California State University, Stanislaus School of Nursing
NURS 2910, 4810
Plan of Care Evaluation

Patient Data

Demographics	Gender: F Age: 47 Height: 160 cm Weight: 131.5 kg Primary language: English Spirituality: Catholic			
Vital signs	T: 36.8 HR: 105 RR: 12 BP: 121/67 O2sat: 99% Pain: 7 Pain scale type: Numeric Scale			
Admitting Dx	Acute hypoxemic respiratory failure, COVID pneumonia			
PMHx	HTN, DM type II, dyslipidemia, chronic kidney disease (stage III), chronic anemia			
PSHx	Cholecystectomy, blepharoplasty (2007), carpel tunnel release			
Surgery	Surgery this admission: Ø POD: Ø			
		Advance directive: Ø	Isolation: contact for MRSA	VS Frequency: q4hr
Diet order: NPO		Activity order: reposition	Vascular access: central left internal jugular vein	IVF: D5W with 0.9% normal saline, blood transfusion
Oxygen therapy: ventilator A/C pressure control at 30%		Foley: indwelling 16Fr urinary catheter	Feeding tube: vital high protein formula @ 55mL/hr	Glucose checks: q6hr
VTE prophylaxis: SCD, heparin		Drains/tubes: rectal tube	Wounds/dressings: DTI (deep tissue injury) at sacrum	Telemetry: yes
Restraints: Ø		Safety issues: fall risk	Braden: 12	D/C plan: No targeted discharge date

Pathophysiology: required – evidence-based reference(s) and citation(s).

Acute Hypoxemic Respiratory Failure (AHRF) is a form of acute respiratory failure where there is an inadequate exchange of oxygen between the alveoli and pulmonary capillaries. Four main physiologic mechanisms that may cause hypoxemic respiratory failure include ventilation (V) and perfusion (Q) mismatch, shunt, diffusion limitation, and hypoventilation. In my patient's case, diffusion limitation was evident as gas exchange across alveolar-capillary membrane was compromised by pulmonary fibrosis resulted from COVID-19 virus. This led to significant damage to the alveolar membrane and impede the lung tissue from getting adequate perfusion. This is supported by the chest Xray from 10/26 @ 1831 that revealed dense consolidation of right mid and lower lobes and absent lung sounds across the lower lobes bilaterally. Another contributing factor is my patient's medical history of chronic kidney disease and anemia. Both lungs and kidneys work together to maintain acid-base equilibrium. If for example, a patient is having respiratory acidosis, the kidneys would initiate compensatory mechanism increase pH value. Without proper kidney function, it is harder to restore the acid-base balance and partial pressures. My patient's CBC panel also revealed low levels of RBC, Hgb, and Hct, which is consistent with her chronic anemia. Without adequate Hgb, blood has a decreased capability to carry oxygen to vital organs and tissues, including the kidneys and lungs, which may contribute to difficulty in recovery.

Harding, M. M., Kwong, J., Roberts, D., Hagler, D., & Reinisch, C. (2019). ***Lewis's Medical-Surgical Nursing: Assessment and Management of Clinical Problems.*** **Elsevier Health Sciences.**

Lab and Diagnostic Test Data

LABS	Normal Range (Fill in Hospital Norms)	RESULT 1 11/1 @ 0439	RESULT 2 10/31 @ 0449	RESULT 3 10/30 @ 0402	Reason for abnormal lab values related to patient care & nursing implications	
CBC						
• **WBC**	4-10	6.2	5.7	6.2		
• **RBC**	3.5-5.5	2.62 (L)	2.44 (L)	2.37 (L)	Could be r/t anemia, hemorrhage, or kidney disease.	Monitor vital signs and oxygen saturation. Encourage iron rich food (meat, poultry, green leafy vegetables). Teach about risk of dizziness and weakness.
Hemoglobin (Hgb)	11.7-15.7	8.3 (L)	7.8 (L)	7.7 (L)	Could be r/t anemia, hemorrhage, or kidney disease.	Monitor vital signs and oxygen saturation. Encourage iron rich food (meat, poultry, green leafy vegetables). Teach about risk of dizziness and weakness.
Hematocrit (Hct)	35-46	25.8 (L)	23.7 (L)	23.2 (L)	Could be r/t anemia, hemorrhage, or kidney disease.	Monitor vital signs and oxygen saturation. Encourage iron rich food (meat, poultry, green leafy vegetables). Teach about risk of dizziness and weakness.

