Total Knee Arthroplasty (TKA)
UNFOLDING Reasoning

John Roberts, 68 years old

Primary Concept		
Infection		
Interrelated Concepts (In order of emphasis) • Perfusion • Tissue Integrity • Pain • Clinical Judgment • Patient Education • Communication		
NCLEX Client Need Categories	**Percentage of Items from Each Category/Subcategory**	**Covered in Case Study**
Safe and Effective Care Environment		
• Management of Care	17-23%	
• Safety and Infection Control	9-15%	
Health Promotion and Maintenance	6-12%	
Psychosocial Integrity	6-12%	
Physiological Integrity		
• Basic Care and Comfort	6-12%	
• Pharmacological and Parenteral Therapies	12-18%	
• Reduction of Risk Potential	9-15%	
• Physiological Adaptation	11-17%	

UNFOLDING Reasoning

History of Present Problem:

John Roberts is a 68-year-old Caucasian male who is 6 feet tall (180 cm) and weighs 260 lbs. (118.2 kg) (35.3 BMI). He has a history of diabetes, hypertension, and hyperlipidemia and smokes one pack per day since the age of 18 (50 pack- years). He has osteoarthritis (OA) in his right knee and the pain has significantly increased over the past year.

John had a right total knee arthroplasty (TKA) four days ago and refused to go to a rehabilitation center because of the expense and distance from his home. He decided to have physical and occupational therapy home health services. You are the home health nurse that will be caring for him, and you have arrived for his first home visit.

Personal/Social History:

John is a retired lumberjack who enjoys being outdoors. He has become increasingly frustrated because he is not able to do the outdoor activities he once did. He has been married for 50 years to Mary and lives in the rural Appalachian Mountains and must travel a long distance for basic medical care.

What data from the histories are RELEVANT and must be interpreted as clinically significant by the nurse?

RELEVANT Data from Present Problem:	**Clinical Significance:**
Diabetic Hypertension Hyperlipidemia 50 pack year smoker Total knee arthroplasty 4 days ago Osteoarthritis in right knee	Untreated diabetes, hypertension, and hyperlipidemia can lead to poor peripheral circulation due to plaque buildup. This can exacerbate preexisting conditions like osteoarthritis because without proper blood flow the bones and knee joint will not get the proper nutrients to heal. Years of smoking also negatively affect the peripheral circulation; smokers tend to take longer to heal Osteoarthritis is deteriorative joint condition
RELEVANT Data from Social History:	***Clinical Significance:***
Retired lumberjack, active lifestyle until recently Married for 50 years. Rural living	Lumberjack is a physically demanding job, so he may have developed a high pain tolerance. Might tend to under-report his pain. Rural living—access to medical care may be limited, he may choose not to seek medical help due to long commute and time it takes

Patient Care Begins:

Current VS:	**P-Q-R-S-T Pain Assessment:**	
T: 100.1 F/37.8 C (oral)	**P**rovoking/Palliative:	Movement of the knee increases pain; Ice and pain med relieve
P: 80 **(**regular)	**Q**uality:	Constant, dull, throbbing
R: 14 (regular)	**R**egion/Radiation:	Right Knee
BP: 140/85	**S**everity:	7/10
O2 sat: 92% RA	**T**iming:	Constant ache, but continuous after activity

What VS data are RELEVANT and must be interpreted as clinically significant by the nurse?

RELEVANT VS Data:	**Clinical Significance:**
P: moving right knee increases pain, RICE and pain med relieve Q: constant, dull, throbbing S: 7/10 T: constant ache that is continuous after activity BP: 140/85	BP may be elevated due to pain. Pain (PQRST) assessment is significant because it lets me know what makes it better and what makes it worst The pain in is his right knee impedes him from being as active as he would normally be 7/10 suggest that the pain is getting worst not better like it should. 4 days after surgery pain should be well controlled and more mild/less severe

Current Assessment:	
GENERAL APPEARANCE:	Sitting, appears tense and grimaces with movement of right lower leg
RESP:	Breath sounds with crackles at bases that clear with a cough, nonlabored respiratory effort
CARDIAC:	Pink, warm & dry, no edema, heart sounds regular with no abnormal beats, pulses strong, equal to palpation at radial/pedal/post-tibial landmarks, brisk cap refill
NEURO:	Alert & oriented to person, place, time, and situation (x4)
GI:	Abdomen flat, soft/nontender, bowel sounds audible per auscultation in all four quadrants
GU:	Voiding without difficulty, urine clear/yellow
SKIN:	Skin warm and clammy, 8-inch (20 cm) right knee incision closed w/staples, erythema, and edema surrounding, hypersensitivity to touch in the area surrounding incision as well as the entire knee; occlusive dressing removed to reveal a large amount of serous drainage with tinges of yellow drainage

What assessment data is RELEVANT and must be interpreted as clinically significant by the nurse?

