SAMPLE 6/05

Nursing Care Plan Assignment – Q6

Section 1 – Detailed Background Information

Client gender: Male **Age**: 67

Admitting Diagnosis for unit (MSICU):
Post-op CABG x 1

Medical History: **Allergy: Tetracycline (n/v)**

- Diabetes Mellitus, Type II
- Hypertension
- Hyperlipidemia
- Severe degenerative disk disease of cervical spine
- Benign prostatic hyperplasia; urethral stricture; TURP 2002
- Hx of "mild MIs" x 3 (last 2002);
- osteoarthritis
- stable angina
- CAD
- GERD
- Bowel resection 2000 for GI bleeding
- Hx of EtOH use (quit 10 years ago)
- Hx of tobacco use (quit 7 years ago)

Diagnostic Tests
Mr. X was admitted to MSICU POD 0 for CABG x 1. Several days previously he had undergone an angiography and cardiac echo in the Cardiac Cath. Lab. This was due to complaints of increasing and severe SOB as well as right arm pain that had been worsening over the last several months including when at rest. Due to history (described above, specifically the 3 "small" MI's, CAD, DM and HTN) and presenting symptoms, coronary arterial occlusion of some degree was suspected.

Mr. X's angiography revealed significant stenosis in the area of the left coronary artery and a CABG was recommended. The Echo did not reveal any significant ventricular or valve issues.

Pathophysiology of Disease Process
The cause of Mr. X's need for a CABG was due to several risk factors. A history of CAD (unknown date of diagnosis) indicates an advanced disease process as the result of atherosclerosis. Over the years, fatty streaks progressed to plaque and then lesions. The collateral circulation developed over these years that helped maintain adequate circulation finally was not able to keep up with demands.

Risk factors that contributed to Mr. X's disease process include:

- HTN – elevated pressures injure the endothelial lining of arteries; the atherosclerotic process then compounds the injury by decreasing lumen size and elasticity
- Hyperlipidemia – an increase in LDL's leads to an increase in the damage done to arterial walls
- Smoking – decreases oxygen to heart and acts as vasoconstrictor thus causing increases in BP
- Cultural – Mr. X is a 67-year-old African-American. This race has a noticeably earlier onset of CAD.
- Diabetes Mellitus – increases cholesterol levels and contributes to the damaged vessels

Laboratory Data

- **Blood Glucose** reference range 70 – 115mg/dL. Mr. X had blood glucose levels evaluated 10 times throughout date of care (24 hour period). Values ranged from 61 – 236 and are covered by a sliding scale and a PO med (Glyburide). Mr. X has a history of uncontrolled DMII. That combined with the stress of major surgery can account for the variety of values seen this day.

- **CBC** was tested 2x during the date of care (24 hour period). His Hgb, Hct and RBC were on the low side but did not require any interventions. RBC was 4.13 and 4.09 (normal range is 4.4 – 6M/ul). HGB was 12.5 and 12.3 (normal range 14 – 17g/dl). HCT was 36.7 and 36.3 (normal range 39 – 51%). If these values were significantly lower (e.g. a HCT of 25 or 26) he would most likely be transfused a unit of packed RBC's. These values are acceptable given his stage of recovery.

- **Coag** was tested 2x during the date of care (24 hour period). His APTT (evaluated when on heparin therapy which he is not) was WNL (31.5 seconds and 30 seconds with a range of 24.0 – 37.5 seconds). The INR is used to monitor oral anticoagulation therapy (which he is not) was also WNL. They are tested after surgery to provide data that is used to judge bleeding and thrombic risks.

- **Albumin** was tested 3x. It was low (2.4 – 2.5 with a normal range of 3.0 – 5.5 g/dL. This is not uncommon and did not require intervention. Albumin is a protein and this test provides some indication on the patient's nutritional status. Albumin works on maintaining osmotic pressure for integrity of fluid remaining in intravascular space. A decrease can cause edema (shift from Intravascular to extra).