• **MCV**	80-99	98.4	97.2	98.2		
• **MCH**	25-35	31.8	32	32.6		
• **MCHC**	32-36	32.3	33	33.2		
• **RDW**	11.4-14.6	21 (H)	20.2 (H)	20.5 (H)	Could be indication of nutrient deficiency, such as iron, folate, or vitamin B-12. R/t anemia and kidney disease.	Monitor vital signs and oxygen saturation. Encourage iron rich food (meat, poultry, green leafy vegetables). Teach about risk of dizziness and weakness.
PLT COUNT	150-400	73 (L)	64 (L)	88 (L)	Indication of thrombocytopenia.	Monitor for hemorrhage and severe bleeding (internal or external). Teach pt to report black stool and bruising.
WBC DIFF						
NEUTROPHIL %	40-70%	73	72	79		
BANDS %	0-1%					
LYMPHOCYTE%	12-44%	15	17	12		
MONOCYTE %	4-9%	6	8	6		
CHEMISTRY						
Sodium	136- 145	141	141	143		
Potassium	3.5- 5.1	3.5	3.3 (L)	2.9 (!)	Hypokalemia could be resulted from poor intake of K+ r/t NPO.	Monitor for signs of hypokalemia include muscle twitches, cramps, weakness, and abnormal heart rhythm.
Chloride	98- 107	105	103	107		
CO_2(bicarb)	22- 29	23	24	22		

BUN	7-18.7	18.2	15.6	18.4		
Creatinine	0.6- 1.3	2.5 (H)	2.0 (H)	2.4 (H)	High creatinine levels could be r/t chronic kidney disease	Poor clearance of creatinine results from impaired kidney function. Continue monitor kidney fx labs (BUN, creatinine), fatigue, and muscle weakness.
GFR	90- 120	>= 60	>= 60	>= 60		
Glucose	70- 105	136 (H)	133 (H)	113 (H)	High blood glucose level reflects patient's newly diagnosed type II diabetes.	Monitor blood glucose q4hr. Give insulin as prescribed depending on glucose level.
Calcium	8.4-10.5	7.8 (L)	7.7 (L)	8.2 (L)	Could be r/t inadequate nutrition, kidney disorders, or lack of vitamin D.	Encourage supplementation of vitamin D and intake of food high in calcium like milk.
Iron						
Transferrin						
Iron/ Transferrin						
Phosphorus						
Magnesium						
Lactate						
Serum Ketones						
HbA1C						
LIVER PANEL						
Total protein						
Albumin						
Bilirubin Total						

Alk phosphatase						
HDL						
LDL						
AST						
ALT						
Lipase						
Amylase						
Ammonia						
Cholesterol						
Triglycerides						
Lactate						
Serum Ketones						
CARDIAC PANEL						
CPK						
CPK-MB						
Troponin						
Myoglobin						
BNP						
COAGULATTION						
PT						
INR ratio						

PTT						
Fibrin level						
Fibrinogen						
Anti Factor Xa						
Bleeding time						
D-Dimer						
Drug levels						
UA collection type						
Urine color						
Urine appearance						
Specific gravity						
Urine Ph						
Urine glucose						
Urine bilirubin						
Urine blood						
Urine Ketones						
Urine Nitrites						
Urine Protein						
Urine Leukocytes						
URINE MICRO						
WBC HPF						

RBC HPF						
Nitrate HPF						
Epithelial						
Bacteria						
Mucous						
CULTURES						
URINE CULTURE						
Urine Tox screen						
CSF						
• **WBC**						
• **RBC**						
• **Glucose**						
• **Protein**						
• **Culture**						
Blood Cultures						
Stool Cultures						
Sputum Cultures						
Nasal Cultures						
ABG(FIO_2 + device)						
pH						
PO2						

