UNFOLDING Reasoning Case Study: STUDENT

Post-op Pain Management 2/2: Cardiac Arrest

History of Present Problem:

Sheila Dalton is a 52-year-old woman who has a history of chronic low back pain and COPD. She had a posterior spinal fusion of L4-S1 earlier today. Her pain is currently controlled at 2/10 and increases with movement. She was started on a hydromorphone patient-controlled analgesia (PCA) with IV bolus dose that is 0.2 mg and continuous rate of 0.2 mg/hour.

The nurse reported that her nausea has improved after receiving ondansetron IV four hours ago. She was having increased pain despite using the PCA every 10 minutes. Her pain has decreased from 6/10 to 2/10 since the PCA bolus was increased from 0.1 mg to 0.2 mg of hydromorphone IV one hour ago.

Current VS:
T: 99.8 F/37.7 C (oral)
P: 78
R: 12
BP: 92/48
O2 sat: 89% room air 4 liters n/c

What data from the history is RELEVANT and has clinical significance to the nurse?

RELEVANT Data from History:	**Clinical Significance:**
COPD B/P	alters patient respiratory status monitor patients B/P drop, possibly due to medication

Your shift continues…

Thirty minutes later she is feeling more nauseated, and you administer ondansetron 4 mg IV push prn. Five minutes later she puts the call light on again. You are not able to respond immediately because you are helping your other patient get on the commode. Little do you know that Sheila is going to depend on your ability to THINK LIKE A NURSE and clinically reason to save her life. When you arrive in her room you observe the following…

Patient Care Begins:

Current Assessment:	
GENERAL APPEARANCE:	Lethargic, unresponsive, ashen pale in color
RESP:	Minimal spontaneous respiratory effort present. When you arrive at the bedside you observe that her mouth is full of liquid emesis with chunks of undigested food that is drooling out the side of her mouth
CARDIAC:	Unable to palpate radial pulse, you go straight to the carotid pulse on the neck and note a weak pulse with 2 palpable beats in 5 seconds. Calculate pulse rate: 24 /minute
NEURO:	Unresponsive, does not arouse or awaken to vigorous physical stimuli
GI:	Not assessed
GU:	Not assessed
SKIN:	Not assessed

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

RELEVANT Assessment Data:	Clinical Significance:
emesis w/chunks of undigested food drooling out of the side of mouth	patient is chocking

Current VS:
T: not assessed
P: 24
R: 4
BP: 72/40
O2 sat: 76% 4 liters n/c

What VS data is RELEVANT and must be recognized as clinically significant by the nurse?

RELEVANT VS Data:	Clinical Significance:
respirations	decreased oxygen circulation
O2 Sat	patient needs a nonbreather mask

Clinical Reasoning Begins…

1. ***What is the primary problem that your patient is most likely presenting with?*** the patient is chocking blocking airway

2. ***What is the underlying cause/pathophysiology of the primary problem?*** COPD, nausea

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

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

Nursing Interventions:	Rationale:	Expected Outcome:
Neuro assessment	Check patient for arousal and response	patient responds.
Call for code	try to save patients life	CPR