RELEVANT Assessment Data:	Clinical Significance:
GA: sitting, appears tense and grimaces with movement of RLL	Demonstrates typical/classical signs of being in pain, can tell that something is bothering him
RESP: crackles at bases that clear after cough	Crackles that clear suggest that he has some bronchial deficit due to years of somking
SKIN: skin warm and clammy, 8 in incision on right knee closed c/staples, erythema and edema surrounding site, hypersensitive to touch; dressing removed revealing large amount of serous drainage c some yellow drainage	Tinges of yellow drainage, serous drainage, warm clammy skin and sensitivity to touch suggest infection at site of incision

Because the clinical data the nurse has collected suggests an infection, the RN receives the following orders from the orthopedic primary care provider:

Collaborative Care: Medical Management

Care Provider Orders:	Rationale:
Complete Blood Count (CBC) Basic Metabolic Panel (BMP) Lactate Blood culture x2 sites Swab of incisional site for culture and sensitivity Urinalysis (UA) Take collected labs to the nearest hospital for immediate interpretation	• CBC will provide information about RBC, WBC, etc; let me know if he is actively fighting an infection. • BMP shows kidney function and electrolytes; will let us know if he is dehydrated and how well his kidneys are functioning since being a diabetic they can be taxed • Lactate acid will show us if he is sepsis • Blood cultures, UA, and culture and sensitivity swab at incision site will help determine what type of infection it is. Is it bacterial, viral, fungal, etc. • Immediate interpretation since he is high risk, need to know what type of infection it is so that the right treatment can get started ASAP

Lab Results:

Complete Blood Count (CBC:)	Current:	High/Low/WNL?	Prior to Hospital Discharge:
WBC (4.5–11.0 mm 3)	16.8	high	10.5
Neutrophil % (42–72)	88	high	60
Hgb (12–16 g/dL)	12.5	WNL	11.5
Platelets (150-450 x10^3/µl)	306	WNL	300

What lab results are RELEVANT and must be recognized as clinically significant by the nurse?

RELEVANT Lab(s):	Clinical Significance:	TREND: Improve/Worsening/Stable:
WBC: 16.8 Neutrophil: 88%	• Increasing WBC is positive proof that he does have an infection • Neutrophillia signifies that the most likely cause of infection is bacterial	Worsening worsening

Basic Metabolic Panel (BMP:)	Current:	High/Low/WNL?	Prior to Hospital Discharge:
Sodium (135–145 mEq/L)	137	WNL	136
Potassium (3.5–5.0 mEq/L)	4.0	WNL	4.3
Glucose (70–110 mg/dL)	160	High	115
Creatinine (0.6–1.2 mg/dL)	1.1	WNL	1.2

What lab results are RELEVANT and must be recognized as clinically significant by the nurse?

RELEVANT Lab(s):	Clinical Significance:	TREND: Improve/Worsening/Stable:
Glucose	Stress from infection increasing blood glucose levels in body	Worsening

Misc. Labs:	Current:	High/Low/WNL?	Previous:
Lactate (0.5-2.2 mmol/L)	2.2	WNL	n/a

RELEVANT Lab(s):	Clinical Significance:	TREND: Improve/Worsening/Stable:
Lactate	Negative for sepsis	Stable

Urine Analysis (UA:)	Current:	WNL/Abnormal?
Color (yellow)	Yellow	WNL
Clarity (clear)	Clear	WNL
Specific Gravity (1.015-1.030)	1.025	WNL
LET (Leukocyte Esterase) (neg)	Neg	WNL
MICRO:		
RBC's (<5)	0	WNL
WBC's (<5)	2	WNL
Bacteria (neg)	Neg	Neg
Epithelial (neg)	Neg	Neg

What lab results are RELEVANT and must be recognized as clinically significant by the nurse?

