

Post-op Pain Management: Cardiac Arrest

* (2/2)



Sheila Dalton, 52 years old

Primary Concept
Perfusion
Interrelated Concepts (In order of emphasis)
1. Gas Exchange
2. Acid-Base Balance
3. Fluid and Electrolyte Balance
4. Clinical Judgment
5. Patient Education
6. Communication
7. Collaboration

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:
surgery COPD chronic back pain	patients pain treatment

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: _____/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:
unresponsive pale minimum respiratory effort chunks of undigested food no palpable pulses does not awaken	aspiration

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:
low bp low O2 sat	the is little to no circulation

Clinical Reasoning Begins...

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

nausea
2. *What is the underlying cause/pathophysiology of the primary problem?*
3. *What nursing priority(ies) will guide your plan of care? (if more than one-list in order of PRIORITY)*
airway breathing
and circulation

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

Nursing Interventions:	Rationale:	Expected Outcome:
cpr	the patient is unresponsive	return of pulse and heart rate

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

- lungs heart
- pulses skin

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

death

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

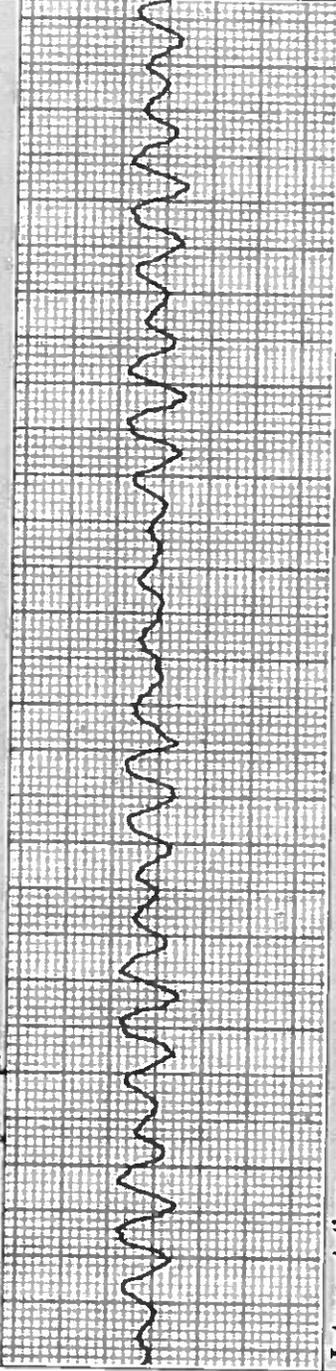
complete blood count

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

sit the patient up request patient be npo administer and vaso dilation medication to get blood circulating

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:

acute myocardial infarction

Clinical Significance:

irreversible damage to the heart

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 stabilization respiratory emergency	air way management cardiac arrest management	resuscitation

Medication Dosage Calculation:

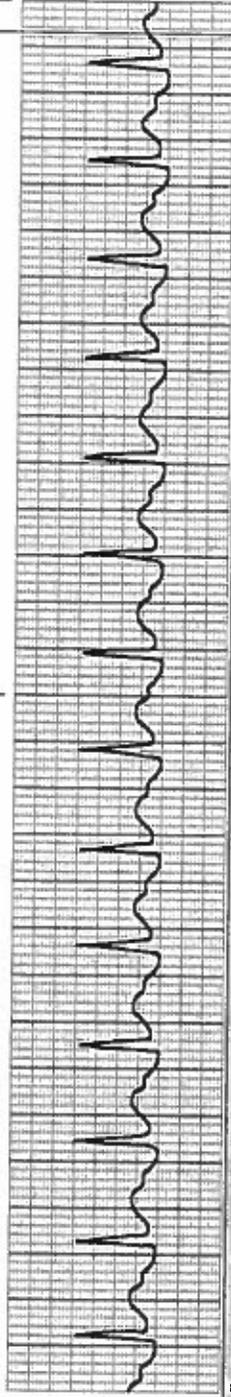
Medication/Dose:	Mechanism of Action:	Volume/time frame to Safely Administer:	Nursing Assessment/Considerations:
Epinephrine 1:10,000 1 mg/10 mL IV/IO every 3-5" push	improve breathing	10 mL syringe IV Push: Volume every 15 sec?	O2 sat pulse rate bp rate

Medication/Dose:	Mechanism of Action:	Volume/time frame to Safely Administer:	Nursing Assessment/Considerations:
Amiodarone 300 mg IV push 150 mg/3 mL vial	treat irregular heart beat	IV Push: Volume every 15 sec?	auscultation of heart sounds check pulses

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:

rhythm is regular

Clinical Significance:

resuscitation was successful

Nursing Priority Intervention:

keep monitoring heart rate check labs

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	
pO ₂ (80–100)	64	
pCO ₂ (35–45)	78	
HCO ₃ (18–26)	22	
O ₂ sats (>92%)	90%	
Oxygen delivery	100%	

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

RELEVANT Lab(s):	Clinical Significance:
low ph low pO ₂ high pCO ₂ high HCO ₃ low O ₂ sat	determine effectiveness of oxygen therapy