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

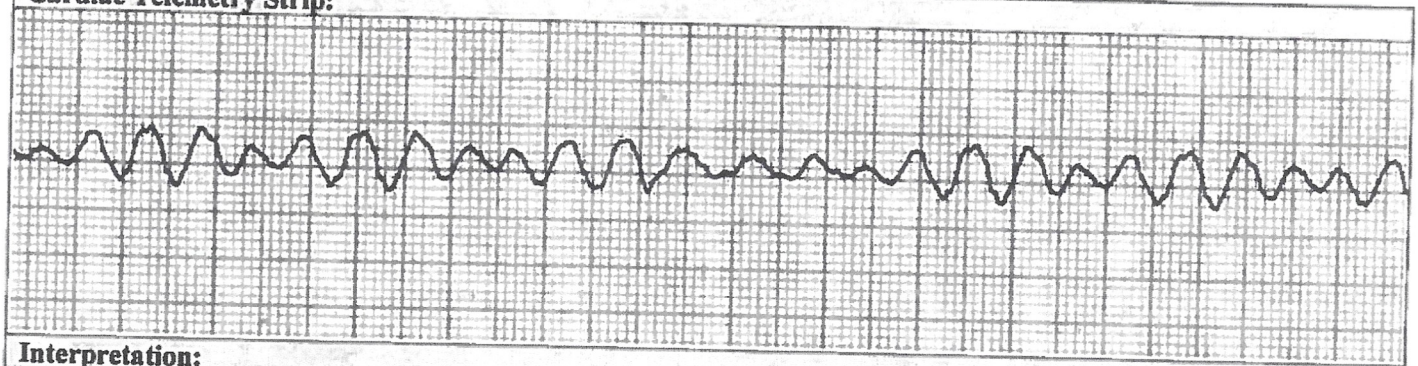
6. *What is the worst possible/most likely complication to anticipate?* patient is not breathing

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

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

A crash cart is brought into the room, and the patient is placed on the cardiac monitor/defibrillator. The following rhythm is displayed:

Cardiac Telemetry Strip:



Interpretation:

Ventricular fibrillation

Clinical Significance:

irregular heart beat. defibrillation & CPR

Medical Management: Rationale for Treatment & Expected Outcomes

I recognize that most students/new nurses have not had ACLS training or exposure to this certification in nursing school. It is important for the new nurse to understand the most common ACLS algorithms as it is relevant to clinical practice. If and when ACLS certification as a registered nurse is taken, this case study will have provided practice of this essential skill! Please recognize that doing this case study does not qualify for ACLS interventions in practice! You must be officially certified to actually intervene with these measures in a code.

Nurses who are BLS certified can have an active part in the code such as chest compressions; pulse check; bag ventilation; and vital sign checks. Nurses should feel that they can work within their scope and certification. So many times, nurses who are not ACLS certified will not even do those things that are taught in the BLS certification course.

*But there is a place for a nurse who is not ACLS certified during a code that is an important role...the RECORDER. Every crash cart has a simple 1-2 page form that documents the code and is self-explanatory. Though this role should ultimately be done by a certified ACLS nurse when one arrives, until then begin documentation and remain present in the room so that you as the primary nurse can communicate to the code team and physician the patient's story and what led up to the code. **Once the code team arrives, the role of the primary nurse is to contact physician, family, and pastoral care to update on patient status and assist with care.***

Care Provider Orders:	Rationale:	Expected Outcome:
ACLS Priorities: airway management ventilations CPR compresions defibrillation medication	perform these skills on the patient in hopes of bring patient back to life	patient responds to CPR and defibrillation

Medication Dosage Calculation:

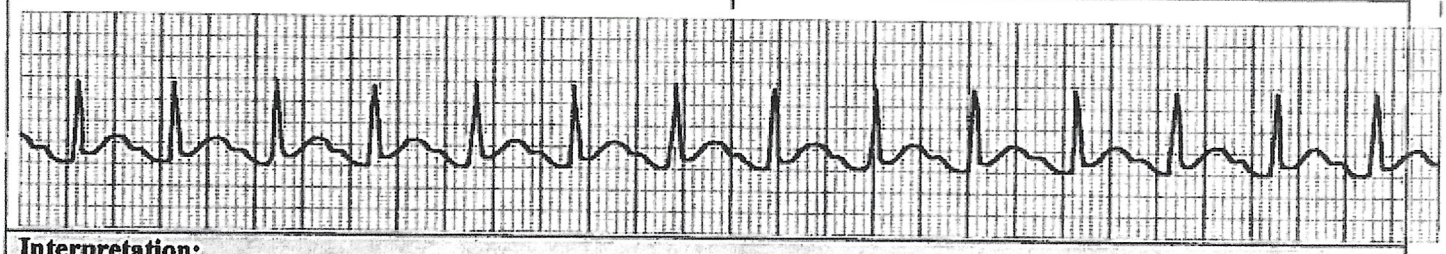
Medication/Dose:	Mechanism of Action:	Volume/time frame to Safely Administer:	Nursing Assessment/Considerations:
Epinephrine **1:10,000** **1 mg/10 mL IV/IO every 3-5" push**	increases vascular smooth muscle contractions	**10 mL syringe** **IV Push: Volume every 15 sec?**	Monitor R, P, B/P