- **K** was tested 3x. It was WNL (4.4) with a normal range of 3.5 – 5.5 mEq/l. There is, however, a sliding scale replacement that is often put in place for post-op heart patients to keep the K high to help prevent arrhythmias.

- **BUN and Creatinine** was also tested 3x and was WNL. The normal range for BUN is 6 – 26 mg/dl and Creatinine is 0.4 – 1.3 mg/dl. These indicate kidney function. His body is processing the fluids.

- **Mg** was also tested and WNL. The normal range is 1.5 – 2.4 mg/dl. Mg affects K, Ca and protein. The Mg is necessary also for neuromuscular activity. Thus Mg decreased Mg would also affect arrhythmias. This electrolyte also usually has a sliding scale for replacement if necessary.

- **Troponin I** was tested and found to be WNL. The range is 0 – 0.2 ng/mL. Troponin is a cardiac enzyme that can be an indicator for MI. An elevation can be seen in as little as 4-6 hours after an event and remain elevated for 4-9 days.

- **ABG's** were checked 1x. ABGs are a status check of oxygenation and ventilation. Mr.X was on 2L n/c so his FIO at 28 was slightly above RA. His results were acceptable for the unit. Ph 7.455 (slightly alk normal 7.35 – 7.45). PCO2 of 32.3 mm Hg also slightly alk (normal 35 – 45). The HCO2 was 22.7 WNL (22 – 26 mEq/L). Po2 was 75 mm Hg slightly low (80 – 100). The latter value shows oxygenation (pretty good but could be a little higher but can be rectified by increase in O2 flow). The ventilation was also good showing a slight case of resp. alkalosis (can be due to a little hyperventilation).

Medications – past 48 hours (POD day 7 and 8 in MSICU)

Med	Dose	Freq	Route	Rationale	Action	Approp.
Combivent Inhaler (ipratoprium bromide 18 mcg/albuterol 103 mcg per)	2 puffs	6x per day	Inhalation	post-op resp support	anti-cholinergic and adrenergic bronchodilator	Y
Furosemide (Lasix)	10 mg	4x per day	IVP	reduce pre-load, HTN and help maintain fluid balance post-op	loop diur	Y
Nitroglycerine	2" of 2%	2x per day	Topical	reduce O2 consumption, reduce BP; manage angina		Y
Regular Human U-200 ISS		4x per day	SC	short-acting adjunct to Glyburide due to increased stressors of hospitalization		Y
Gatifloxacin	400 mg	1x per day	PO	UTI on admission; broad spectrum antibx fluoroquinolones		Y
Glyburide	5 mg	2x per day	PO	control of DM	stimulates release of insulin	Y
Omeprazole	20 mg	2x per day	PO	GERD and prophylaxis for hospitalizations and meds	PPI	Y
Aspirin	325 mg	1x per day	PO	anti-platelet aggregation for prevention of stroke, MI		Y
Clopidogrel	75 mg	1x per day	PO	anti-platelet aggregation for prevention of stroke, MI		Y
Docusate	240 mg	2x per day	PO	stool softener to ease passage to decrease risk of Valsalva ; dose higher due to post op		
Felodipine	20 mg	1x per day	PO	CCB for HTN and angina; vasodilator	dosage usually 10mg/day	--
Ferrous Sulfate	325 mg	3x per day	PO	iron supplement – therapeutic dose ok in size		
Ibuprofen	600 mg	3x per day	PO	NSAID; prophylaxis for pericarditis; dosage usually not more than 120mg/d		---
Metoprolol	100 mg	2x per day	PO	beta blocker; manage htn, angina, prevent MI; arrhythmia; decrease HR		Y
Potassium Chloride	20 mEq	2x per day	PO	Supplement/replace due to diuresis, post-op; keep level high; prevent arrhythmia		Y
Simvastatin	40 mg	1x per day	PO	cholesterol; inhibits HMG-CoA;		Y