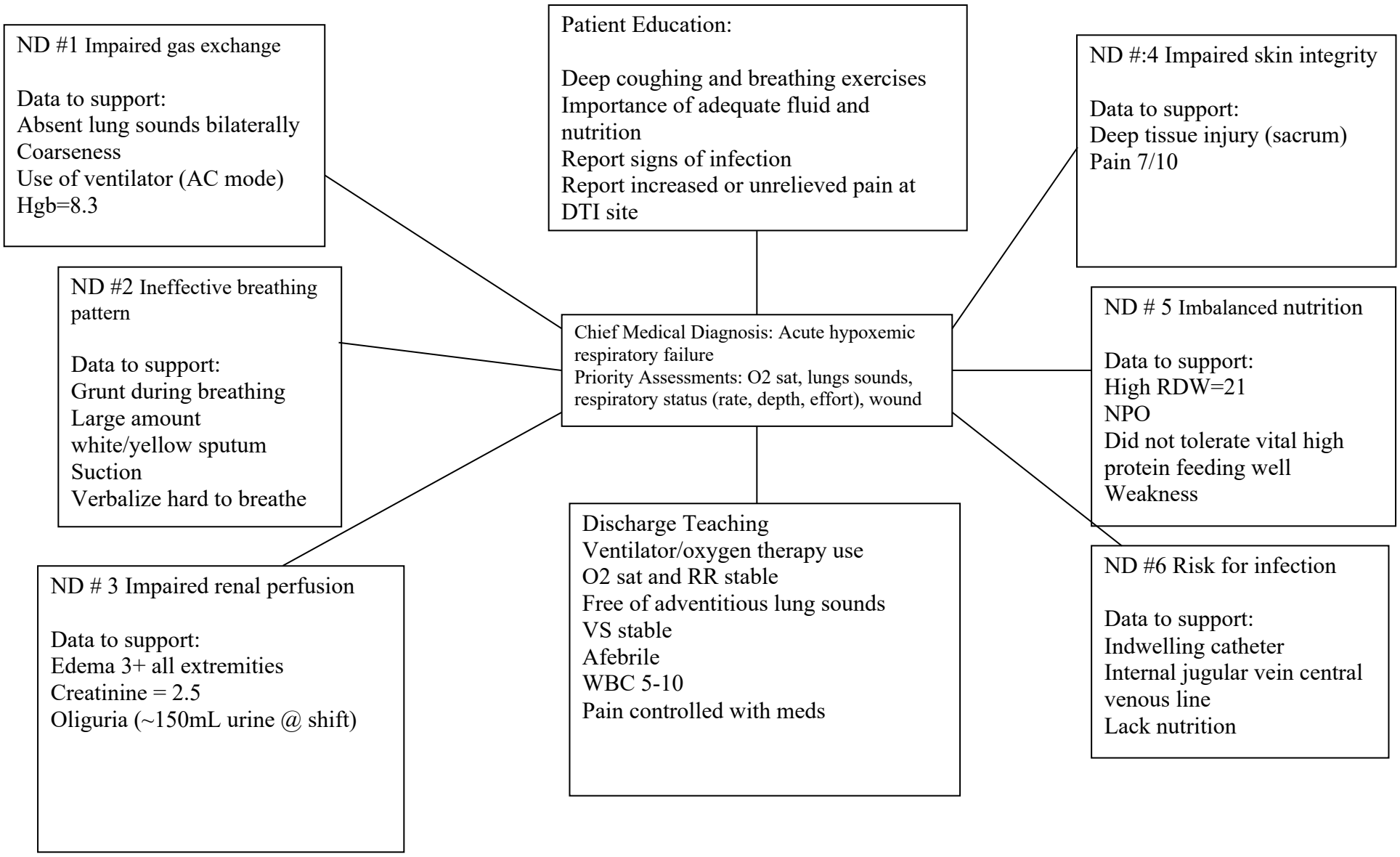
PCO2						
Bicarbonate						
Oxygen Saturation						
Anion gap						
Tox Screen						
Therapeutic Drug Levels						
DIAGNOSTIC TESTS **(ALL DIAGNOSTIC TESTS SHOULD BE HERE)**						
ECG						
X ray					10/30 @ 1058 XR of abdomen NG tube in stomach. Proximal small bowel dilation. Possible ileus. Persistent distention of proximal small bowel loops up to 5.5 cm diameter	10/26 @1831 chest XR Dense consolidation is seen involving RT mid and lower lung. A diffuse increase in interstitial pattern is seen bilaterally. Minimal right pleural effusion may be present
Angiography						
Heart Cath. Lab						
CT Scans						

