Appendicitis/Appendectomy
UNFOLDING Reasoning

John Washington, 14 years old

Primary Concept		
Inflammation		
Interrelated Concepts (In order of emphasis)		
• Pain • Stress • 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%	✓

History of Present Problem:

John Washington is a healthy 14-year-old African American male who weighs 150 lbs. (68.2 kg). He came to the emergency department because he woke up this morning at about 2 am with "excruciating" generalized abdominal pain around his belly button that has been progressively getting worse over the past several hours. It is now 2 pm. He took ibuprofen 400 mg PO this morning, which decreased the pain some but is now more painful and uncomfortable. The pain is now localized to his RLQ. The pain increases with walking and movement but he feels better when he lies down in a fetal position. He vomited three times after he drank some orange juice for breakfast this morning and has had nothing to drink since. He continues to feel nauseated but has not had an emesis since this morning.

Personal/Social History:

John lives with his mother and three younger brothers. He is active in athletics and has a strong social network of friends and family in the inner-city neighborhood where he lives.

What data from the histories are RELEVANT and must be interpreted as clinically significant by the nurse? *(Reduction of Risk Potential)*

RELEVANT Data from Present Problem:	**Clinical Significance:**
-14 years old -Excruciating generalized abdominal pain around the belly button -Current localized pain to RLQ -Increased pain on exertion -Decreased pain in fetal position -Nausea/Vomitin	- Appendicitis is commonly seen in patients age 10-30 -Progressing pain could be the result of occlusion which could lead to inflammation then pain -Fetal position relieves pressure -Movement/exertion increases pressure -Nausea and vomiting
RELEVANT Data from Social History:	**Clinical Significance:**
-.John is a minor -Active in athletics -Strong network of friends and family	-Parent needs to consent for him -At risk for ineffective coping -Must consider family and friends and how they will be impacted by the brothers surgery

Patient Care Begins:

Current VS:	**P-Q-R-S-T Pain Assessment:**	
T: 100.5 F/38.1 C (oral)	**P**rovoking/Palliative:	Movement, palpation
P: 106 **(**regular)	**Q**uality:	Sharp, cramping
R: 20 (regular)	**R**egion/Radiation:	Mid abdomen, RLQ

BP: 142/76	**S**everity:	8/10
O2 sat: 99% RA	**T**iming:	Continuous

What VS data are RELEVANT and must be interpreted as clinically significant by the nurse? *(Reduction of Risk Potential/Health Promotion and Maintenance)*

RELEVANT VS Data:	**Clinical Significance:**
Fever Tachy 8/10 pain 146/76 BP Sharp cramping continuous pain	Fever can be a sign of infection Pain level can mean inflammation or that the patient is just experiencing pain which needs to be addressed Tachy and high BP can mean the patient is having anxiety

Initial Assessment by Primary Nurse

What body system(s) will the nurse most thoroughly assess based on the problem and the clinical data collected to this point? *(Reduction of Risk Potential/Physiologic Adaptation)*

PRIORITY Body System(s):	**PRIORITY Nursing Assessments:**
GI assessment Intefumentary	Vitals Bowel sounds Appetite Last BM Abdominal assessment Skin turgor

Current Assessment:	
GENERAL SURVEY:	Alert, oriented, pleasant, appears tense, uncomfortable, dress appropriate for the season, hygiene and grooming normal for age and gender.
NEUROLOGICAL:	Alert & oriented to person, place, time, and situation (x4)
HEENT:	Head normocephalic with symmetry of all facial features. PERRLA, sclera white bilaterally, conjunctival sac pink bilaterally. Lips, tongue, and oral mucosa pink and moist.
RESPIRATORY:	Breath sounds clear with equal aeration on inspiration and expiration in all lobes anteriorly, posteriorly, and laterally, nonlabored respiratory effort on room air.
CARDIAC:	Pink, warm & dry, no edema, heart sounds regular, pulses strong, equal with palpation at radial/pedal/post-tibial landmarks, brisk cap refill. Heart tones audible and regular, S1 and S2 noted over A-P-T-M cardiac landmarks with no abnormal beats or murmurs.