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

Lab:	Normal Value:	Why Relevant?	Nursing Assessments/Interventions Required:
pH			
Value: 7.15		indicates how acidic, neutral or basic the blood gases are	administer prescribed medication to control ph balance

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:
stats are showing improvement	glimpse into overall well being
RELEVANT Assessment Data:	Clinical Significance:
acute distress coarse crackles scattered unresponsive responds to pain stimuli	symptoms impair daily functioning

- Has the status improved or not as expected to this point?
yes
- Does your nursing priority or plan of care need to be modified in any way after this evaluation assessment?
not at the moment
- Based on your current evaluation, what are your nursing priorities and plan of care?

keep monitoring breathing, vs, labs

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: ACLS Priorities:	Rationale:	Expected Outcome:
resuscitation cleared airway	provide treatment to persons experiencing cardiac and pulmonary arrests	deliver high quality care during critical cardiac events

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	treat narcotic overdose	IV Push: Volume every 15 sec?	patient can become irritable and anxious

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 dolton 52 yrs old
BRIEF summary of primary problem:	circulation of oxygen
Day of admission/post-op #:	2
Background:	
RELEVANT past medical history:	COPD chronic back pain
Assessment:	
Most recent vital signs:	t:99.1 p: 128 (regular) bp: 128/88 O2: 92%
RELEVANT body system nursing assessment data:	heart lungs
RELEVANT lab values:	blood gases cbc troponin bnp
INTERPRETATION of current clinical status (stable/unstable/worsening):	stable
Recommendation:	
Suggestions to advance plan of care:	monitor circulation cbc and electrolytes troponin bnp

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.	improve airway

Arterial/Blood Gases:	Current:	High/Low/WNL?	Prior:
pH (7.35-7.45)	7.29		7.15
pO2 (80-100)	102		64
pCO2 (35-45)	48		78
HCO3 (18-26)	23		22
O2 sats (>92%)	100%		90%
Oxygen delivery	100%		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:
pO2 elevated pCO2 elevated	determine effectiveness of oxygen therapy	improve

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

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

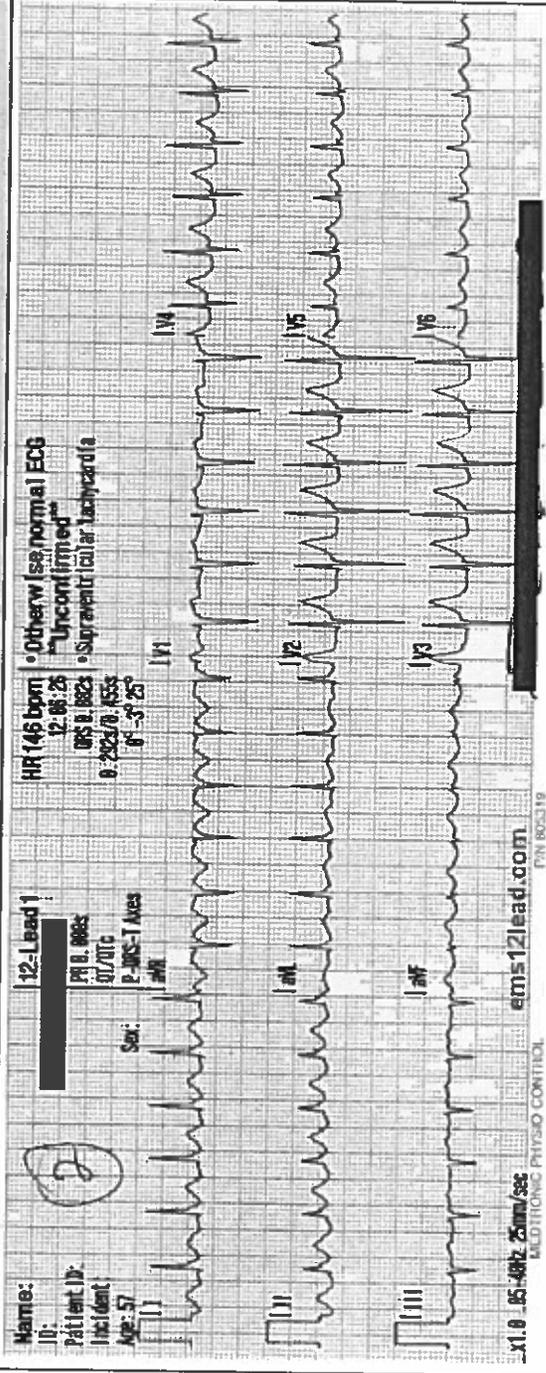
RELEVANT Lab(s):	Clinical Significance:	TREND: Improve/Worsening/Stable:
hgb low platelets low neutrophil high	oxygen distribution	improve

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

12 Lead EKG:



Interpretation:

heart rhythm improving

Clinical Significance:

give insight to heart health

Education Priorities/Discharge Planning

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

 - take medication as prescribed do not stop abruptly
- What are some practical ways you as the nurse can assess the effectiveness of your teaching with this patient?*

 - ask thorough question get history

Caring and the “Art” of Nursing

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

depression and loneliness

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

listen and give feedback

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?*

a persons condition can change really fast

2. *What would I do differently (if applicable) in this situation to prevent this outcome?*

get labs earlier

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

create a prevention model