Nursing of Adults Process Paper

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Client Profile

E.G. is an eighty-three year old female, who was admitted to the facility on 1/31/2012 with intractable leg pain. Her allergies include penicillin, iodine, and codeine. At this time she does not have an advance directive, therefore making her status a full code. E.G. weighs 129 pounds and she is on a low sodium diet. Her activity level is up as tolerated. E.G. has a history of breast cancer in 1985 with recurrent malignant pleural effusion since 2002; she is status post a colectomy for colon carcinoma and is currently in remission. She also has osteoporosis with several fractures in sternum, wrist, and vertebrae. Finally she has a history of hypertension.

Pathophysiology

Pain is a protective mechanism that indicates to a person that something is wrong, and to stop doing what is causing the pain. According to Black and Hawk pain can increase a person's length of stay at the facility, can cause a longer recovery time, and is associated with poorer outcomes (2009, p. 351). Pain is mainly subjective and two people may not experience the same pain equally. Attainable objective data that is related to pain may be increase or decrease in blood pressure, tachycardia, and diaphoresis, which is part of the flight or fight response of the sympathetic nervous system (Black & Hawk, 2009, p. 352). Nociceptors are the receptors that are activated when inflammation or damage occurs to the brain or spinal cord (Black & Hawk, 2009, p. 252). Other factors that affect pain are a person's pain threshold and their pain tolerance. The pain threshold is the lowest intensity of a painful stimulus that causes an individual to perceive that pain is present (Black & Hawk,, 2009, p. 356). Pain tolerance is the duration and the intensity of the pain that an individual is willing to endure (Black & Hawk, 2009, p. 356). Acute pain is considered to last six months or less and usually signifies that an injury to the body

has occurred. It is considered to be reversible and/or controllable with treatment. If the acute pain is not relieved, it may lead to chronic pain, which lasts longer than six months.

Patients with chronic pain may complain of fatigue, sleep disturbance, depression, and limited function all related to the pain (Black & Hawk, 2009, p. 352). The location of the pain may be localized or widespread with/without tenderness, and may or may not have a predictable pattern. There are three types of chronic pain; however in regards to E.G.'s history I will only briefly talk about one type, chronic malignant pain. Cancer related pain has traits of both chronic and acute pain, and it includes neuropathic, deep visceral, bone pain, and other types (Black & Hawk, 2009, p. 353).

Somatic pain is usually described as dull, and may be hard to localize due to the decrease or low number of nociceptive receptors in the ligaments, tendons, bones, nerves, and blood vessels (Black & Hawk, 2009, p. 353). The sensation of pain is from the inflammation. The inflammatory response produces histamine, bradykinin, prostanglandin, and leukotrienes. The blood vessels dilate to allow for neutrophils and macrophages to reach the damage tissue. Thus leading to the redness, swelling, and heat that causes localized edema and pain.

Neuropathic pain results from damage or injury to nerve fibers in the central or peripheral nervous systems. The pain that is felt is not due to nociceptors, instead it is a result of electrical impulses from the damaged area causing numbness, burning, and/or stabbing feeling in its corresponding area that the nerves supply (Black & Hawk, 2009, p. 354). This pain can be frustrating for the patient because there would appear to be no obvious reason for the pain to occur. Neuropathic pain is difficult to treat due to its poor response to typical analgesics. A patient with this type of pain may be prescribed gabapentin (Neurontin) and/or a tricyclic

antidepressant to help manage the symptoms (Black & Hawk, 2009, p. 354). The tricyclic antidepressants may help by blocking the re-uptake of serotonin and epinephrine, and they may increase the effect of opiate medications (Black & Hawk, 2009, p. 366). Gabapentin (Neurontin) works by minimizing the nerve impulses that send signals of pain through the nerve fibers (Black & Hawk, 2009, p. 366). This is most likely the reason that E.G. has been prescribed gabapentin (Neurontin).

There are many non-pharmacologic ways to manage pain. These include comfort measures that include, clean bedding and a relaxing environment. Heat application can help soothe, and cold compresses can reduce edema and inflammation. Simple things such as deep breathing exercises, guided imagery, music, and humor may distract a person and help them feel relax and not concentrate on the pain as much.