RELEVANT Lab(s):	Clinical Significance:
	Kidney functions is normal not a urinary tract infection

Lab Planning: Creating a Plan of Care with a PRIORITY Lab:

Lab:	Normal Value:	Clinical Significance:	Nursing Assessments/Interventions Required:
WBC **Value: 16.8**	**Critical Value: <1.0 K or >50 K**	WBC increase as immune system continues to fight infection	• Monitor temperature and vital signs • Monitor WBC via CBC • Encourage fluid intake • Monitor intake and output • Monitor for signs and symptoms of worsening infection • Administer antibiotics STAT • Dressing change, assess site

Clinical Reasoning Begins…

1. ***What is the primary problem your patient is most likely presenting?*** *The primary problem my patient is most likely presenting is an infection at the surgical site*

2. ***What is the underlying cause/pathophysiology of this primary problem?***

The underlying cause of this primary problem is surgical infection site provided entry for bacterial pathogen.

Collaborative Care: Admission Orders/Medical Management

Care Provider Orders:	Rationale:	Expected Outcome:
Dx: Infection s/p Rt TKA Admission orders: Inpatient status – telemetry Vital Signs: per policy Activity: Bed rest Physical therapy (PT) evaluation and treatment 1800 ADA 2 gram Na diet Establish peripheral IV and start 0.9% NS at 100 mL/hour **NKDA** Home Medications: ***metformin 500 mg PO BID** ***aspirin 81 mg PO daily** ***lisinopril 20 mg PO daily** ***lovastatin 40 mg PO daily** ***meloxicam 15mg PO daily** **Clindamycin 600mg IV every 8 hours** **Pantoprazole 40mg IV daily** Morphine 2-4mg IV PRN pain every 4 hours acetaminophen 325 mg 2 tabs PO every 4-6 hours PRN fever >101 F/38.3 C Blood glucose before meals and HS Oxygen per nasal cannula. Titrate to O2 sat >95% I & O Labs: CBC, BMP repeat in 4 hours Lactic Acid	• Telemetry to monitor heart rate and heart rhythm • Bed rest will promote rest and relaxation, decrease pain exhibited from surgical site infection • PT will help with exercise to promote circulation and help keep strength • Low sodium diet will help decrease retention of fluid • IV peripheral site to administer fluids and antibiotics quickly • Metformin is an antidiabetic med • Aspirin helps with pain • Lisinopril helps with BP • Lovastatin will help treat hyperlipidemia • Meloxicam is an NSAID used to treat osteoarthritis • Clindamycin is an antibiotic • Pantoprazole prevents GERD • Morphine provides added pain relief • Acetaminophen for fever • Blood glucose AC HS to monitor blood sugar levels • Supplemental O2 incase oxygen saturation decreases and he demonstrates difficulty breathing • Intake and outtake monitor for fluid retention • Labs—CBC, BMP, and Lactate to track if infection is improving or worsening • CXR to see if any fluid in lungs	Heart rate and rhythm will be stable, no signs of dysrhythmias Pt will state a decrease in pain Pt will be able to do exercises prescribed by PT Pt strength in affected limb will increase Low sodium diet will decrease BP, fluid retention Fluids and antibiotics will be administered promptly, iv site will be free from signs of infiltration Pt will take his antidiabetic medication as prescribed, blood sugar level will decrease and become stable Pain will decrease Triglyceride panel will show a decrease in hyperlipidemia WBC will decrease as antibiotics treat infection Fever will decrease Oxygen saturation will stay >95% Pt will be free of signs or symptoms of dehydration, fluid overload Labs will show that infection is decreasing, WBCs will decrease, Lactate will not be positive of sepsis and BMP will show improved kidney function and electrolyte levels Lung sounds will be clear bilaterally

Chest x-ray		

PRIORITY Setting: Which Orders Do You Implement First and Why?

Care Provider Orders:	Order of Priority:	Rationale:
• Oxygen per nasal cannula. Titrate to O2 sat >95% • Blood glucose before meals and HS • Vital signs • Establish peripheral IV and start 0.9% NS at 100 mL/hour • Clindamycin 600 mg IV every 8 hours • Morphine 2-4 mg IV PRN	• O2 sat >95%,VS, Establish IV, Clindamycin 600 mg IV, Morphine 2-4 mg IV PRN, and BGL AC HS	Oxygen saturation >95% is primary implementation because with the crackles heard upon auscultation of lung, a lower oxygenation saturation percentage can signify that oxygenated blood is not getting to vital organ. VS signs is important because need to monitor in case his condition is worsening. Peripheral IV access is important for quick access for treatment with medicine. Clindamycin will treat the infection which is a bigger concern than pain is. Morphine can be administer when patient declares he is in pain. BGL AC HS to see if blood glucose levels are stabilizing or getting worst. If it is getting worst need to treat, check for signs of hyperglycemia, treat before DKA