ABDOMEN:	Abdomen round, rebound tenderness in RLQ to gentle palpation. Rebound tenderness present in RLQ, BS + in all four quadrants, bowel sounds diminished/hypoactive
GU:	Voiding without difficulty, urine clear/dark amber
INTEGUMENTARY:	Skin warm, dry, intact, normal color for ethnicity. Cap refill <3 seconds. Hair soft-distribution normal for age and gender. Skin integrity intact, skin turgor elastic, no tenting present.

What assessment data is RELEVANT and must be interpreted as clinically significant by the nurse? *(Reduction of Risk Potential/Health Promotion & Maintenance)*

RELEVANT Assessment Data:	**Clinical Significance:**
Tense Rebound tenderness in RLQ Diminished bowel sounds	Patient could be guarding because of pain Rebound tenderness is a indicator of appendicitis Poor peristalsis and less gastric content related to nausea and vomiting

Radiology Reports:

What diagnostic results are RELEVANT and must be interpreted as clinically significant by the nurse?
(Reduction of Risk Potential/Physiologic Adaptation)

Ultrasound: Abdomen	
Results:	Clinical Significance:
Enlarged, non-compressible appendix	

Lab Results:

Complete Blood Count (CBC)					
	WBC	HGB	PLTs	% Neuts	Bands
Current:	14.5	15.2	245	88	0

What lab results are RELEVANT and must be recognized as clinically significant by the nurse? *(Reduction of Risk Potential/Physiologic Adaptation)*

RELEVANT Lab(s):	**Clinical Significance:**

WBC 14.5 Neutrophils 88%	Could mean inflammation or infection or both Can mean the body is attempting to get rid of infection

Basic Metabolic Panel (BMP)					
	Na	K	Gluc.	Creat.	
Current:	133	3.5	95	0.9	

What lab results are RELEVANT and must be recognized as clinically significant by the nurse? *(Reduction of Risk Potential/Physiologic Adaptation)*

RELEVANT Lab(s):	**Clinical Significance:**
Na 133 K 3.5	Patient has been vomiting and not eating or drinking K is almost out of normal limits watch this because all the vomiting

Misc.					
	Lactate	CRP			
Current:	*4.1*	*55*			

What lab results are RELEVANT and must be recognized as clinically significant by the nurse? *(Reduction of Risk Potential/Physiologic Adaptation)*

RELEVANT Lab(s):	**Clinical Significance:**
Lactate 4.1 CRP 55	Acid base imbalance infection

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

(Reduction of Risk Potential/Physiologic Adaptation)

Lab:	**Normal Value:**	**Clinical Significance:**	**Nursing Assessments/Interventions Required:**

WBC **Value: 14.5**	5-10 **Critical Value:** Below 10.0	Elevated WBC can mean there is an infection or inflammation in the body or both	Vital signs – monitor for fever and elevated Heart Rate Contact doctor for antibiotic order Assess for abdominal

Clinical Reasoning Begins…

1. Interpreting relevant clinical data, what is the primary problem? What primary health-related concepts does this primary problem represent? *(Management of Care/Physiologic Adaptation)*

Problem:	**Pathophysiology of Problem in OWN Words:**	**Primary Concept:**
Infection appendicitis with possible impending rupture	When the appendix is clogged by things like hard stools or foreign items, appendicitis develops, causing inflammation and increased pressure. Ischemia can occur as a result of the increased pressure, which permits germs to grow.	Risk for Infection

Collaborative Care: Medical Management *(Pharmacologic and Parenteral Therapies)*

