microscope; a grade III cancer with the same tumor size and lymph node involvement has a much higher chance of spreading and hence a much worse prognosis. Under the microscope, pathologists can see grade IV cells dividing rapidly and often describe them as "angry."

Cancers of the brain and spinal cord are staged according to cell type and grade. The higher the grade; the more aggressive the tumor. (WHO, 2003) Some examples are: astrocytoma, WHO grades I and II; anaplastic astrocytoma (AA), grade III; and glioblastoma (glioblastoma multiforme, GBM), designated as grade IV due to its characteristically clinically aggressive course. Different staging systems are also used for cancers of the blood and bone marrow, such as lymphomas. The **Ann Arbor Staging Classification** is often used for lymphoma and has been adopted by AJCC and UICC. Some blood and bone marrow malignancies, including leukemias, do not have a clear-cut staging system. Staging of childhood cancers uses the TNM system or the staging criteria from the **Children’s Oncology Group**. (NCI)

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Diagnostic Workup

While this varies according to the specific type of cancer, the National Comprehensive Cancer Network® (NCCN®) provides guidelines by clinical stage and disease to guide the health care professional in decisions and interventions. NCCN® is a nonprofit alliance of twenty-one leading cancer centers and thought leaders. It is an authoritative source of information by disease state. NCCN provides evidence-based and consensus-driven guidelines for cancer diagnosis and treatment by site and stage of disease, regularly updated at http://www.nccn.org/professionals/physician_gls/f_guidelines.asp

As an example, recommended guidelines for breast cancer general workup appear in Figure 1. However, additional diagnostic studies may be indicated as the disease progresses to stage IIIA (axillary or subternal lymph node involvement), depending on developing signs and symptoms. Results will be used as a baseline for comparison to measure response to treatment(s).
The NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®), (upper right hand corner of Figure 1) includes the AJCC staging tables and a Discussion section. The Life Care Planner will appreciate the clinical stage/workup guidelines to help know what diagnostics to incorporate into the plan, in collaboration with the treatment team.

**Treatment Options**
The many different treatment options have different mechanisms of action. Therefore, it is common for the clinician to use two, three, or even four different drugs together or with other treatment modalities, such as irradiation or surgery. Treatment decisions depend on the individual’s cancer cell type, stage or grade, underlying comorbidities, and preference.

Open collaboration with treating clinicians and review of the current literature give data on treatments and services based on the probability of recurrence of disease and progression-free survival (PFS), relapse-free survival (RFS), and overall survival rates for the specific type and stage of cancer. Cancers well-advanced at the time of diagnosis will often require a combination of treatments. Although cure may not be an option, the goal of multimodality treatments is to provide an increased relapse-free and overall survival period with the fewest possible side effects compared to no treatment at all. This is a valid option, when requested by the patient.

While it is not possible to list them all here, Table 2 provides a partial summary of available options, rationales, and mechanisms of action for cancer treatment. This information will assist the nurse Life Care Planner to create nursing diagnoses, interventions, and recommendations for items and services to manage toxicities that inevitably follow treatment. (See Toxicities, below)

**Cancer chemotherapy** is the treatment of choice for hematologic and solid malignancies, including those with local or distant metastasis. Use of antineoplastic agents is based on concepts of cellular kinetics. (Itano & Taoka, 2005) Three concepts apply:

- **Cell-cycle time** is the five-stage process of cellular reproduction that occurs in all cells, normal and malignant. It is the amount of time required for a cell to move from one mitosis to another mitosis. Shorter cell-cycle time results in higher cell kill by cell cycle-specific agents. Continuous infusion of cell cycle-specific antineoplastic agents results in exposure of a greater number of cells to the chemotherapy and in a higher cell kill in tumors with short cell-cycle times.

- The **growth fraction** is the percentage of cells actively dividing at a given time. Exposure to cell cycle-specific agents results in a higher cell kill in a cancer with a larger growth fraction. A tumor with a high mitotic index will require a different type of drug than tumors with a greater fraction of cells in G0. Tumors with a greater fraction of cells in G0 (resting phase) are more sensitive to cell-cycle non-continued next page
specific agents than agents that work predominantly in active mitosis. (See Biological Response Modifiers, below).