MRI						
Endoscopy						
Nuclear Scan						

Medications				
Generic **Trade Name** Drug classification (***Therapeutic & Pharmacologic***)	Dose/Route Frequency Rate of Administration (if needed)	Action of Drug Purpose (**specific to Pt**)	Possible Side Effects	Nursing Considerations related to patient care and teaching (What to assess, when to hold, what to teach, etc. Anything other than the side effects that the hospitalized patient needs to know.)
G: ascorbic acid T: Ascor, Cevalin *Th: vitamins* *Ph: water-soluble vitamins*	500 mg PO Tab qDay	**Purpose:** Treat ascorbic acid deficiency. Supplemental therapy for chronic hemodialysis and long-term parenteral nutrition. **Action:** Reversibly oxidized into vitamin c in body	**Possible side effects include:** CNS: drowsiness, fatigue, insomnia GI: cramps, heartburn Hemat: deep vein thrombosis	Assess for signs and symptoms of vitamin C deficiency (faulty bone and tooth development, gingivitis, loosened tooth). Educate about foods high in ascorbic acid, including citrus fruits, tomatoes, and raw peppers.
G: epoetin alfa T: Retacrit *Th:* antianemics *Ph:* erythropoiesis stimulating agents	10,000 unit subcut INJ qTuThSa	**Purpose:** Elevate RBCs **Action:** Stimulate erythropoiesis (production of RBC)	**Possible side effects include:** CNS: seizures CV: HF, MI, HTN, stroke, thromboembolic events	Monitor BP before and during therapy. Monitor symptoms of anemia and hematocrit. Lab test may show increased WBCs and platelets. Stress importance of compliance with dietary restrictions, medications and dialysis. Foods high in iron include broccoli kale, beef and blackberries.
G: heparin T: Hep-Lock, Hemochron *Th: Anticoagulants* *Ph: Antithrombotics*	5,000 unit subcut INJ q8hr	**Purpose:** Prophylactic use for VTE. Prevent thrombus formation	**Possible side effects include:**	Assess for signs of bleeding and hemorrhage (bleeding gums, tarry stools). Monitor activated partial thromboplastin time (aPTT) and hematocrit prior to treatment.

		Action: Potentiate the inhibitory effect of antithrombin on factor Xa and thrombin	Hemat: bleeding, anemia, heparin-induced thrombocytopenia. Local: pain at inj site	Advise patient to report any unusual bleeding. Caution patient to avoid activities leading to injury and use soft toothbrush during heparin therapy.
G: insulin glargine T: Lantus *Th: hormones* *Ph: pancreatics*	10 unit subcut INJ qHS	**Purpose:** Control of hyperglycemia **Action:** Stimulate glucose uptake in muscle and fat, inhibit hepatic glucose production	**Possible side effects include:** Endo: hypoglycemia Local: erythema, swelling	Monitor blood glucose and assess for symptoms of hypoglycemia (tingling in hands, restless, tachycardia, weakness) Emphasize the importance of compliance with nutritional guidelines and regular exercise. Instruct patient on signs and symptoms of hypo- and hyperglycemia and what to do
G: metoclopramide T: Reglan *Th: antiemetics* *Ph: prokinetic agents*	10 mg IV push INJ q8hr	**Purpose:** Decrease nausea/vomiting and symptoms of gastric stasis **Action:** Blocks DA receptors. Stimulate motility of upper GI tract and accelerate gastric emptying	**Possible side effects include:** -neuroleptic malignant syndrome -extrapyramidal reactions, restlessness -drowsiness, anxiety	Assess for nausea, vomiting, abdominal distention, and bowel sounds before and after administration. Monitor for neuroleptic malignant syndrome, including signs of muscle rigidity, hyperthermia, altered consciousness, and irregular BP.
G: metoprolol T: Lopressor, Toprol-XL *Th: antianginals, antihypertensives* *Ph: beta-blockers*	25 mg PO Tab BID hold for HR <50 or SBP <90	**Purpose:** Decrease BP and heart rate. Decrease rate of CV mortality by preventing MI **Action:** block beta1 adrenergic receptor	**Possible side effects include:** -bradycardia, HR -hypotension -pulmonary edema -weakness, fatigue	Monitory BP, EKG and pulse during therapy. Advise patient to change positions slowly to minimize orthostatic hypotension