Osteoporosis is a preventable condition where decrease calcium in the bones leads to weak brittle bones, and increases the risk of fracturing bones. When an individual has a low bone mineral density, it is called osteopenia. A full-table dual-energy x-ray absorptiometry is performed on either the hip or the spine in order to measure a person's BMD (Black & Hawk, 2009, p. 489-490). A BMD that is not more than 1 standard deviation below the young adult mean is considered normal, whereas a BMD more than 2.5 below the standard deviation is considered to be osteoporosis (Black & Hawk, 2009, p. 487). A lot of the time a diagnosis is made after someone has fractured a bone, which is usually the vertebra. A person may experience severe back pain that is relieved when they rest (Black & Hawk, 2009, p. 489). Someone who has progressive vertebral deformities may also experience impaired lung expansion, and abdominal distention and bloating (Black & Hawk, 2009, p. 489). Peak bone mass is usually attained by age 30, and then due to the decrease in estrogen bone loss starts to

decrease during perimenopause for women. Bone loss may occur rapidly in women being treated for breast cancer, as may have occurred with E.G. (McGuire, Waltman, & Zimmerman, 2011). The major risk factors for osteoporosis are a history of a fracture in adulthood, low birth weight, cigarette smoking, and oral corticosteroids for more than three months (Black & Hawk, 2009, p. 488).

Cancer occurs when a mutation in cells take place. A change in appearance, growth, and the function of the cells occur, leading to multiplication. Eventually they may spread or metastasize in the body (Black & Hawk, 2009, p. 253). Cancer is caused by carcinogens, which are factors that cause the mutation in cells to occur. These carcinogens include chemicals, viruses, and radiation. Treatment often includes surgery, chemotherapy, radiation, and medications, which help remove the cancerous cells and to kill them. Other medications may also be used to treat side effects of chemotherapy, such as anti-emetics to treat nausea and vomiting after a chemotherapy treatment.

According to Black and Hawk, breast cancer is the number one diagnosed cancer in women, and is second when talking about mortality (2009, p. 266). Risk factors include family history, early menarche, late menopause, nulliparous (having zero children), or being age thirty or older when you had your first child (Black & Hawk, 2009, p. 266). Women are to perform regular breast exams on themselves starting at age 20 to help detect breast cancer, along with routine mammography's at the doctor's office starting when a women is forty years old.

As I noted earlier, breast cancer treatment increases bone loss, leading to osteoporosis. With osteoporosis an individual is at risk of fracturing a bone, which is said to decrease their quality of life (McGuire et al., 2011). According to McGuire, Waltman, and Zinmmerman

exercise for breast cancer survivors can decrease bone loss, improve balance and muscle strength, and lead to fewer falls (2011).

Risk factors for colorectal cancer are age, family history of cancer, alcohol and smoking, along with a sedentary lifestyle (Black & Hawk, 2009, p. 266). As of today there is no known way to prevent colorectal cancer. Routine fecal occult blood tests and digital examinations is a screening tool used by physicians for those who have a moderate risk, and for individuals over forty years old (Black & Hawk, 2009, p 266).

According to Black and Hawk, hypertension is a persistent elevation of Systolic and diastolic blood pressure (2009, p. 1290). It is related to an increase in "atherosclerosis, strokes, neuropathy, PVD, aortic aneurysm, and heart failure" (Black & Hawk, 2009, p. 1290). Hypertension is categorized according to its type, cause, and severity of the disease. These include primary hypertension, secondary, and isolated systolic hypertension. Primary hypertension is caused by any factor that alters the arterial blood pressure, such as a change in heart rate, stroke volume, or in the peripheral arterial resistance (Black & Hawk, 2009, p. 1293). Secondary hypertension occurs due to some identifiable cause, which is often correctable. It is caused by another disease or problem that affects the kidneys, vascular, neurologic, and endocrine systems (Black &Hawk, 2009, p. 1293). It may also be caused by food and drug interactions or problems. These can all lead to an increase in blood pressure overtime if left untreated. Signs and symptoms include headaches, fatigue, dizziness, palpitations, flushing, blurred and double vision, and epistaxis, however most individuals may not have any symptoms of increase blood pressure and it is discovered during routine screenings (Black & Hawk, 2009, p. 1294). The treatment includes increase in exercise and diet change to help decrease weight. Sodium restriction, decrease alcohol use, caffeine consumption, and smoking cessation are also

part of the treatment regimen for hypertension. Medications are also prescribed in order to control fluid overload and to help decrease blood pressure.