- Cancers with a small tumor burden are usually more sensitive to anti-neoplastic therapy. Combining two or more antineoplastic agents with different mechanisms of action in different phases of the cell cycle increases the number of cells exposed to cytotoxic effects during a given treatment cycle.

Combination therapy also has other advantages: one drug may modulate the toxicity of another and decrease the possibility of drug resistance. So, for example, alpha interferon works best when the cell is in G0 and G1 but not when cells are rapidly dividing. On the other hand, some antineoplastics work best during active DNA replication, not when the cell is in G1 or interphase. In certain cancers, it

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would make sense to use chemotherapy to kill the tumor cells during DNA replication and then follow up with alpha interferon to clean up the cancer cells at rest.

Many chemotherapeutics are scheduled on a cycle, not necessarily daily, due to the various mechanisms of action and corresponding toxicity. This allows suppressed bone marrow to recover from treatment before the next dose. The oncology nurse and oncology pharmacist can assist the Life Care Planner in determining dosage, frequency, and number of cycles of each treatment. All associated costs, including facility fee, can typically be obtained directly from the billing department of the oncology center where the client will be treated.

Drug and associated costs can be obtained directly from either the retail or specialty pharmacy. Many of the medications are now available in oral or subcutaneous formulations. However, the patient may require a PICC or Portocath, with associated costs for insertion and maintenance.

Toxicities
Unlike most Life Care Plans, a cancer Life Care Plan is almost certain to require recommendations to treat medication toxicities. Knowing how drugs destroy cancer cells will tell the Life Care Planner about the high probability of toxic side effects due to destruction of other body cells; knowing that specific toxic side effects depend on the mechanism of action of the specific drug will alert the Life Care Planner to plan specific recommendations. While it is beyond the scope of this article to cover all possible toxicities common with administration of chemotherapies, a few basic concepts will apply in most situations.

Myelosuppression For example, since toxic chemicals indiscriminately destroy cells while they are in an active stage of mitosis (see Table 2, Chemotherapy), they do not discriminate between cancer cells and normal healthy ones. Therefore, myelosuppression, reduction in bone marrow function resulting in decreased white blood cells (WBC), red blood cells (RBC), and platelets, is a common side effect. Decreased WBC production, neutropenia, increases risk for infection and sepsis. Decreased RBC production, anemia, often causes problems with fatigue due to low oxygen-carrying capacity. Decreased platelet formation, thrombocytopenia, increases risk for bleeding.

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Myelosuppression can also result from tumor cell invasion into the bone marrow, poor nutritional status (nausea and vomiting are common side effects of the treatment itself), and comorbidities. Older clients have more fat and less cellular marrow than their younger counterparts. Prior treatment with chemotherapy, radiation therapy and combined modality therapies are also more likely to produce myelosuppression. (Itano & Taoka, 2005)

Granulocyte, macrophage, monocyte, eosinophil, and erythrocyte counts all drop during chemotherapy. Thrombocytopenia is more common with multimodal therapies; it is often seen after a drop in white blood cell counts, with recovery in two to six weeks. (Itano & Taoka, 2005) Various hematopoietic growth factors are used to stimulate and enhance normal cell growth within the bone marrow. These therapies may significantly reduce morbidity and mortality from infections, sepsis, anemia, and hemorrhage secondary to neutropenia and thrombocytopenia.

There are very specific guidelines for monitoring and treating febrile neutropenia due to severely immunocompromised status and resulting high risk for bacterial, viral, and fungal infection. The treating oncologist, radiation oncologist, hematologist, and oncology nurse specialist are invaluable resources for information on laboratory studies, type, frequency, and duration of hematopoietic blood cell growth factors, and follow-up care and monitoring to include in the Life Care Plan. The majority of these medications can be given subcutaneously by the patient or a family member, which can limit complications and thus control costs.

For clinical practice resources related to neutropenia and other complications, visit the Oncology Nursing Society website at http://www.ons.org/ClinicalResources. NCCN also has supportive care guidelines for chemotherapy-induced anemia, and use of myeloid growth factors for prophylaxis and treatment of febrile neutropenia.