Medication/Dose:	Mechanism of Action:	Volume/time frame to Safely Administer:	Nursing Assessment/Considerations:
Amiodarone **300 mg IV push** **150 mg/3 mL vial**	Slows down overactive electric signals in the heart	**IV Push: Volume every 15 sec?**	Monitor P, R, B/P

TEN minutes post-arrest:

After two doses of epinephrine and amiodarone bolus and the third defibrillatory unsynchronized shock at 360 joules, the following rhythm is present on the monitor:

Cardiac Telemetry Strip:



Interpretation:

Sinus tachycardia

Clinical Significance:

increased sympathetic response to pain, fever, oxygen demand

Nursing Priority Intervention:

give oxygen, give pain med

The in-house physician running the code orders a stat ABG right after she is successfully resuscitated and is now intubated. You obtain the following results:

Arterial Blood Gases:	Current:	High/Low/WNL?
pH (7.35–7.45)	7.15	low
pO2 (80–100)	64	Low
pCO2 (35–45)	78	high
HCO3 (18–26)	22	WNL
O2 sats (>92%)	90%	low
Oxygen delivery	100%	high

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

RELEVANT Lab(s):	Clinical Significance:
pH 7.15 low pO2 64 Low pCO2 78 high O2 sat 90 Low	provide patient with proper oxygen consumption to meet body demands

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

Lab:	Normal Value:	Why Relevant?	Nursing Assessments/Interventions Required:
pH **Value:** **7.15**	7.35-7.45 **Critical Value:** < 7.3 > 7.5	pH is regulated by the circulatory system	1. monitor O2 monitor electrolytes

Evaluation: ONE minute post-resuscitation:

After determining that her current rhythm also has a pulse, you collect the following assessment data:

Current VS:
T: 99.1 F/37.3 C (oral)
P: 128 (regular)
R: ambu bag rate of 20/minute (physician ordered increased rate)
BP: 128/88
O2 sat: 92% 100% O2

Current Assessment:	
GENERAL APPEARANCE:	Resting comfortably, appears in no acute distress
RESP:	Color slightly improved. Is pale/pink, coarse crackles/rhonchi scattered in both lung fields even after suctioning. No spontaneous resp. effort. Requires ambu bagging
CARDIAC:	Pulses 2+ throughout. Strong femoral pulse. No edema in extremities. Heart rate regular–S1S2.
NEURO:	Remains unresponsive. Responds to pain stimuli by bringing both hands toward the source of pain
GI:	Abdomen soft, non-tender with active bowel sounds
GU:	Foley placed, 30 mL clear, yellow urine present in bag
SKIN:	Surgical incision intact, no redness, drainage, or dehiscence present

1. ***What clinical data is RELEVANT that must be recognized as clinically significant?***

RELEVANT VS Data:	**Clinical Significance:**
pulse 128 R- ambu bag rate 20	• the heart is overworking. Need to bring pulse rate ↓ • patient is not breathing on her own.
RELEVANT Assessment Data:	**Clinical Significance:**
pt remains unresponsive	patient is not responding to painful stimuli. Must monitor neuro assessments

2. ***Has the status improved or not as expected to this point?*** yes, status has improved but patient still remains unresponsive.