Interactions and special considerations

- Combivent has minimal systemic absorption; low risk of complications
- Furosemide – check K and Mg especially; main issues are fluid/electrolyte in general
- Potassium Chloride can present unpleasant GI side effects; one reason prophylaxis of omeprazole is also prescribed; take with meals; levels kept high (close to 5) post-op to prevent arrhythmia; Lab – check K daily
- Nitroglycerine, Metoprolol, and Lasix IV can produce hypotension and dizziness – that combined with being post-op indicates safety/fall potential risk; caution with an additive effect.
- Fluoroquinolones can cause arrhythmias. Mr. X had significant PVC's that had caused him to stay up in ICU. There are also significant GI upsets that can occur.
- Ferrous sulfate can cause uncomfortable GI side effects; again there is omeprazole ordered.
- Simvastatin can cause GI side effects

Section 2 – Critical Thinking Worksheet

AIR (Resp)

- **Basic Assess:** RR 20; lung sounds clear bilat but diminished over bases; No SOB; O2 Sat 95% and greater

- **Comprehensive:** Hx tobacco use (quite 7 years ago); ABG's show slightly resp alk with gases of Oh 7.455, PCO2 of 32.3, HCO2 22.7. Oxygenation showed 75 mm Hg (slightly low); 2L O2 via n/c; hx of SOB over recent months; Meds that can affect respiratory system include: Combivent (inhaler that is a bronchodilator); lung x-ray shows some right pleural effusion

- **Rationale:** Due to patient's recent surgery, he has a compromised respiratory situation. When this is combined with his age and tobacco hx he presents with some serious risks as well.

- **Nursing Diagnosis: Risk for impaired gas exchange** related to alveolar-capillary membrane changes **Risk for infection** (respiratory) related to stasis of respiratory secretions.

- **Modify/predict outcomes:** 1) Continue to assess lung sounds q 4h - assessment includes presence of adventitious breath sounds, respiratory rate, depth, effort, use of accessory muscles and nasal flaring, 2) continue to remind on use of incentive spirometer, 3) Monitor O2 Sats, 4) Assess ABG's q shift, 5) Position patient in semi-fowler's to increase oxygenation. An upright position allows for greater lung expansion. 6) Educate patient to deep breathe using abdominal muscles and cough. This can help with excreting secretions and using the abdominal muscles will make for a more forceful cough. 7) Provide for adequate fluids to liquefy secretions. 8) Observe sputum for color and odor to detect possible infection. 9) Encourage ambulation to prevent stasis of secretions.

WATER (CV and Skin) and Food

- **Basic Assess:** Temp 37.5, SR with frequent PVC's, couplets and bigeminy, MAPs normal to hypertensive (hydralazine PRN ordered but not given); right radial arterial line; right internal juggler central line; pulse 80's, no edema; ate 80 % breakfast and lunch; pulses palpable; r leg inner thigh wound dry and well approximated; mediastinal incision clear and well approximated

- **Comprehensive:** Meds see below in Rationale; fluid balance negative; FS values range from 61-236; hx of DM II (poorly controlled), HTN, Hyperlipidemia, "mild" x 3 MI, GERD, stable angina, CAD, ETOH hx (quit 10 years ago); arrhythmia; cardiac and diabetic diet; labs reviewed and explained in Section 1

- **Rationale:** Lasix (furosemide) can significantly affect fluid and electrolyte balance (can cause hypotension); Combivent (bronchodilator) can cause chest pain and palpitations; Nitroglycerin can cause tachycardia and hypotension; ASA and Clopidogrel can cause

bleeding; felodipine and potassium can cause arrhythmias; disease process of CAD discussed in Section 1; Mr. X is on sternal precautions such as no lifting arms straight above head, no lifting or pushing or pulling weight > 10 lbs - this is for protection of the mediastinal incision.