Collaborative Care: Nursing

3. ***What nursing priority (ies) will guide your plan of care?*** *(if more than one-list in order of PRIORITY)*
   Oxygen saturation >95%, infection, pain, blood sugar checks

4. What interventions will you initiate based on this priority?

Nursing Interventions:	Rationale:	Expected Outcome:
• Administer supplemental Oxygen via nasal canula until O2 saturation >95% • Monitor VS for signs and symptoms of worsening infection • Monitor WBC, neutrophil levels • Ask patient about pain level • Monitor VS for increasing sign of pain • Give medication for treat, • Teach relaxation methods for pain • Check blood sugar 30 minutes before meals and bed	• O2 sat <95% could signify body is not getting oxygenated blood to vital organs • Increase temperature = fever; a sign that infection could be worsening as body is fighting harder to treat it. • Increase heart and blood pressure could signal that pt is in pain • Medications like morphine and NSAID are used to treat pain • If you he fearfull of becoming addicted; methods like meditation have shown to reduce pain. • Checking BGL before meals and bed time allows to see if it getting better or worst	• O2 >95% • Temperature will be stable, <101 °F • Heart rate will remain WNL, BP will be stable (130/80 mm Hg) • Pt will report decrease in pain • BGL will be stable

5. What body system(s) will you assess most thoroughly based on the primary/priority concern? *I will assess the respiratory, integumentary and musculoskeletal systems based on the primary concern.*

6. What is the worst possible/most likely complication to anticipate? *The worst possible/most likely complication to anticipate would be the infection spreading, becoming systemic and evolving into sepsis and cardiogenic shock.*

7. What nursing assessments will identify this complication EARLY if it develops?

Nursing assessment that will identify this early will be labs. His lactate acid will increase, WBC and neutrophils will increase. Temperature will increase, the skin around the incision will become more sensitive to touch, redder. The wound itself will have more serous drainage with yellow crust. Bp will continue to decline, hear rate increase. At risk at developing cardiac dysrhythmias

8. What nursing interventions will you initiate if this complication develops? *Nursing interventions that I will initiate if this complication develops is septic protocol. I will continue to monitor his VS, especially his temperature, heart rate and*

rhythm. I will also assess his oxygen saturation and lung sounds to see if he is having more difficulty breathing. I will have an ambul bag ready incase he needs to be intubated emergently. Assess his skin and see if there is any new skin breakdown, assess his wound to see how worst it has gotten. I would teach him how to turn and cough and deep breathe to open up his airways. Continue to monitor blood pressure, ask for ABGs. Consult respiratory about BiPAP or intubation.

9. ***What psychosocial needs will this patient and/or family likely have that will need to be addressed?*** *Psychosocial needs that this patient and family may have are if family and friends are allowed to visit if he needs to go to the hospital. A place to stay since they live far way from the hospital.*

10. ***How can the nurse address these psychosocial needs?***

Being honest about how severe his infection is. Telling his wife the hours for visitation. Where the wife can stay, which hotels have discounted rates for families with loved ones in the hospital.

Evaluate the response of your patient to nursing and medical interventions during your shift. All physician orders have been implemented that are listed under medical management.

Evaluation: Two hours later…

Current VS:	**Most Recent:**	**Current PQRST:**	
T: 101 F/38.3 C (oral)	**T:** 100.1 F/37.8 C (oral)	**P**rovoking/Palliative:	IV morphine relieved
P: 94 regular	**P:** 80 regular	**Q**uality:	Throbbing
R: 22 regular	**R:** 14 regular	**R**egion/Radiation:	Right knee
BP: 105/90	**BP:** 140/85	**S**everity:	4/10
O2 sat: 93% 2 liters n/c	**O2 sat:** 95% RA	**T**iming:	With movement