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

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

Think ABC's…

A: AIRWAY–Maintain placement and integrity of endotracheal tube

B: BREATHING–Impaired gas exchange

C: CIRCULATION–Maintain adequate blood pressure and stable cardiac rhythm (impaired tissue perfusion)

TEN minutes post-resuscitation:

Medical Management: Rationale for Treatment & Expected Outcomes:

Care Provider Orders:	Rationale:	Expected Outcome:
ACLS Priorities: A- airway B- breathing C- circulation	maintain airway, breathing, and circulation	patient is alert and responsive

Medication/Dose:	Mechanism of Action:	Volume/time frame to Safely Administer:	Nursing Assessment/Considerations:
Nalaxone 0.02 mg IV push every 2 minutes 0.4 mg maximum dose	antidote for opioids	**IV Push:** **Volume every 15 sec?**	monitor cardiac arrest and respirations

The room is now ready and it is now time to transfer to ICU. 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:

Situation:

Name/age: Sheila Dalton, 58 yrs old

BRIEF summary of primary problem: pt was complaing of N/V and pain. She aspirated on emesis, patient coded, CPR was performed patient was given epinephrine and amiodarone as ordered.

Day of admission/post-op #: 0 post-op spinal infusion L4-S1

Background:

RELEVANT past medical history: patient has COPD and Low back pain

Assessment:

Most recent vital signs: Temp. 99.1 P-128, R-ambu bag rate 30/min B/P-128/88, O_2 Sat, 92%

RELEVANT body system nursing assessment data: Color has slightly improved, Coarse crackles scattered in both lung fields even after suctioning, Pulses 2+ throughout No edema in extremities, HR regular S1S2. responds to painful stimuli abdomen soft, active bowel sounds. foley placed 30mL clear yellow urine Surgical incision intact.

RELEVANT lab values: pH 7.15 low, pO2 64 Low, pCO2 high, HCO3 22 normal

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

Recommendation:

Suggestions to advance plan of care: Continue to monitor Neuro and respiratory status. Place patient on mechanical ventilator

TWENTY minutes post-resuscitation:

Radiology Reports: Portable Chest X-ray

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

RELEVANT Results:	Clinical Significance:
Tip of ET tube 1 cm above the carina. Heart size normal.	ET tube in place

Arterial Blood Gases:	Current:	High/Low/WNL?	Prior:
pH (7.35–7.45)	7.29	low	7.15
pO2 (80–100)	102	high	64
pCO2 (35–45)	48	high	78
HCO3 (18–26)	23	WNL	22
O2 sats (>92%)	100%	WNL	90%
Oxygen delivery	100%	WNL	100%

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

RELEVANT Lab(s):	Clinical Significance:	TREND: Improve/Worsening/Stable:
pH 7.29	resp acidosis	improving
pO2 102	increased perfusion	improving but too high
pCO2 48	improving	improving

Complete Blood Count (CBC):	Current:	High/Low/WNL?	Prior:
WBC (4.5–11.0 mm 3)	8.9	WNL	7.8
Hgb (12–16 g/dL)	10.2	low	11.8
Platelets (150-450 x10^3/µl)	148	low	155
Neutrophil % (42–72)	85	high	81