**Additional considerations** that should not be overlooked include alopecia, which occurs secondary to the treatments that impact rapidly dividing cells and damages hair follicles, causing temporary and sometimes permanent hair loss (i.e., scalp, facial, axillary, pubic, eyebrow, eyelash, nasal and body), which can result in disturbed body image, situational low self-esteem, ineffective sexuality patterns, and impaired social interaction. Alteration in nutrition is common due to anorexia, nausea and vomiting, taste alterations, mucositis and others, which can lead to cachexia, risk for impaired nutrition, risk for dehydration, and risk for impaired skin integrity. Fatigue, constipation especially if narcotics are prescribed, electrolyte imbalance, and risk for caregiver role strain are additional critical considerations.

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Biological Response Modifiers (BRMs)
These are used to treat some biologically-sensitive tumors. Unlike cell-destructive chemotherapy, this drug class slows or suppresses the cell’s cycle, prolonging the resting phase when the cells are not dividing. The mechanism of action is to stimulate the immune response, making tumor cells more susceptible to immune attack (Itano & Taoka, 2005).

Side effects are dose-limited. Some of the more common side effects include flu-like symptoms (high fever, rigors, and chills), myalgia, arthralgia, and anorexia. These side effects are classic effects of immune stimulation and are more common with use of the alpha interferons. Fatigue and headache are quite common. Neuropsychiatric disorders including depression, suicidal ideations and suicidal attempts can occur, and individuals must be carefully monitored during and after treatment since neuropsychiatric effects tend to linger.

The pharmaceutical package inserts for these are available for review for more information at http://dailymed.nlm.nih.gov/dailymed/. They will help to familiarize the reader with the most common expected side effects, percentage of patients who experienced them, and black box warnings. This will provide a foundation for your Life Care Plan to treat the probable side effects and toxicities and your recommendations to prevent or minimize complications.

Targeted Therapies
Targeted therapies are the newest addition to the medical oncologist’s and hematologist’s armamentarium. Molecular targeted therapies target cell membrane receptors, signaling pathways and proteins, enzymatic activity, and regulatory cell growth controls that are aberrant or more abundant in malignant cells than normal cells. (see Table 2) This leads to a higher therapeutic index and a lower toxicity profile than chemotherapy (Gemmil & Idell, 2003). Many are better tolerated than chemotherapy due to their mechanisms of action. Examples include angiogenesis inhibitors, tyrosine kinase inhibitors, monoclonal antibodies (MAbs) (unconjugated or conjugated), and others. While it is not possible to review all, a general overview will help the reader understand how and why targeted therapies work in cancer, and assist the Life Care Planner develop nursing diagnoses, recommendations, and interventions.

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Formation of new blood vessels is called angiogenesis. The process is controlled by chemicals that help stimulate cells for wound healing, repair of damaged blood vessels, or new blood vessel growth. This is important to understand because tumors require blood vessels rich in oxygen and nutrients to grow and metastasize. Angiogenesis inhibitors block the new blood vessels so that tumor growth is slowed or temporarily stopped (NCI, 2011).

Anti-angiogenesis agents are currently used to target and treat metastatic colorectal cancer, metastatic kidney cancer, some forms of metastatic lung cancers, some metastatic breast cancers, GBM, and multiple myeloma. One anti-angiogenesis agent, thalidomide, is used with dexamethasone for multiple myeloma; its teratogenic effects in pregnancy are well-known. However, there are newer, less toxic drugs with a similar mechanism of action for use in cancer.

Angiogenesis inhibitors are not toxic to most healthy cells. Tumors do not seem to develop resistance to angiogenesis inhibitors, unlike chemotherapy, even if given over a long period. These drugs do not kill tumor cells and therefore may have to be administered over a longer period, but they keep tumors stable (NCI, 2011).

Anti-angiogenesis agents have different side effects from most chemotherapeutics. Since angiogenesis is important for wound healing and reproduction, long-term use of an angiogenesis inhibitor will result in problems with the reproductive system (male and female) with likely damage to the fetus. In addition, a patient’s immune system may be compromised, increasing risk of infection and prolonged or interrupted wound healing. Use of anti-angiogenesis agents also cause problems with increased bleeding or hypercoagulation, hypertensive crisis, headaches, and fatigue.