- **Nursing Diagnosis: Risk for infection** related to major surgical procedure; **Risk for decreased cardiac output** related to arrhythmias; **Altered nutrition**, less than body requirements related to surgery and intensive care hospitalization as evidenced by low albumin levels 2.4 g/dL with a normal range of 3.0 – 5.5 g/dl)

- **Modify/predict outcomes:** It is important to monitor Mr. X for signs/symptoms of infection including assessing surgical sites, temperature, and labs. In addition, Mr. X's arrhythmias were asymptomatic but a cause for concern nonetheless. Further discussion with Mr. X revealed that he had a history of these abnormal rhythms. The plan is to continue to monitor cardiac rhythms as well as medications (metoprolol). Regarding CAD, Mr. X. is still at significant risk for ischemia; continue meds such as beta blocker, Plavix and ASA and monitor for s/s such as chest pain. Regarding nutrition, Mr X. was educated regarding diabetic diet, salt and cholesterol restriction and increased low fat high protein foods, food preferences were also discussed with nutrition group; goals were established in avoiding sweets, salt and process meats and using low salt soups.

ACTIVITY/REST

- **Basic Assess:** No complaints of pain; able to use ISS; oob to chair; alert; able to follow commands; assist x 2 to chair

- **Comprehensive:** Meds (see below in Rationale); hx of osteoarthritis and disk disease of cervical spine;

- **Rationale:** Combivent (bronchodilator) can cause nervousness and restlessness; Nitroglycerin, felodipine and gatifloxacin can cause headache; gatifloxacin can also cause drowsiness and insomnia; metoprolol can cause fatigue and weakness as well as impotence;

- **Nursing Diagnosis: Activity intolerance** related to surgical procedure and medical history as evidenced by extended bedrest previous several days. **Impaired physical mobility** related to surgical procedure as evidenced by required assistance with movement out of bed and assistance with ADL's

- **Modify/predict outcomes:** gradually increase activity to increase tolerance; medicate PRN to allow for more activity; encourage increasing participation in ADL's as the client is now in a position to begin the rehabilitative process

ELIMINATION

- **Basic Assess:** 2 medium BM's in previous 24 hours; BS present; abd soft; Foley catheter draining to gravity with UOP 100-200 cc/hour clear, yellow urine;

- **Comprehensive:** Meds (see Rationale below); labs explained in Section 1; BPH with urethral stricture need to keep Foley in place; Bowel resection in 2000 for GI bleeding;

- **Rationale:** gatifloxacin, omeprazole, simvastatin, potassium chloride, ibuprofen, ferrous sulfate, ASA and Clopidogrel can cause GI upset such as nausea, diarrhea and abd. pain; Lasix increases UOP and is important in maintaining fluid balance (in this case the desire to be negative).

- **Nursing Diagnosis:** Impaired urinary elimination related to presence of mechanical device (Foley catheter)

- **Modify/predict outcomes:** Assess Foley q shift including receptacle, tubing and security of device; clean Foley area near insertion site with mild soap and water q shift

SOLITUDE AND SOCIAL INTERACTION

- **Assess (general):** Awake, pleasant and alert; lives with wife in Tracy. Wife is staying at VA Hometel and will be part of his recovery; Mr. X is on SDI that needs to be extended;

- **Rationale:** Understanding the patient's support network at home is important for discharge planning, expected outcomes of care

- **Nursing Diagnosis:**

- **Modify/predict outcomes:**

PREVENTION OF HAZARDS

- **Basic Assess:** SR x 2 up, RN at bedside; appropriate footwear for transfer; emergency airway equipment at bedside; central line available for emergency medications; continuous cardiac monitoring;

- **Comprehensive:** Nitro can cause hypotension and dizziness; Gatifloxacin (a fluoroquinolone) can cause dizziness; multiple IV sites including right IJ central and right radial arterial

- **Rationale:** It is important to understand medications potential side effects in order to properly assess and implement interventions if appropriate.

- **Nursing Diagnosis:** Risk for infection related to IV sites (listed above) and surgical incision (mediastinal from CABG and right interior leg from graft)

- **Modify/predict outcomes:** Mr. X still requires assistance with movement and ADL's. Increasing independence will need to be monitored for issues with gait and orthostasis. While Mr. X is hospitalized, he is at risk for infection. Assess for signs/ symptoms of infection including redness or increase in leakage of wound, temperature changes, discomfort and WBC. It is important that his care plan progress smoothly and steadily with as short a stay as possible.