Current Assessment:	
GENERAL APPEARANCE:	Restless, appears to be repositioning self often
RESP:	Breath sounds clear, but respirations are rapid
CARDIAC:	Warm, dry skin with no edema, heart sounds are regular with no abnormal beats, pulses thready but palpable at radial/pedal/post-tibial landmarks, sluggish cap refill
NEURO:	Alert & oriented to person, place; disorientation to time and why he is in the hospital
GI:	Abdomen flat, soft/nontender, bowel sounds audible per auscultation in all four quadrants
GU:	Voided 40 mL past 2 hours, urine dark yellow
SKIN:	Skin integrity intact, skin turgor elastic, no tenting present, 8-inch (20 cm) right knee incision closed w/staples, erythema and edema surrounding, hypersensitivity to touch in the area surrounding incision as well as the entire knee; occlusive dressing removed to reveal a large amount of serous drainage with tinges of yellow drainage

Radiology Reports: Chest x-ray

What diagnostic results are RELEVANT and must be recognized as clinically significant by the nurse?

RELEVANT Results:	**Clinical Significance:**
No infiltrates or other abnormalities. No changes from last previous	No signs of pneumonia, pneumothorax or PE

Lab Results:

Complete Blood Count (CBC:)	**Current:**	**High/Low/WNL?**	**Admission:**
WBC (4.5–11.0 mm 3)	18.5	high	16.8
Neutrophil % (42–72)	92	High	88
Hgb (12–16 g/dL)	12.4	WNL	12.5
Platelets (150-450 x10^3/µl)	302	WNL	306

What lab results are RELEVANT and must be recognized as clinically significant by the nurse?

RELEVANT Lab(s):	**Clinical Significance:**	**TREND: Improve/Worsening/Stable:**
WBC	Increasing; sign that immune system is fighting an infection	Worsening
Neutrophils	Increasing; possible bacterial infection	Worsening

Basic Metabolic Panel (BMP:)	Current:	High/Low/WNL?	Admission:
Sodium (135–145 mEq/L)	139	WNL	137
Potassium (3.5–5.0 mEq/L)	4.4	WNL	4.0
Glucose (70–110 mg/dL)	178	High	160
Creatinine (0.6–1.2 mg/dL)	1.5	High	1.1

What lab results are RELEVANT and must be recognized as clinically significant by the nurse?

RELEVANT Lab(s):	Clinical Significance:	TREND: Improve/Worsening/Stable:
Glucose	Increasing due to stress from infection	Worsening
Creatinine	Kidney function is stressed, infection may have spread to kidneys	Worsening

Misc. Labs:	Current:	High/Low/WNL?	Previous:
Lactate (0.5-2.2 mmol/L)	2.9	High	2.2

RELEVANT Lab(s):	Clinical Significance:	TREND: Improve/Worsening/Stable:
Lactate	Greater the lactate acid value, greater possibility the patient is becoming septic	Worsening

1. What data is RELEVANT and must be interpreted as clinically significant by the nurse?

RELEVANT VS Data:	Clinical Significance:
T:101°F (38.3 °C) P:94 bpm, regular R:22, regular BP:105/90 mm Hg O2 sat: 93% on 2 L n/c P: IV morphine relieved Q:throbbing S: 4/10 T: pain with movement	Temperature increasing = fever, immune system trying to fight infection Pulse has increased to compensate for decrease BP RR has increase as O2 saturation has decrease; on 2 L supplemental O2 when before he was saturating at 95 % on room air BP decrease due to medication PQRST important because it shows morphine has helped to relieve the pain but it also informs the RN that any movement is painful now unlike before when it was just with activity. Suggest that infection is getting more localize, more severe.
RELEVANT Assessment Data:	**Clinical Significance:**
GEN: restless, repositions self often CARDIO: sluggish cap refill, thread peripheral pulses NEURO: disorientated to time and why he is at hospital GU: produced 40 mL or urine over 2 hours; dark yellow	Painful can't get comfortable to rest; without proper rest wont be able to work with PT in morning due to not having energy May be going into cardiogenic shock Change in level of consciousness along with increase oxygen demands suggest brain and other vital organs are not getting enough oxygenated blood May have developed a kidney infection; acute kidney injury

2. Has the status improved or not as expected to this point? *The patient's status has gotten worst. Though his pain has being relieved to a certain point with morphine; the infection has spread and he is at risk of developing sepsis and cardiogenic shock.*