Tyrosine Kinase Inhibitors (TKI) are another type of molecular targeted therapy. They are used in a variety of malignancies for their ability to interfere with cell communication and growth. In normal cells, growth factors that are excreted by other cells bind to receptors on the cell surface, stimulating the cell to divide. TKIs block the signals that tell a cancer cell to grow and divide (Gale, 2003; Becker et al., 2005).

For example, in chronic myeloid leukemia (CML), a chromosomal translocation creates a novel kinase that is “on” all the time; the growth pathway that this kinase controls is, in effect, stuck in gear, leading to proliferation of the cancerous cells. The tyrosine kinase inhibitor that targets this specific pathway turns it off, stopping the proliferation of the activated kinases to prevent cancer cell division (Becker et al., 2005). Side effects are generally mild but nonetheless require close monitoring: a decrease in white blood cell and platelet counts; nausea, vom-
iting and diarrhea; muscle cramps; fluid retention and swelling, especially around the eyes; and rash. (http://dailymed.nlm.nih.gov/dailymed/)

**Unconjugated MAbs** are specific for an antigen found on cell surfaces. They activate the immune system to kill cancer cells through complement- or antibody-dependent cytotoxicity or by stimulating apoptosis. Side effects are a result of immune stimulation and resulting cytokine cascade (proteins released by cells that affect function of other cells) resulting in flu-like symptoms.

**Conjugated MAbs** target specific antigens on the surface of cells but also have anticancer agents attached to them, such as toxins, chemotherapeutics, or a radioactive isotope. Side effects depend on the toxin attached. If they carry radioactive isotopes, toxicity may also affect nearby cells (Cheson, 2001; Itano, 2005).

Published guidelines of use to the Life Care Planner for supportive care measures for cancer pain, nausea, cancer-related fatigue, senior adult oncology, distress management, and other forms of palliative care are found on the NCCN website.

**Sexuality and Fertility**

Cancer and cancer treatments vary in their chances of causing infertility. Cancer treatment brings high risk of birth defects and miscarriages due to radiation exposure from diagnostic workups and therapy. Mutagenic and teratogenic effects from various medications and spontaneous abortion following surgical procedures have been reported. The Life Care Planner may wish to assess the client regarding birth control in use, if any, and include a referral for birth control counseling into the Life Care Plan, if appropriate.

Individual factors such as type of cancer, treatment, dosages, age, and gender all play important roles in sexual function and feelings. Anxiety, depression, grief, change in body image, fatigue, activity intolerance, chronic pain, sleep deprivation, nausea, and severity of cancer can all affect sexual function. Use of PLISSIT model for intervention management should be considered during the nurse Life Care Planner’s comprehensive assessment and evaluation of the client. *(Table 3, next page)*

Treatment-related infertility, both temporary and permanent, and fertility preservation options are usually discussed by the treating physician. Some female fertility treatments depend on menstrual cycle phase and can be initiated only at monthly intervals. There are many experimental fertility preservation methods being investigated; see www.fertilehope.org for links to current studies. There are two methods of fertility preservation recognized as having the highest likelihood of success: sperm cryopreservation (sperm banking) for males and embryo-freezing for females.

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Sperm cryopreservation is the most established technique for fertility preservation in men. It involves freezing sperm obtained from masturbation, testicular aspiration, extraction under sedation, or a post-masturbation urine sample. For more information on sperm banking, pricing and locations, visit www.spermbankdirectory.com

Embryo cryopreservation involves harvesting eggs, in vitro fertilization, and embryo freezing for later implantation. For more information on this as well as additional fertility preservation options that may be considered for Life Care Planning purposes, please visit The American Society for Reproductive Medicine at http://www.asrm.org/ and the American Society of Clinical Oncology at http://www.asco.org/guidelines/fertility.

Other sources of reproductive education, information, assistance, and fertility preservation may be obtained from The Lance Armstrong Foundation/ LIVESTRONG at www.livestrong.org, www.fertilehope.org, and The Susan G. Komen Breast Cancer Foundation at www.komen.org.