DEVELOPMENTAL

Mr. X is a pleasant, 67 year African-American male who has significant problems in his health history. He lives with his 2nd wife and one of his children in a rental home. The patient has some college and worked in various positions until his health forced him to apply for SDI earlier this year. His history is significant for tobacco and alcohol abuse. The patient states he had his last drink 10 years ago and quit smoking 15+ years ago.

He considers himself a "man of faith" and received solace from the chaplain visits. His wife and daughter are in good health and will be able to provide a supportive environment for recovery. It is important that the wife and daughter are educated regarding food choices for Mr. X and how to monitor his blood glucose levels. His past medical history indicates poor monitoring and control. Education about the value of the monitoring as it relates to Mr. X's health may help improve compliance.

Mr. X is at Erickson's Ego Integrity vs Despair stage. It is normal at this time of life to reflect upon accomplishments and contributions and ask yourself if you have "done good" over life. An unhealthy preoccupation with missed opportunities will inhibit thinking about the positive contributions that your life has made. Mr. X has a chance to move to the Ego Integrity. I think it may be difficult because history would seem to indicate a struggle to pass through the previous adult phases. With help from the VA system and his support team at home this maybe the opportunity Mr. X needs to move into the healthy part of this phase.

HEALTH-DEVIATION SELF-CARE REQUISITES – Actual and Risk For

ACTUAL:

*Decreased cardiac output related to dysrhythmia and depressed cardiac function as evidenced by need for high-risk intervention and continued arrhythmias.

*Ineffective health maintenance related to deficient knowledge regarding care of diabetic regimen, lifestyle change needs and new diet restrictions as evidenced by articulation of lack of knowledge.

Imbalanced fluid volume related to recent major surgery as evidenced by need for constant monitoring and interventions related to goal of keeping somewhat negative (a fine line to decrease workload of heart but still have sufficient volume to perfuse).

Altered nutrition less than body requirements related to major surgery and intensive care hospitalization as evidenced by low albumin levels.

Impaired urinary elimination related to presence of Foley catheter.

Activity intolerance related to musculoskeletal problems including increasing stenois of coronary arteries, resultant major surgery and delayed recovery due to medical history as evidenced by presence of arrhythmias and increasing SOB.

Impaired physical mobility related to surgical procedure as evidenced by required assistance with movement out of bed and assistance with ADL's.

RISK:

*Risk for infection related to decreased ventilation, hospitalization, impaired circulatory system and open, recent surgical incisions.

Risk for noncompliance related to side effects of treatments (HTN, DMII, CAD, etc.) and lack of understanding regarding importance of controlling the various diseases.

Risk for impaired gas exchange related to alveolar-capillary membrane changes, an aging related process.

Section 4 – Cultural Aspects of Care

Mr. X was a 67-year-old African American male who served in the US Army during the late 1950's. During his enlistment Mr. X was a phlebotomist at US Army bases in the southern part of the US (Mississippi). An example of Mr. X's dry sense of humor was evident when he compared being shipped to Mississippi just as dangerous for him as was an assignment to Korea.

In his later years, Mr. X's health has been more difficult to maintain. This latest hospitalization will require an extensive recuperation. He is fortunate to have the family structure and relationships that can facilitate recovery. This family structure is a component of the African American Culture. (p.41 Culture and Nursing Care, Lipson, et.al 2002).

Another area that it is hoped that Mr. X can draw support from is his local church. The church community is a source of strength and friendship and it is hoped that they will be able to provide support to his caregivers and provide Mr. X with purpose and goals. The church is also a cultural identification of the black community. (p41 Culture…)

Mr. X has a lot of work ahead of him to make a full recovery. He has need for his family and community to provide the support he needs to successfully regain his strength and hopefully improve his health.