3. ***Does your nursing priority or plan of care need to be modified in any way after this evaluation assessment?*** *Yes, I would not worry too much about pain as that is under control, though I would still administer pain medications as needed. I would monitor his blood pressure and heart rate and rhythm for sign that he is developing cardiogenic shock. I would continue to monitor labs CBC for increase in WBC and neutrophils, lactate acid to see if he is at risk for sepsis. Monitor blood glucose AC HS, monitor his surgical incision and take note of the drainage and swelling by drawing border on skin with skin marker, ABGs and maintain an oxygenation saturation >95%*

4. ***Based on your current evaluation, what are your nursing priorities and plan of care?***

Nursing priorities will be to continue to titrate his O2 saturation >95%, monitor his heart rate and rhythm and look for signs that he may be developing cardiogenic shock. I would continue to monitor WBC and neutrophils via CBC and lactate to see if he is progressing towards sepsis. Continue to medicate for pain, try to bring his temperature down so I would continue to monitor VS. Contact HCP to get ABGs drawn. Try and make him comfortable by teaching him relaxation techniques. Continue to monitor creatinine, intake and output to see how kidney function is trending. Encourage fluids to prevent dehydration. Daily weights to see if he is fluid overloaded or dehydrated.

After interpreting relevant clinical data, you recognize that a problem is present and immediately contact the primary care provider and the give the following SBAR:

Situation:

Name/age: John Roberts, 68 years old
BRIEF summary of primary problem:
Infection at recent incision site on right knee
from total knee arthroplasty
Day of admission/post-op #: Day 1
readmission, Day 5 post op

Background:

Primary problem/diagnosis:
Infection related to TKA
RELEVANT past medical history:
osteoarthritis right knee, diabetic,
hypertension and hyperlipidemia
RELEVANT background data: smoker, lives out in the country, lifelong lumberjack

Assessment:

Most recent vital signs:
T:101°F (38.3 °C)
P:94 bpm, regular
R:22, regular
BP:105/90 mm Hg
O2 sat: 93% on 2 L n/c
P: IV morphine relieved
Q:throbbing
R: Right knee
S: 4/10
T: pain with movement
RELEVANT body system nursing assessment data: GEN: restless, repositions self often
CARDIO: sluggish cap refill, thread peripheral pulses
NEURO: disorientated to time and why he is at hospital
GU: produced 40 mL or urine over 2 hours; dark yellow
RELEVANT lab values: Glucose: 178 mg/dL,
Creatinine: 1.5 mg/dL, Lactate: 2.9 mmol/L, WBC:
18.5 mm 3, Neutrophils: 92%
TREND of any abnormal clinical data (stable-increasing/decreasing):
Neutrophil is increasing, Creatinine is increasing, Lactate is increasing,
WBC is increasing, and Glucose is increasing
How have you advanced the plan of care? Pt is now on 2L of
supplemental O2 to improve O2 saturation to 95%, morphine is helping manage
pain, started IV Clidamycin for infection, on telemetry for heart rate and
rhythm, monitoring VS for signs and symptoms of worsening infection, lactate
acid to see if he is becoming sepsis. Pt has been ordered to work with him to
increase strength and ROM as tolerated in right leg
INTERPRETATION of current clinical status (stable/unstable/worsening): Worsening

Recommendation:

Suggestions to advance the plan of care: ABGs, continue to monitor lactate acid, WBC, neutrophils for signs of worsening infection and possible sepsis. Monitor heat rate, heart rhythm and blood pressure for sign that he might go into cardiogenic shock. Monitor temperature for signs of increasing fever. Try methods bring his temperature back down, like ice packs, fans, lower the thermostat. Increase titration of supplemental oxygen until O2 sat >95%. Talk to

RT about getting high flow device or BiPAP to help if pt O2 saturation continues to decline, nebulizer treatment. Continue to monitor intake and output and creatinine values to see how kidney function is progressing. Encourage fluids to prevent dehydration