**Non-Pharmacologic Interventions**

Consideration for non-pharmacologic interventions and supportive care should also be considered when preparing the Life Care Plan for a cancer patient. These supportive interventions focus on increasing well-being, healing, or symptom management. They are often used in conjunction with conventional medical treatment and are often categorized as complementary alternative medicine (CAM). CAM includes therapies that may be used in place of (alternative) or together with (complementary) conventional medical therapy. Integrative medicine combines mainstream medical therapies and CAM therapies with high-quality scientific evidence of safety and effectiveness. (NCCAM 2003) Developed by the National Center for Complementary and Alternative Medicine (NCCAM) at the National Institutes of Health (NIH), CAM interventions may be catego-
rized as those that focus on the mind-body-spirit connection, manual and energy healing, and physical touch techniques. Some examples include spiritual/religious, exercise, hypnosis, high-dose vitamins, self-help groups, lifestyle, diet, and massage therapy. Ultimately, the decision to use CAM therapies depends on the client’s personal truth and feelings.

Two of the author’s favorites are music and humor. Music is considered a universal language and is used in combination with many approaches to enhance relaxation (Halstead & Roscoe. 2002). Studies support the effectiveness of music as a non-pharmacologic method of pain reduction by stimulating the release of endorphins. Music may also be of benefit in moderating anxiety during radiation and chemotherapy administrations and is a simple, low cost intervention (Edwards, 2005). Music therapists have a bachelor’s degree in music therapy and a supervised internship. The American Music Therapy Association can be accessed at http://www.musictherapy.org for information on certification and educational requirements.

The ability to see the humor in situations in life is a valuable health asset. Laughing relaxes the nervous system and moves the diaphragm up and down vigorously, emptying the lungs more completely than usual. Humor can be cultivated even during a serious illness such as cancer. Humor has also been cited as an effective coping mechanism. (Edwards 2005)

Being surrounded with supportive people helps clients avoid depression and negative thinking.

Supportive Care: Dying and Death
This article would not be complete without mention of including end-of-life recommendations for a Life Care Plan. As disease advances to involve other major organs, palliative care and hospice care become reasonable options. Collaboration with the physician early on to determine prognosis and assessing the client and family knowledge and attitudes about end-of-life care will assist the Life Care Planner to create the Life Care Plan for this stage.

Palliative care and hospice care involve symptom management and emotional and spiritual support of the client and family facing life-threatening illness. Either can be initiated when the disease progresses, as the client wishes.

Hospice care provides for the needs of the client, family, and significant others as they deal with the terminal illness. Imminent death is often the stimulus for hospice referral, but referral is appropriate with any prognosis of less than six months life expectancy to optimize patient and family support services. Specific criteria for cancer diagnosis are widespread, aggressive or metastatic disease, patient no longer seeking curative treatment, or a Palliative Performance Scale equal to or less than 70 (Ander-continued next page
son et al, 1996). It provides a variety of caregivers, including client’s personal physician, hospice physician, home health aides, nurses, social workers, clergy, trained volunteers and speech, physical and occupational therapists if needed. The goals of care are usually directed by the client and family. Bereavement care is provided to the family after the death of the client. Hospice philosophy emphasizes palliative care, which can be as aggressive as curative care but with a focus on comfort, dignity, quality of life closure and patient family choice (Egan & Labyak, 2001). Hospice care is a Medicare benefit; most health insurance plans duplicate the services mandated by Medicare, covering all equipment and medications related to the terminal diagnosis.

Palliative care is an approach that improves the quality of life of the client and their family facing problems associated with life-threatening illness (WHO, 2003). It can be initiated at the time of a life-threatening diagnosis for which cure is not available, therefore extending the principles of hospice care to a broader population that can benefit from care earlier in their illness.

Unlike hospice care, palliative care can be integrated in conjunction with medical treatments that are intended to control or minimize the disease. However, palliative care increases and curative care decreases as the cancer progresses. The major goal of care at the end of life is symptom management, including pain relief, psychological care, and spiritual care to enhance quality of life. This can be accomplished by decreasing stress from symptoms. Incorporating various techniques both pharmacologic and non-pharmacologic interventions will help to accomplish this goal.

Pain associated with cancer in the terminal phase of the disease occurs in the majority of clients (Fink & Gates, 2001). Cancer pain may be acute pain caused by the cancer or the cancer therapy itself. Or pain can be chronic, from tumor recurrence and disease progression. Breakthrough pain is common, requiring rapid onset medications.

