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%	✓

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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:**
RELEVANT Data from Social History:	***Clinical Significance:***

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:**

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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:**

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	

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Lab Results:

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

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

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

RELEVANT Lab(s):	Clinical Significance:	TREND: Improve/Worsening/Stable:

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

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

RELEVANT Lab(s):	Clinical Significance:

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:**		

Clinical Reasoning Begins…

1. ***What is the primary problem your patient is most likely presenting?***

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

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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 Chest x-ray		

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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		

Collaborative Care: Nursing

3. What nursing priority (ies) will guide your plan of care? *(if more than one-list in order of PRIORITY)*

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

Nursing Interventions:	Rationale:	Expected Outcome:

5. ***What body system(s) will you assess most thoroughly based on the primary/priority concern?***

6. What is the worst possible/most likely complication to anticipate?

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

8. What nursing interventions will you initiate if this complication develops?

9. What psychosocial needs will this patient and/or family likely have that will need to be addressed?

10. How can the nurse address these psychosocial needs?

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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	

Lab Results:

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

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

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

RELEVANT Lab(s):	Clinical Significance:	TREND: Improve/Worsening/Stable:

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

RELEVANT VS Data:	Clinical Significance:
RELEVANT Assessment Data:	**Clinical Significance:**

2. ***Has the status improved or not as expected to this point?***

3. ***Does your nursing priority or plan of care need to be modified in any way after this evaluation assessment?***

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

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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: **BRIEF summary of primary problem:** **Day of admission/post-op #:**
Background:
Primary problem/diagnosis: **RELEVANT past medical history:** **RELEVANT background data:**
Assessment:
Most recent vital signs: **RELEVANT body system nursing assessment data:** **RELEVANT lab values:** **TREND of any abnormal clinical data (stable-increasing/** **decreasing): How have you advanced the plan of care?** **INTERPRETATION of current clinical status (stable/**
Recommendation:
Suggestions to advance the plan of care:

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?***

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

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Caring and the "Art" of Nursing

1. ***What is the patient likely experiencing/feeling right now in this situation?***

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

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?***

2. ***How can I use what has been learned from this scenario to improve patient care in the future?***

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