Education Priorities/Discharge Planning

1. **What educational/discharge priorities will be needed to develop a teaching plan for this patient and/or family after his condition stabilizes?** I would educate him about how smoking can exacerbate conditions like hypertension, diabetes, and hyperlipidemia, that it significantly increases his risk of having a stroke or pulmonary emboli. I would educate him and his wife how to perform proper dressing changes and how to clean the site to prevent another infection. I would mention the importance of finishing entire prescription of antibiotics to prevent recurrence and to prevent bacteria from developing resistance. If he goes home with morphine, I will explain to him and his wife how to count respirations and use a portable oximeter to measure oxygen saturation. I would also explain to them when to call his primary care doctor if his respiration gets too low. If he asked why he is taking a PPI even though he does not have GERD, I will tell it is because NSAIDs and opioids can be hard on the stomach mucosal lining and cause ulcers to form and a PPI will help prevent that by inhibiting proton pumps from releasing hydrogen ions into stomach acid making thereby decreasing the chance of ulcer forming. I would also explain to him that PPI should only be used for 2 weeks others it can cause harm to the stomach. If he feels he needs more or that he is having gastric pain he should contact his doctor and they can work together to find a different medication to help. To help regain his strength and range of motion in his right leg, I will relay to his physical therapist that he is out of the hospital and coordinates dates to come over for house visits, in the meantime I will print off some exercises for him to do until they visit. If he is sent home on supplemental oxygen, I would demonstrate how to use it properly, that the container should never be laying on the floor since it can explode if ruptured. I will also educate him on the importance of not smoking while using the device or near by the device since oxygen is highly flammable. I will reinforce the benefits of low sodium diet to Mr. Rogers and his wife. I will educate them on how to monitor intake and output and the importance of daily weights. Educate him about the progression of osteoarthritis and the kind activities he can do to help lessen the pain like swimming and low impact sports and weight-bearing exercises. The importance of keeping his strength and muscle mass up as that decreases with age compared to overall body weight. I would explain to Mr. Rogers how using an incentive spirometer correctly and TCDB exercises help open up his airways.

2. ***How can the nurse assess the effectiveness of patient and/or family teaching and discharge instructions?***

I would have re-explain how smoking can make hypertension, diabetes and hyperlipidemia worst. I will have them explain the signs and symptoms of strokes and pulmonary emboli. They will demonstrate proper dressing change technique, tell me the signs and symptoms that the incision site is infected again and need to call doctor. Mr. Roberts will show interest in quitting smoking by asking for a pamphlet or number to call. Mr. Roberts and his wife will demonstrate proper cleaning technique of the incision. Mr. Roberts will show interest in continuing rehabilitation at home with PT, will demonstrate strength exercise and ROM exercises from the handout I provided. He will explain to me the benefits of taking a PPI and when he would call a doctor . He and his wife will demonstrate how to use oximeter properly and his wife will demonstrate how to count respiration . She will also explain when she would call the ER if his respiration rate is to low. She will verbalize what the low limit and high limit of respiration rate is, and the low limit of oxygen saturation. Mr. Rogers will explain the benefits of taking all his antibiotics regardless if he feels better. They demonstrate proper use and storage of supplemental oxygen tank. He will explain the benefit of a low sodium diet and how it can help with his hypertension. He will demonstrate how to monitor intake and output and will state the benefit of daily weights. He will explain the benefits of low impact activities like swimming in relationship to the progression of osteoarthritis. How keeping his strength up by doing strength exercises can retard the progression of that disease. Demonstrate proper use of incentive spirometer and TCDB exercises.

Caring and the "Art" of Nursing

1. **What is the patient likely experiencing/feeling right now in this situation?** I would imagine he is feeling relieved that the infection was caught in time before it develops into sepsis. He is thankful for the work the nurses did caring for him and getting him through this rough experience. Thankful for his wife driving him to the hospital, realized if he waited longer, he would more than likely have died. I imagined he might have realized that he is not invincible and that he should not rush into getting back into the thick of things, his body needs time to properly heal or he might be back here with another infection.

2. **What can you do to engage yourself with this patient's experience, and show that he/she matters to you as a person?**

I would assist when possible with teaching him how to do isometric exercise for his infected leg if he can tolerate them. Understand that due to his background as a lumberjack he might be stoic in dealing with his pain, so I would educate him on how pain medicines work and that when they are used correctly are not addictive. If he still doesn't want any pain meds but is still in pain I would try some music therapy or aromatherapy to help distract him from the pain and being stuck in the hospital bed. I would encourage him to try and walk, sit up and work on ROM exercises whenever possible. Ask him what has helped him deal with pain in the past when he was a lumberjack. Give him options, don't approach in a authoritative way.

Use Reflection to THINK Like a Nurse

Reflection-IN-action (Tanner, 2006) is the nurse's ability to accurately interpret the patient's response to an intervention at the moment as the events are unfolding to make a correct clinical judgment.