Care Provider Orders:	**Rationale:**	**Expected Outcome:**

Establish peripheral IV	For access to veins for surgical and antibiotic reasons	Have access if needed
0.9% NS 1000 mL IV bolus	To maintain fluid and electrolyte balance	Fluid and electrolytes stay WNL
Morphine 2 mg IV every 2 hours PRN	Help with the patients pain	Patients pain level decreases
Ondansetron 4 mg IV every 4 hours PRN nausea	Lower patients nausea	Patient verbally expresses they are not as nauseous
Ceftriaxone 1 g IVPB x1 now	For patients infection	Infection goes away labs return to WNL
Metronidazole 500 mg IVPB every 12 hours	For patients infection	Infection goes away labs return to WNL
General surgeon	In case patient needs an appendectomy	Patient and Surgeon are aware of patient needs
consult Strict NPO	For potential surgery prep	Patient is prepared for surgery

PRIORITY Setting: Which Orders Do You Implement First and Why? *(Management of Care)*

Care Provider Orders:	**Order of Priority:**	**Rationale:**
• Establish peripheral IV • 0.9% NS 1000 mL IV bolus • Morphine 2 mg IV every 2 hours PRN • Ondansetron 4 mg IV every 4 hours PRN nausea • Ceftriaxone 1 g	Esablis IV Morphine 0.9 NS Cefriaxone Metronidazole Ondansetron	You need the IV access to be able to give meds Pain to make the patient more comfortable Then give fluids and antibiotic Nausea last because it is PRN

IVPB x1 now • Metronidazole 500 mg IVPB every 12 hours		

Collaborative Care: Nursing

2. What nursing priority (ies) will guide your plan of care? *(Management of Care)*

Nursing PRIORITY:		
PRIORITY Nursing Interventions:	**Rationale:**	**Expected Outcome:**
Frequent vital sign monitor Pain assessment GI assessment Med admin	Monitor if infection gets any worse To insure your patient stays comfortable Check status of appendicitis Meds to help with everything	Performing the assessment will hopefully give a better understanding of the patient's condition Meds will help make condition better

3. What body system(s) will you assess most thoroughly based on the primary/priority concern?
(Reduction of Risk Potential/Physiologic Adaptation)

PRIORITY Body System:	**PRIORITY Nursing Assessments:**
Gi Integumentary	Vital signs Bowel sounds Diet and appetite Last BM Abdominal assessment

4. What is the worst possible/most likely complication(s) to anticipate based on the primary problem of this patient?
(Reduction of Risk Potential/Physiologic Adaptation)

Most Likely PRE-OP Complication:

Worst Possible/Most Likely Complication to Anticipate:		
Nursing Interventions to PREVENT this Complication:	**Assessments to Identify Problem EARLY:**	**Nursing Interventions to Rescue:**
IVF and antibiotics as ordered Frequent assessments	Vital signs Gi assessment	Surgery

Most Likely POST-OP Complication:

Worst Possible/Most Likely Complication to Anticipate:		
Nursing Interventions to PREVENT this Complication:	**Assessments to Identify Problem EARLY:**	**Nursing Interventions to Rescue:**
Incentive spirometer education Ambulate as tolerated Breathing technique education SCD application	Assess skin Vital signs Lung sounds	Call surgeon for blood clots Emergency equipment ready Rapid response if needed

5. What psychosocial/holistic care PRIORITIES need to be addressed for this patient?
(Psychosocial Integrity/Basic Care and Comfort)

Psychosocial PRIORITIES:	**Anxiety**	
PRIORITY Nursing Interventions:	**Rationale:**	**Expected Outcome:**
CARE/COMFORT: ***Caring/compassion as a nurse*** ***Physical comfort measures***	It is important to be caring with the patient to make them comfortable it may also help with them feeling anxious make sure patient is able to converse with family and friends and activity Making the best effort to make sure the patients pain is reduced will also help patient be more comfortable and more likely to talk and participate in conversations (place patient in high fowlers, give meds as ordered)	Patient will be comfortable Patient will not have any pain
EMOTIONAL (How to develop a therapeutic relationship): ***Discuss the following principles***	.It is essential for the nurse to develop a good rapport with the patient that way the patient feels comfortable expressing his feelings to the nurse	There will be a strong patient nurse line