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

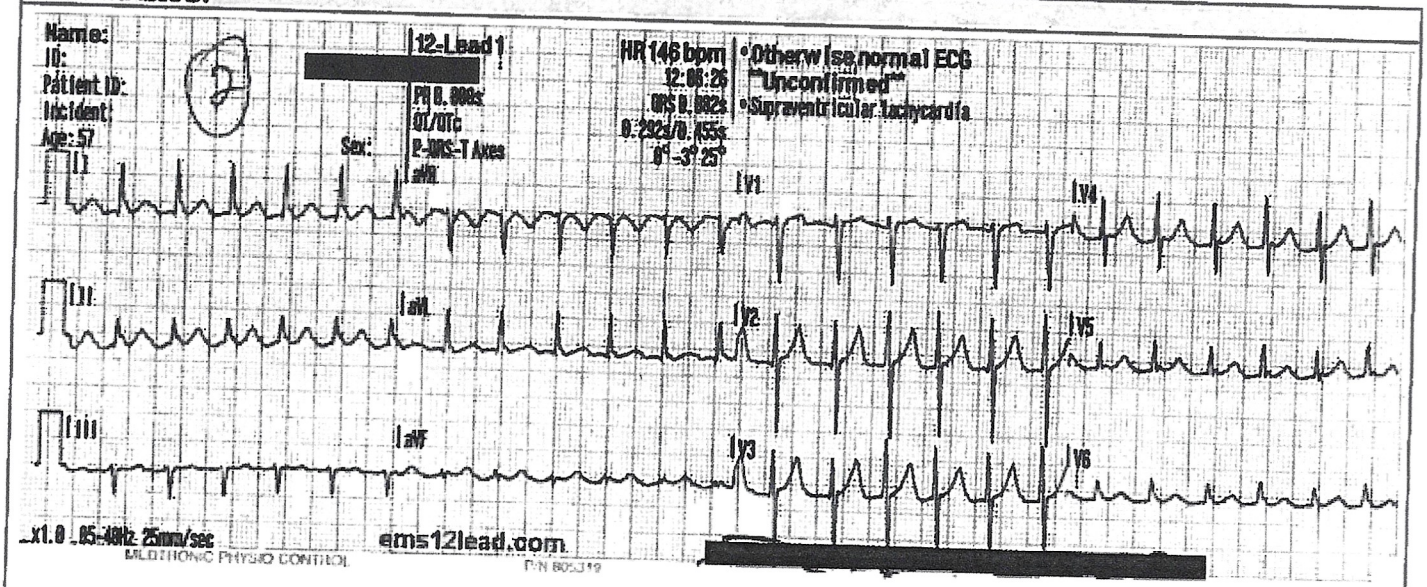
RELEVANT Lab(s):	Clinical Significance:	TREND: Improve/Worsening/Stable:
Hbg low	low perfusion	worsening
platelets low	monitor for bleeding	worsening
neutrophil high	patient has an infection	worsening

Basic Metabolic Panel (BMP):	Current:	High/Low/WNL?	Prior:
Sodium (135–145 mEq/L)	138	WNL	140
Potassium (3.5–5.0 mEq/L)	4.1	WNL	3.8
CO2 (Bicarb) (21–31 mmol/L)	20	low	22
Glucose (70–110 mg/dL)	152	high	122
Creatinine (0.6–1.2 mg/dL)	1.7	high	1.1
Misc:			
Lactate (<2.6)	4.9	high	N/a

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

RELEVANT Lab(s):	Clinical Significance:	TREND: Improve/Worsening/Stable:
Co2 low	Monitor kidney function	worsening
glucose high	blood glucose high need insulin	
Creatinine high	monitor I+O	has improved but still bad
Lactate high	infection	

12 Lead EKG:



Interpretation:

Supraventricular tachycardia

Clinical Significance:

Incomplete ventricular filling
requires an increase in oxygen

Education Priorities/Discharge Planning

1. ***What will be the most important discharge/education priorities you will reinforce with their medical condition to prevent future readmission with the same problem?***

medication administration
stop smoking
follow-ups

2. ***What are some practical ways you as the nurse can assess the effectiveness of your teaching with this patient?***

patient teaching, teach back method

Caring and the "Art" of Nursing

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

anxious, nervous, scared. not sure how to effectively care for their family member who is being discharged.

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

have an engaging conversation with the patient. Answer questions she may have.

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 in the moment as the events are unfolding to make a correct clinical judgment and transfer what is learned to improve nurse thinking and patient care in the future.

1. ***What did I learn from this scenario?*** situations can change quickly. I must be confident in my abilities as a nurse to care for a patient in an emergency.

2. ***What would I do differently (if applicable) in this situation to prevent this outcome?*** place patient on her side.

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

listen to patients and take their symptoms seriously.