Documented Patient Care Plan (Diagnosis #1)

Nursing Diagnosis U=universal D=developmental HD=health deviation	**Patient Goals** LT= long term ST=short term	**Nsg Interventions** WC=wholly compensatory PC=partially compensatory S/E=supportive/educative	**Rationale**	**Evaluation**
Decreased cardiac output related to dysrhythmia and depressed cardiac function as evidenced by need for high-risk intervention and continued arrhythmias = HD	ST= hemodynamically stable including BPP systolic 90-140, MAPs in 80s, decrease in PVC's to no more than 5 in 1 hour, no couplets, afebrile, HR 50—90. LT= Able to walk from house to sidewalk without SOB by end week 3. Able to walk 100 yards without SOB by end week 5.	Assess q2h for symptoms of decreased cardiac output: crackles in lung bases, neck vein distension, decreased peripheral pulses, cold clammy skin. WC Monitor lab data q shift for changes in ABG's and electrolytes (esp. K and Mg) WC Ensure K and P02 levels are within normal limits. Administer anti-arrhythmic medications as ordered. Confer with MD regarding further investigation of arrhythmia. Gradually increase activity as condition stabilizes. Encourage slower paced activities of short duration.	Quick response to changes in hemodynamic status can potentially prevent cardiogenic shock. Electrolyte imbalance (esp. K and Mg) is a significant risk for arrhythmia. Common reason for arrhythmias.	Mr. X underwent significant monitoring of physical symptoms and laboratory values. K was replaced if necessary per sliding scale. Client was oob to chair x1 for approximately 1 hour. Cardiology consult and further investigation yielded information that client has history of arrhythmias including PVC's. No change in current orders or medications. PVC's decreased throughout the day and blood pressures remained stable.

Documented Patient Care Plan (Diagnosis #2)

Nursing Diagnosis U=universal D=developmental HD=health deviation	**Patient Goals** LT= long term ST=short term	**Nsg Interventions** WC=wholly compensatory PC=partially compensatory S/E=supportive/educative	**Rationale**	**Evaluation**
Ineffective health maintenance related to deficient knowledge regarding care of diabetic regimen, lifestyle change needs and new diet restrictions as evidenced by articulation of lack of knowledge.	ST Patient and family verbalize understanding and importance of new health regiment by discharge. LT Patient and family adhere to new regimen Discharge plus 2 months	Assess and document family and patient knowledge of changes necessary from pre-hospitalization lifestyle = PC/SE Design a plan that is clearly understood by patient and family that can be followed on a consistent basis. SE Refer family and patient to VA resources for Diabetes and Cardiovascular health. Include group meetings, classes and literature Provide encouragement and a mind-set of the ability to change. Be available to listen and respond to questions from patient and family.	Provides baseline to design future interventions. Verbal reinforcement of written instructions that are personalized has shown to be an effective intervention. People respond to positive reinforcement.	The early stages of this care plan were in place with nutritional and post op teaching. A majority of the teaching for life-style changes would be implemented as client left ICU.

Documented Patient Care Plan (Diagnosis #3)

Nursing Diagnosis U=universal D=developmental HD=health deviation	**Patient Goals** LT= long term ST=short term	**Nsg Interventions** WC=wholly compensatory PC=partially compensatory S/E=supportive/educative	**Rationale**	**Evaluation**
Risk for infection related to decreased ventilation, hospitalization, impaired circulatory system and open, invasive lines and recent surgical incisions	St/LT Free from noscomial infections; free from infection after release	Assess for signs and symptoms of infection q8h. This includes lab values and physical review. Recognize that chronically ill older adults such as those with history of DM II and CAD have a significantly higher risk of infection. Maintain aseptic technique with regard to all aspects of care, especially with regard to IV lines. Encourage patient to cough and deep breath q2-q4h. Administer antibiotic therapy exactly as prescribed. Assess for signs of mental status change.	Catching early signs/symptoms of infection can lead to prompt treatment and decreased severity. Vigilance on monitoring may help prevent infection or decrease severity. Promotes lung expansion, decreases risk of atelectasis and noscomial infection (pneumonia) Mental status change is one of the major symptoms of an infection in the older adult.	The longer Mr. X is in the hospital, the greater the risk of infection. It is important that he make progress to the point of discharge. Some pericarditis and pleural effusion were noted on a recent X-Ray. Mr. X was started on regimen of 600 mg Ibuprofen TID to help with pain as well as manage early potential complications.