needed as conditions essential for a therapeutic relationship: • *Rapport* • *Trust* • *Respect* • *Genuineness* • *Empathy*	and trusts the nurse with his care. Good rapport and trust also is established through mutual respect, being genuine and honest with one another and for the nurse to be empathetic. All of these are key components to a good patient-nurse relationship. It is important to have this relationship so there is thorough and therapeutic communication, This also will alleviate anxiety for the patient and make their experience in the hospital better overall	communication using therapeutic communication
SPIRITUAL:	Its important for the patient to have access to their spiritual needs	Patient will have full access to their spiritual need
CULTURAL Considerations (IF APPLICABLE)	If patient has a language barrier make sure there is a interpreter available	Patient will feel comfortable with being understood

Evaluation: Four Hours Later…

John had a laparoscopic appendectomy without apparent complications. He is currently in PACU and has just returned to the med/surg floor.

Current VS:	**Most Recent (from PACU):**	**Current PQRST:**	
T: 100.4 F/38.0 C (o)	**T:** 99.8 F/37.7 C (o)	**P**rovoking/Palliative:	Movement worsens
P: 92 (reg)	**P:** 84 (reg)	**Q**uality:	Dull ache
R: 20 (reg)	**R:** 18 (reg)	**R**egion/Radiation:	RLQ
BP: 136/86	**BP:** 124/80	**S**everity:	5/10
O2 sat: 97% room air	**O2 sat:** 99% room air	**T**iming:	Continuous

Initial Postop Assessment by Primary Nurse

What body system(s) will the nurse most thoroughly assess based on the problem and the clinical data collected to this point? *(Reduction of Risk Potential/Physiologic Adaptation)*

PRIORITY Body System(s):	**PRIORITY Nursing Assessments:**

All systems need to be assessed	ABCs Vitals Surgical site Pain GI

Current Assessment:	
GENERAL SURVEY:	Appears to be in no acute distress, the body appears tense. Occasional moans; moves as little as possible and grimaces with movement.
NEUROLOGICAL:	Drowsy, but arousable, alert & oriented to person, place, time, and situation (x4)
HEENT:	Head normocephalic with the symmetry of all facial features. PERRLA, sclera white bilaterally, conjunctival sac pink bilaterally. Lips, tongue, and oral mucosa pink and moist.
RESPIRATORY:	Respirations shallow, breath sounds clear but diminished with equal aeration on inspiration and expiration in all lobes anteriorly, posteriorly, and laterally, nonlabored respiratory effort on room air.
CARDIAC:	Pink, warm & dry, no edema, heart sounds regular, pulses strong, equal with palpation at radial/pedal/post-tibial landmarks, brisk cap refill. Heart tones audible and regular, S1 and S2 noted over A-P-T-M cardiac landmarks with no abnormal beats or murmurs.
ABDOMEN:	Abdomen flat and tender to gentle palpation. No BS auscultated in all four quadrants. Three small dressings on the abdomen with no drainage present
GU:	Has not voided since surgery
INTEGUMENTARY:	Skin warm, dry, intact, normal color for ethnicity. Cap refill <3 seconds, Hair soft distribution normal for age and gender. Skin integrity intact, skin turgor elastic, no tenting present.

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

(Reduction of Risk Potential/Health Promotion and Maintenance)

RELEVANT VS Data:	**Clinical Significance:**	**TREND: Improve/Worsening/Stable:**
Temp **HR** **O2** **RR**	**All vitals have importance to make sure there are no complications**	**Improving**
RELEVANT Assessment Data:	**Clinical Significance:**	**TREND: Improve/Worsening/Stable:**

Moaning **Not moving** **Shallow breath sounds** **No bowel sounds** **No void**	Non verbal sign of pain Non verbal sign of pain Insure the patient is deep breathing No Bowel sounds and voiding is normal immediately after surgery but keep an eye on it	Stable