Concept Mapping



Nursing Interventions Classification (NIC)		
ND	**Interventions**	**Evaluation of Response**
1. Impaired gas exchange r/t damage to alveolar capillary membrane AEB coarseness and absent lung sounds	1. Assess RR, depth, effort (use of accessory muscles). 2. Monitor oxygenation status and auscultate for lung sounds 3. Monitor ventilator and supplemental oxygen setting to ensure adequate O2	No acute respiratory distress, RR 12, SpO2 improved to 99%. Absent lung sounds are noted at lower lobes bilaterally. Ventilator was set at A/C (assist control) so that a fixed tidal volume would be delivered at set intervals or when the patient initiates a breath.
2. Ineffective breathing pattern r/t AHRF and lung consolidation AEB grunting during breathing cycle, large amount of white/yellow sputum, and verbalizing "hard to breathe".	1. Assess RR and depth. Assess respiratory effort, including use of accessory muscles and nasal flaring 2. Auscultate breath sounds for any adventitious sounds. Observe for cyanosis of skin (tongue and mucous membranes) 3. Utilize position changes (switching sides and elevate HOB 30 degrees) 4. Monitor amount and color of sputum. Suction (< 10 seconds) as needed to help clear blockages in the airway.	No acute respiratory distress, RR 12, SpO2 improved to 99%. Absent lung sounds are noted at lower lobes bilaterally. Pt also exhibited less grunting and verbalizes "easier to breathe" when position was changed. Upon suctioning, large amount of white and yellow sputum noted. Gurling sounds in the airway improved with suctioning.
3. Impaired renal perfusion r/t chronic kidney disease and anemia AEB edema, oliguria, and elevated creatinine	1. Assess lab values of kidney function (BUN, creatinine) 2. Assess urine output volume and characteristics of urine (color, odor, amount, presence of blood) 3. Assess presence of edema and any changes in mentation (sudden onset of confusion)	Patient's BUN is within normal limits (18.2), but creatinine is elevated (2.5). Oliguria noted as only approximately 150mL collected through indwelling catheter during shift. Urine was yellow and no hematuria noted. Edema is 3+ upon palpation in all extremities.
4. Impaired skin integrity r/t DM, poor healing, and altered	1. Assess DTI site and pain level. Offer and administer pain meds as needed	Patient's DTI site at the sacral area appears to be red, but no purulent drainage. Position was changed consistently every 2 hrs to avoid pressure ulcers. Wound was padded and dressing

nutritional state AEB deep tissue injury (DTI) in sacral area	2. Use sterile technique during wound care and dressing change 3. Change position q2 hrs and pad bony prominence to avoid further pressure injury	was changed. Patient reports 7/10 pain on a numeric scale.

5. Imbalanced nutrition r/t impaired kidney function and NPO order AEB decreasing body weight, inadequate nutritional intake, and deficiency	1. Monitor patient's body weights daily. Monitor lab values for any indications of nutritional deficiency. 2. Offer and administer vitamin C (ascorbic acid) supplementation. 3. Provide vital high protein formula through g-tube	Patient weighs 131.5 kg. Although there has been a decreased body weight compared to admission, she is still considered obese. Lab values reveals consistent high level of RDW (21, 20.2, 20.5) over 3 consecutive days, which is an indication of nutritional deficiency. Vitamin C was given as supplementation to meet nutritional needs. Vital high protein formula was also started at 10 mL/hr since the patient has been on NPO order. The patient did not tolerate tube feeding well and reports gastric discomfort. The tube feeding was stopped and will return feeding when patient feels better.
6. Risk for infection r/t indwelling catheter, jugular vein central venous line, impaired skin integrity (DTI wound)	1. Monitor vital signs (especially temperature) and lab values (WBC). 2. Monitor for signs of infection such as redness/warmth, elevated temperature and WBC. Assess for foul smelling/yellow drainage at wound site. 3. Teach patient good hygiene (handwashing) and encourage adequate nutritional intake.	Patient's temperature was 36.8 and WBC consistently within normal range (6.2 and 5.7). Patient's central venous line is inspected by monitoring signs of warm/redness/swelling at insertion site, which none is present upon assessment. No purulent drainage noted at wound site, and urine appears to be yellow and free of blood.