Bone metastases and destruction of bone or compression of the bone on nerves and soft tissue are the most common sources of cancer pain. Abdominal visceral pain may be caused by tumor obstruction of the bowel, liver metastasis, blood flow occlusion to visceral organs as well as other causes. Advancing disease can also result in nerve compression or injury affecting the peripheral, sympathetic and central nervous system resulting in spinal cord compression.
sion and plexopathies. In these, pain is often a first sign, and is followed by extremity weakness and sensory loss (Brant, 2005).

Intensive interventions may be used for pain as appropriate to the source, such as radiation for discrete bony metastases or radiopharmaceuticals for more generalized bone pain. Neural blockade and neuroablation for pain control not amenable to other modalities have also proven helpful in alleviating severe pain (Abrahm, 2000), (Ed. note: see also Toshniwal et al, this issue) While transdermal, sublingual or oral vehicles are ideal, rectal suppositories or continuous intravenous or patient-controlled analgesia (PCA) administration is available. Severe chronic pain due to cancer spread can lead to impaired physical mobility, changes in cognition, alteration in sleep patterns including sleep deprivation, increased fear of dying, increased anxiety, and depression. Psychiatric interventions can be helpful in pain management. Since static positions in bedrest may increase pain, activity including range of motion exercise might be helpful.

**Conclusion**

Now that treatment advances offer cancer patients longer life expectancies, Life Care Planners must be aware of the implications of longer-term survival

---

**Nursing Diagnoses to Consider**

NANDA International Nursing Diagnosis, 2009-2011

- **Readiness for Enhanced Self-Health Management** (Domain 1, Health Promotion; Class 2, Health Management)
- **Impaired Physical Mobility**: Limitation in independent purposeful physical movement of one or more extremities (Domain 4, Activity/Rest; Class 2: Activity/Exercise)
- **Deficient Diversional Activity** (Domain 4, Activity/Rest; Class 2, Activity/Exercise)
- **Fatigue**: An overwhelming sense of exhaustion and decreased capacity for physical and mental work at the usual level (Domain 4, Activity/rest; Class 3: Energy Balance)
- **Risk for powerlessness**: At risk for perceived lack of control over a situation and/or one’s ability to significantly affect an outcome (Domain 6, Self-Perception; Class 1: Self-Concept)
- **Interrupted Family Processes**: Change in family relationships or functioning (Domain 7, Role Relationships; Class 2: Family Relationships)
- **Readiness for Enhanced Coping** (Domain 9, Coping and Stress Tolerance; Class 2, Coping Responses)
- **Risk for Spiritual Distress**: (Domain 10, Life Principles; Class 3, Value/Belief/Action Congruence)
- **Impaired Comfort**: Perceived lack of ease, relief, and transcendence in physical psychospiritual, environmental, and social dimensions (Domain 12: Safety/Protection, Class 1: Physical comfort; Class 2, Environmental comfort; Class 3, Social comfort)
- **Chronic Pain** (Domain 12, Comfort; Class 1, Physical Comfort)
Cancer Life Care Planning: Common CPT Codes to Consider  
Kaufman 2011

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<td>38500-38530</td>
<td>Biopsy/excision lymph nodes</td>
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<td>38562-38564</td>
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<td>Cancer Drug</td>
<td>Use J codes</td>
<td>J codes relate to permanent codes used to report injectable drugs such as anti-neoplastic and other highly complex drugs that ordinarily cannot be self-administered. <a href="http://libweb.allencc.edu/HCPCS0014.html">http://libweb.allencc.edu/HCPCS0014.html</a> retrieved 9/23/2011. As an example of costs: ipilimumab (monoclonal antibody), 4 cycles, $120,000.</td>
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after cancer diagnosis and treatment to establish a foundation for assessment and planning for care needs in this population.

References

American Joint Committee on Cancer Staging Manual (2010) 7th Edition Sobin, LH Cancer; 116(22)


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Itano, J. Taoka K. (Eds.) 2005 Core Curriculum for Oncology Nursing fourth Edition Elsevier Saunders St. Louis


National Cancer Institute-Angiogenesis Inhibitor Fact Sheet 2011.


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