2. Based on your current evaluation, what are your CURRENT nursing priorities and plan of care?
(Management of Care)

CURRENT Nursing PRIORITY:	**Preventing complications**	
PRIORITY Nursing Interventions:	**Rationale:**	**Expected Outcome:**
IVF Pain Antibiotics Ambulate High fowlers educate	Ivf Pain and antibiotics to make sure patient pain in managed allow and infection risk is decreased Abulate to decrease blood clot risk High fowlers for better breathing opportunity	Patients recovery goes smoothly and patient feels educated and confident about next steps

Collaborative Care: Postop Medical Management *(Pharmacologic and Parenteral Therapies)*

Care Provider Orders:	**Rationale:**	**Expected Outcome:**
Morphine 2-4 mg IV every 4 hours PRN pain	For pain	Patient will not have any pain
Ondansetron 4 mg ODT every 8 hours PRN nausea	For nausea	Patient will not report any nausea
Ceftriaxone 1 g IVPB every 12 hours	For post op infection risk	Patient will not get an infection
Metronidazole 500 mg IVPB every 12 hours	For infection risk	Patient will not get an infection
D5 ½ NS w/20 mEq KCl 75 mL/hour until tolerating PO fluids	Fluid and electrolyte balance	Patient will stay hydrated

It is now the end of your shift. Effective and concise handoffs are essential to excellent care

and, if not done well, can adversely impact the care of this patient. You have done an excellent job to this point; now finish strong and give the following SBAR report to the nurse who will be caring for this patient who is now fours postop: *(Management of Care)*

Situation:

Name/age: John Washington, 14 years old

Summary of the primary problem: Emergency appendectomy

Day of admission/post-op #: Admitted today post op 1 day

Background:

Primary problem/diagnosis: Patient arrived at the emergency department with excruciating RLQ pain and was experiencing N/V.

RELEVANT past medical history: N/A

Assessment:

Most recent vital signs: 99.8 T, 84 P, 18 R, 124/80 BP, 99% SpO2 on room air

RELEVANT body system nursing assessment data: All are within normal range besides GI. Abdomen is tender with palpation. No bowel sounds present in any of the 4 quadrants. The patient has 3 dressings on abdomen and no drainage present. Patient is showing signs of pain.

RELEVANT lab values: Elevated WBC and neutrophils before surgery

TREND of any abnormal clinical data (stable increasing/decreasing): vital signs are returning to normal

How have you advanced the plan of care? Incentive spirometry and deep breathing are taught to the patient. Encouraged the patient to walk as much as he or she could tolerate. To relieve pressure on the incision, the patient is in the High Fowler's position. The dressings are clean, dry, and complete.

Patient Response: Although the patient is still stiff and grimacing from post-operative discomfort, medications are being given as directed. Patient refuses to move, yet is repeatedly encouraged to do so.

INTERPRETATION of current clinical status (stable/unstable worsening): Stableinzing

Recommendation:

Suggestions to advance the plan of care:
Ambulate as much as tolerated
Diet as tolerated when bowel sounds return
Spirometer every hour
Fluids
Monitor vitals

Education Priorities/Discharge Planning

What educational/discharge priorities will be needed to develop a teaching plan for this patient and/or family? *(Health Promotion and Maintenance)*

Education PRIORITY:	
PRIORITY Topics to Teach: Signs and symptoms of infection Changing dressing	**Rationale:** So patient can know when to report or call doctor So patient can change their dressing avoiding infection

What additional considerations need to be made when teaching the parents of a pediatric patient?

Use Reflection to THINK Like a Nurse

What did you learn that you can apply to future patients you care for? Reflect on your current strengths and weaknesses of this case study identified. What is your plan to make any weakness a future strength?

What Did You Learn?	**What did you do well in this case study?**
I learned alot about appendectomy patients i wasn't aware of all the education needs	I researched well
What could have been done better?	**What is your plan to make any weakness a future strength?**
I can look more deep into why things happen	Researching more the next case study