- HEAD TO TOE NURSING ASSESSMENT (Date and Time)	
- **HEAD / NEURO**	
- **L.O.C.**	- A&O x4. Denies dizziness but feels generally tired.
- **Optical**	- PERRLA. No alterations in vision, awaken spontaneously. Able to track finger movement.
- **Head and neck**	- Normocephalic, limited neck ROM. No facial droop; smile symmetrically. Denies headache.
- **Nose and Throat**	- NG tube in left nostril, with no sores or discharge. Tracheostomy in place. Mucous membranes moist. Audible consistent gurgling sound
- **Gross and Fine Motor**	- Pt is immobile and presents with general weakness.
- **RESPIRATORY**	
- **Pulmonary**	- Large amount of thick white/yellow sputum. Breathing assisted with ventilator; unable to wean off ventilator due to getting tachypneic and tachycardic.
- **Breast and back**	- No acute respiratory distress. Reduced breath sounds in lower lobes bilaterally, and coarseness auscultated in upper lobes bilaterally.
- **CARDIO-VASCULAR**	
- **Cardiac**	- No chest pain/palpitations. S1 and S2 sounds audible with no murmurs/gallops/rub.
- **Central**	- EKG has normal sinus rhythm
- **Peripheral**	- Tachycardic, strong BL radial pulse, but weak dorsalis pedis pulse BL. Edema 3+ in all extremities. Capillary refill < 2 seconds.
- **GASTROINTESTINAL**	
- **Abdominal**	- Hypoactive bowel sounds at all 4 quadrants. No tenderness upon palpation, no guarding/ rebound tenderness
- **Nutritional**	- NPO with gastrostomy tube in place. No nausea/vomiting, diarrhea.
- **GENITOURINARY**	

- **Pelvic and rectal**	- Oliguria; about 150 mL urine collected from indwelling catheter during shift. Brown feces collected through rectal tube.
- **MUSCULOSKELETAL**	- Non-ambulatory, requires total assistance and stays in bed
- **INTEGUMENTARY**	-
- **Skin / Hair**	- Pink, warm and dry. Deep tissue injury at sacral area, rates pain 7/10.

SBAR REPORT: (What did you report off to the RN upon end of shift)

Pt is a 47 y/o female admitted on 9/1 after presenting at ED with worsening COVID symptoms. She was vaccinated with Pfizer in March and diagnosed with COVID on 8/26. She initially took Tylenol for fever but later developed persistent cough and shortness of breath.

NKDA and food allergies. She has a past medical history of HTN, DM type II, dyslipidemia, chronic kidney disease (stage III), and chronic anemia. She is on hemodialysis treatment every Tuesday, Thursday, and Saturday.

Most recent VS: T 36.8 HR 105 RR 12 BP 121/67 O2Sat 99%.
She is A&O x4 but reports general weakness and tiredness. Easily open spontaneously and eyes able to track. Large amount of thick white/yellow sputum collected upon suctioning. Breathing is assisted with ventilator set on A/C pressure control. No acute respiratory distress. Reduced breath sounds in lower lobes bilaterally, and coarseness auscultated in upper lobes bilaterally. Tachycardic with regular rhythm. Strong radial pulse but weak dorsalis pedis bilaterally. Pitting edema 3+ noted in all extremities. Hypoactive bowel sounds in all quadrants and oliguric. Xray of chest reveals dense consolidation of right mid and lower lobes, while Xray of abdomen reveals persistent distension of proximal small bowel loops up to 5.5 cm diameter. Labs reveal low levels of RBC, Hgb, and Hct, which is consistent with chronic anemia. Creatinine is consistently high, which reflect chronic kidney disease. Pt requires total assistance and non-ambulatory.

I recommend continue monitoring respiratory status, frequent change of positions (switching sides), and suctioning to help with breathing. Continue monitoring bowel sounds and assess for pain/discomfort as Xray suggested possible ileus. Patient just switched from NPO to vital high protein formula, so monitor patient's response to feeding. Pt also has deep tissue injury at sacral area and dressing was changed during shift, so please monitor condition.

ECG Documentation

Rhythm: Atrial rhythm: Regular __x_____ Irregular _____ Ventricular rhythm: Regular _x____ Irregular _____

Rate: Atrial Rate__112___ Ventricular rate _112__ PR interval __0.16____QRS interval ___0.08____QT interval___0.32__

Conduction: Is AV conduction normal? (Y/N)__Y_____ If not, why is it abnormal? _____

P wave normal? (Y/N)_Y___ QRS complex normal? (Y/N) __Y_____ Are all of the QRS complexes the same? (Y/N) ___Y___

Are there premature beats? (Y/N) _N_ Atrial _____ventricular _____ Interpretation of rhythm: __Sinus Tachycardia_____

Potential hemodynamic consequences of this rhythm and interventions for this rhythm: _Normal rhythm, continue monitoring_____