Concept Care Map

Please see the provided concept care map.

Assessment Data

Upon entering E.G.'s room, I noticed that she was in her bed with the head of the bed in semi-fowler's position. Her daughter was in the room visiting when I arrived. I noticed that she did not have her nasal cannula on, which was set at 2 liters of oxygen, therefore I placed that back on E.G. The patient was in good spirits and stated that she was "waiting for the doctor to come see her, because I hope I get to go home today." E.G. was alert and oriented to name, time, and place (A&O x 3). Her blood pressure was 131/83, pulse was 65 beats per minute, respirations 12, pulse oximetry reading was 95% with 2 liters of oxygen per nasal cannula, and her temperature was 98.6°F oral. E.M rated her pain at as 8/10 with the VAS pain scale. Her pain was constant and in her left lower extremity. It was centered around her knee and radiating up her thigh and down to her ankle. In response to the level of pain, I assisted the patient in repositioning. After my assessment was completed, I notified Evelyn R.N. of the patient's pain level and she was going to follow-up on it. Respirations were clear with regular rate and rhythm, with no cough present. When assessing her respirations on her back, I noted a large red area. Upon inquiring about area, the daughter answered and said "that it was shingles that is in the later stages of healing." The rest of her skin assessment was normal and revealed dry, warm, and intact skin with a left mastectomy scar. Skin turgor was under 3 seconds, with nail beds pink and cap refill less than 3 seconds. No edema present in upper or lower extremities. Radial and pedal

pulses were strong and equal bilaterally (+2). Her abdomen was soft and non-tender, with normal bowel sounds present in all four quadrants. E.G.'s last bowel movement was the previous night. E.G. does not have any hearing aids, and complained of no drainage from her ears. Patient had some difficulty hearing when I was not facing her. Eyes were clear, with pupil's equal, round, and reactive to light + 2 (PERRLA). E.G. does wear glasses, but not contact lenses. Speech was clear, and mucous membranes were pink and moist, and no upper or lower dentures. E.G.'s Braden score was 19/23, which means that there is little/small risk for a pressure ulcer to develop. Her Glasgow Coma scale score was 15/15, so she is not in a coma at this time.

The patient and daughter did not have any questions, other than when the doctor will be in. I asked E.G. if she would like to get cleaned up and bathed, and she said that her daughter would help her if I could gather the supplies, which I did.

Lab Information and Diagnostic Test Results

Patient was sent for an x-ray of left leg. Radiologist revealed that the femur had a small sclerotic lesion in proximal shaft, soft tissue calcification laterally on femoral head, and wispy linear calcifications inferior to the ischium tuberosity in the soft tissue. The radiologist also noted that E.G.'s knee joint had chondrocalcinosis and degenerative changes with a popliteal cyst containing calcific debris. The popliteal cyst may indicate a possibility of patient having a pseudogout (or false gout).

Pseudogout is classified as a type of arthritis that is similar in gout. It is caused by an accumulation of a salt called calcium pyrophosphate dehydrate (CPPD) in the synovial joint (Taber, Thomas, & Venes, 2001).

E.G. also had a left lower extremity venous duplex ultrasound performed, that resulted in no abnormal findings. A venous duplex scan is a painless test that uses a B-mode ultrasound to produce a grayscale image of the vessels (Pagana & Pagana, 2011, p. 1027). This allows the medical team to identify narrowing or an occlusion within a blood vessel.

Please refer to Table 1 for laboratory information.

Table 1

Tests	Normal Values	Patient Results	Analysis
Hemoglobin	13.5-18 g/dL	10.8	Decreased, I think this may be due to a side effect of olmesartan medication.
Hematocrit	37-47% for females	35.2	Decreased, I think this may be due to a side effect from olmesartan or alprazolam medications.
RBC	4.6-6.2 million/mm^3	4.94	WNL
WBC	5000-10,000 /mm^3	10.8	Increased, I think from the inflammation in the left knee.
Platelets	150,000-450,000 /mm^3	277,000	WNL
Neutrophils Absolute	2500-8000 /mm^3	7.5	WNL
Sodium	135-145 mEq/L	139	WNL
Potassium	3.5-5.0 mEq/L	4.2	WNL
Chloride	95-105 mEq/L	104	WNL
BUN	7-26 mg/dL (facility normal value)	28	Increased, I believe it may be due to hydrochlorothiazide treatment.
Creatinine	0.5-1.1 mg/DL for females.	1.23	Increased, I think it may be due to hydrochlorothiazide treatment.
Glucose	70-110	118	Increased, I think it may be due to E.G.'s age, but may also be affected by hydrochlorothiazide treatment.
Carbon Dioxide	21-32	28	WNL

Normal Values from:

- *Mosby's diagnostic and laboratory test reference* (10th ed.)