1. **What did I learn from this scenario?** I learned that surgical incision are perfect entry point for bacteria to get in and that even a site that looked well and on it's way to a fast normal recovery can become infected quickly and take a turn for the worst. Comorbidities and underlying conditions/ailments can also affect the how well the wound heals

2. **How can I use what has been learned from this scenario to improve patient care in the future?** This scenario will help me explain to patients the importance of not rushing the healing process. It also highlights how unrelated ailments like osteoarthritis and hyperlipidemia or diabetes and hypertension can slow down the healing process, making it easier for bacteria to infiltrate wound and cause and infection. This case study also show me that it doesn't take long for an infection to progress into worst condition like sepsis and cardiogenic shock. It teaches me how to approach people who under report their pain due to beliefs or from a life time of physical work.

Lastly, create a Shift Summary Nursing Note.
The below are recommended subject areas:

- **Reason for hospitalization:**
- **Abnormal and pertinent normal on nursing assessment:**
- **Nursing Interventions for shift:**
- **Patient Education:**
- **Discharge plan:**

Mr. John Roberts was then admitted to our local hospital with a possible infection at the surgical incision from the total knee arthroplasty he had a week ago (he was D/C 4 days ago). Upon obtaining his medical history, it is revealed that he is a diabetic, suffers from hyperlipidemia and hypertension. Has been a smoker for the past 50 years and is still married to his wife of 50 years. Physical assessment revealed a temperature of 100.1 °F (37.8°C), HR: 80 bpm, BP:140/85 mm Hg and a O2 Sat of 95% on room air. General appearance suggest pain as he appears tense while sitting and grimaces upon movement of right leg. He rates his pain 7/10 and says it gets worst with activity and that RICE method and pain medication helps relieve it. He is alert and orientated to place, purpose, time, and self. Auscultation of lungs find crackles at bases that clear with cough. Skin is clammy and warm; inspection of surgical site reveals amount of serous drainage with yellow tinge. Labs reveal elevated WBCs, neutrophil, glucose, and lactate acid. 2 hours after initial assessment, VS are 101 °F, 94 bpm, 22 breaths per minute, BP 105/90 and O2 saturation of 93% on 2 L n/c. Another CBC reveals that WBC and neutrophils continue to increase, signaling immune system actively trying to fight infection. Lactate acid has increased as well triggering sepsis protocol. He no longer was a/o x3.

Then the patient was placed on telemetry to monitor heart and rhythm. A peripheral IV site was obtained to administer morphine and clindamycin. He was also started on metformin and blood sugar check AC Hs to monitor and control his diabetes. Home medications were continued as well. He was taught how TCDB exercises help open airways up. Mr. Roberts was encouraged to do isometric exercises prescribe by PT as tolerated. VS were monitored for increase signs and symptoms of sepsis and cardiogenic shock. ABGs were ordered. WBC, neutrophils and lactate acid were monitored to observe for any trends. Intake and output were monitored for signs of fluid retention and diet was switched to a low sodium diet to decrease strain on kidneys. Instructed patient to incentive spirometer to open airways. Respiratory therapists were consulted about nebulizer treatment, high flow nasal canula and the possibility of BiPAP or intubation if condition worsens.

The nurse then went to educated about how continued smoking can increase chance of stroke or pulmonary emboli occurring. It also worsens preexisting conditions like hypertension, hyperlipidemia, and diabetes. He was educated on low impact activities he can participate in until his knee has fully recovered. He and his wife were educated on proper dressing changing technique and care of incision site. His wife was educated on how to count respirations and when to go to the doctor if respiration get too low. What the normal range of respiration is for a male his age. They were educated on the morphine and its side effects and when to call the doctor. Mr. Roberts was also informed about taking his entire prescription of antibiotics as ordered regardless of if feeling better. I educated him on proper use of IS, TCDB, and alternative pain relief methods like meditation and music therapy. Educated about signs and symptoms of infection to prevent this from reoccurring. Educated about benefits of low sodium diet in relationship to his diabetes and hypertension. Educated about proper use of supplemental o2 and how to use oximeter. I talked to him about the importance of giving his body the time necessary to heal properly and prevent further complications.

Discharge plan: go home and continue physical therapy at home. Home health nurse to visit twice a week for the first couple weeks and then once a week until recovered. Sent home with supplies to perform dressing changes at home. Sent home with pamphlet about smoking cessation and a number to call when ready to make an appointment about that. Sent home with low sodium diet cookbook. Supplemental oxygen was provided in case needed. Discharged with instruction about wound care, information on potential side effects from his brand-new medicine.