Medication Information

Please refer to table 2 for medication information.

Table 2

Medication	Class, Dose, & Route	Purpose/Action	Side Effects and is it Potential (P) or Actual (A).	Why is E.G. taking this medication?
Morphine Sulfate	Class: Opioid analgesic Dose: 2-4mg IV q 4hrs PRN	Binds to opiate receptors in CNS to alter perception of pain. Alleviates pain.	Confusion Sedation Hypotension Constipation Respiratory depression	She is taking this medication to help relieve the pain in her left lower extremity.
atenolol (Tenormim)	Class: Beta-blocker, anti-anginal, anti-hypertensive Dose: 50 mg PO q day	Blocks stimulation of $Beta_1$-adrenergic receptors. Decreases BP and heart rate	Fatigue Weakness Bradycardia CHF (P) Pulmonary edema	E.G. is most likely taking due to HTN.
rosuvastatin (Crestor)	Class: Lipid-lowering agent Dose:10mg PO at bedtime	Slows progression of coronary artherosclerosis in patients with CHD.	Diarrhea Flatus Heartburn Rashes Abdominal cramps Constipation Rhabdomyolysis	She is likely taking this to help control her HTN by decreasing the amount of cholesterol in her blood vessels.

Hydrochlorothiazide	Class: Antihypertensive, thiazide diuretic Dose: 12.5 mg PO q day	Increases excretion of Na and water by inhibiting Na reabsorption in the distal tubule. Manages moderate-severe HTN.	Hypokalemia Dehydration (A) Anorexia Dizziness Weakness Lethargy	E.G. is taking this to treat her HTN.
amlodipine (Norvasc)	Class: Anti-hypertensive, Calcium channel blocker Dose: 5mg PO q day	Inhibits calcium transport into myocardial and vascular smooth muscle cells. Manages HTN, angina pectoris, and vasospastic angina.	Headache Peripheral edema Angina Dizziness Nausea (P) Bradycardia Palpitations	I believe that E.G. is taking this medication for treatment of HTN.
olmesartan (Benicar)	Class: Anti-hypertensive, angiotensin II receptor antagonists Dose: 40 mg PO q day	Blocks vasoconstrictor and aldosterone producing effects of angiotensin II at receptor sites. Reduces BP.	Dizziness Hypotension Tachycardia Anxiety (P) Nausea (P) Vomiting (P) Angioedema Back Pain	She is taking this in conjunction with other medication to help manage HTN.
alprazolam (Zanax)	Class: Anti-anxiety, Benzodiazepine Dose: 0.5 mg PO q day	Acts at CNS on many levels to produce an anxiolytic effect. Relieves anxiety	Dizziness Drowsiness Lethargy Confusion Depression Nausea (P) Vomiting (P) Diarrhea Rashes	I think she is taking this for anxiety related to health conditions, such as cancer. The anxiety may also be a side effect of a

				medication.
gabapentin (Neurotonin)	Class: analgesic, anticonvulsant, mood stabilizer Dose: 100 mg PO BID	The mechanism to this drug is unknown. Unlabeled use: Pain, migraine prevention, Bipolar disorder, and diabetic peripheral neuropathy.	Confusion Depression Drowsiness Ataxia Arthralgia (P) HTN (P) Anorexia Suicidal thoughts,	I believe she is receiving this medication for treatment of the intractable leg pain, may also being used for chronic malignant pain if present.
ondansetron (Zofran)	Class: Antiemetic Dose: 4 mg IV q 8 hrs	Prevents and treats nausea and vomiting by blocking effects of serotonin at $5-HT_3$ receptor sites in vagal nerve terminals.	Headache Constipation Diarrhea Dry mouth Dizziness Drowsiness Abdominal pain Increase liver enzymes	I think she is taking this to treat nausea or vomiting related to side effects of other medications since she is not currently having chemotherapy.
guanfacine HCL (Tenex)	Class: Antihypertensive, Centrally acting anti-adrenergic Dose: 1 mg PO q day	Indicated for HTN (Given with thiazide-type diuretics).	Drowsiness Headache Weakness Constipation Dry mouth Nausea Abdominal pain Tinnitus Fatigue	E.G. is taking this because she is also taking a thiazide diuretic for treatment of HTN.

Medication referenced from:

- *Davis's drug guide for nurses* (12th ed.)

Nursing Diagnosis #1

The primary nursing diagnosis that I chose for E.G. is acute pain related to degenerative changes as evidenced by reporting of pain of 8 out of 10, and not wanting to put weight on left lower extremity. E.G. reports pain as being centered around her knee, but also radiating up her thigh and down towards her ankle. She is prescribed Morphine for management of her pain. This is an appropriate nursing diagnosis due to the pain starting on 1/31/2012, and being severe pain that affected E.G.'s mobility and daily activities, and has driven her to seek medical help.

Nursing Diagnosis #2

The second nursing diagnosis that I chose was risk for injury related to weakened skeletal support as evidenced by acute leg pain, diagnosis of osteoporosis and multiple fractures of the spinal column, wrist, and sternum. E.G.'s leg pain puts her at risk for falling and injuring herself, which could lead to another fracture due to her brittle bones. Her osteoporosis also puts her at risk for fracturing a bone from something doing an everyday task. The Morphine Sulfate is a CNS depressant and has side effects like sedation, dizziness, drowsiness, and hallucinations which increase E.G.'s risk for falling and injuring herself. The decrease in hemoglobin and hematocrit can lead to fatigue.

Please see table 3 for goals, interventions, and outcomes.

Table 3

Nursing Diagnosis #1	**Nursing Diagnosis #2**
Acute pain related to patient reporting pain as 8/10 AEB…	Risk for injury related to weakened skeletal support
Supporting Data	**Supporting Data**

Pain rating 8/10 Morphine Sulfate Unwillingness to put pressure on left lower extremity	Left lower limb pain of 8/10 Morphine Sulfate Unsteady gait Fall risk precautions Osteoporosis History of wrist, sternum, and vertebrae fractures. Decreased hemoglobin and hematocrit
Short Term Goal Patient will state a decrease in pain after satisfactory relief measures have been implemented by end of shift.	**Short Term Goal** Patient will remain free from injury throughout shift.
Long Term Goal Patient's pain will be manageable by discharge date.	**Long Term Goal** Patient will remain free from injury for the duration of her admission.
Interventions 1) Assess for presence of pain. Help E.G. identify level of pain, location, type, and intensity as indicated. -Helps identify measures to help alleviate the pain (Craven & Hirnle, 2009, p. 381). 2) Medicate E.G. with Morphine Sulfate in order to provide optimal pain relief every 4 hours as needed. -For pain management (Craven & Hirnle, 2009, p. 1198). 3) Provide comfort measures as needed. - Helps to alleviate debilitating symptoms so client can conserve energy (Craven & Hirnle, 2009, p. 1058) 4) Encourage use of relaxation techniques such as deep breathing exercises as needed. - Provides client with sense of control over pain (Craven & Hirnle, 2009, p. 1193).	**Interventions** 1) Encourage E.G. to use the call light to request for assistance when wanting to get out of bed as needed. - Reduces stress on E.G., which decreases risk for injury (Craven & Hirnle, 2009, p. 791). 2) Provide and encourage use of nonskid socks, and clearing obstacles when assisting E.G. out of the bed, as needed. - Helps prevent slipping and tripping (Craven & Hirnle, 2009, p. 782). 3) Keep bed in lowest position with call light within reach, and leave a bathroom light on so E.G. can see at all times. - Helps prevent falls and promote safety (Craven & Hirnle, 2009, p. 806) 4) Teach and encourage use of handrails in hallways, stairwells, and bathrooms during teaching and as indicated. - Promotes safety (Craven & Hirnle, 2009, p. 806)
Goals Met **STG:** Goal met, after medicating E.G. she reported a pain level of 4/10.	**Goals Met** **STG:** Goal met, patient remained free from injury by end of shift.

LTG: Goal unable to be assessed at this time.	**LTG:** Goal unable to be assessed at this time.

Nursing Diagnoses referenced from:

- *Handbook of nursing diagnosis* (13th ed.).

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