Oral and Parenteral Medication Administration

Skills & Reasoning

Jerry Williams, 62 years old

Primary Concept		
Perfusion		
Interrelated Concepts (In order of emphasis)		
• Gas Exchange • Clinical Judgment • Patient Education		
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:

Jerry Williams is a 62-year old obese (BMI 35.2) Caucasian male with a history of diastolic heart failure and type II diabetes. Last evening, he began having difficulty breathing with activity. He thought he might be getting a cold because he had a runny nose. He reports more swelling in his lower legs the past couple days. He woke up this morning with increased difficulty breathing when he woke up and his wife called 911.

Paramedics report that his initial VS: HR:92 RR: 28 BP: 172/88 O2 sat: 80% on room air with scattered expiratory wheezing bilat. He was placed on oxygen by facemask and albuterol nebulizer administered with some improvement in his breathing. His RR is now 24 upon arrival to the emergency department ED). His initial labs have resulted; creatinine of 2.5 (last adm. 1.8), K+ 3.5 (last adm. 3.7) and BNP 944 (last adm. 322). Jerry is given furosemide 40 mg IV in the ED and had 800 mL urine output in the last hour. He is admitted to cardiac telemetry, and you are the nurse responsible for his care.

What data from the present problem do you NOTICE as RELEVANT and why is it clinically significant?
(Reduction of Risk Potential/Health Promotion and Maintenance)

RELEVANT Data:	**Clinical Significance:**
Swelling in lower extremities RR - 28 down to 24 upon arrival BP - 172/88 O2 sat - 80% Bilateral wheezing Given O2 via facemask Given albuterol nebulizer Creatinine - 2.5 BNP - 944 Given 40 mg furosemide IV	Difficulty breathing High BP indicates and swollen legs can indicate fluid volume overload or exacerbated heart failure Possible fluid in lungs, will continue to listen for crackles Elevated creatinine indicates kidney issues Elevated BNP, indicative of heart failure which he has a hx of Given Lasix to help with the fluid overload sx

What is the RELATIONSHIP of his past medical history and current medications? Why is your patient receiving these medications? *(Which medication treats which condition? Draw lines to connect)*

Past Medical History (PMH):	**Home Medications:**
Hyperlipidemia	Furosemide 20 mg PO every morning
Hypothyroidism	Atorvastatin 40 mg PO at bedtime
Type II diabetes	Metoprolol 50 mg PO BID
Diastolic heart failure	Levothyroxine 112 mcg PO daily
Chronic kidney disease stage III	Exenatide microspheres 2 mg subq. weekly

Nursing Assessment Begins:

Current VS:	**Most Recent in ED:**	**P-Q-R-S-T Pain Assessment:**	
T: 98.2 F/36.8 C (oral)	**T:** 98.8 F/37.1 C (oral)	**P**rovoking/Palliative:	
P: 88 (reg)	**P:** 92 (reg)	**Q**uality:	Denies
R: 24 (reg)	**R:** 24 (reg)	**R**egion/Radiation:	
BP: 142/76	**BP:** 148/80	**S**everity:	
O2 sat: 93% 4 liters n/c	**O2 sat:** 94% 4 liters n/c	**T**iming:	

Current Assessment:	
GENERAL SURVEY:	Pleasant, in no acute distress, calm, body relaxed, no grimacing, appears to be resting comfortably.
NEUROLOGICAL:	Alert & oriented to person, place, time, and situation (x4); muscle strength 5/5 in both upper and lower extremities bilaterally.
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 coarse crackles in bases bilat.with equal aeration on inspiration and expiration in all lobes anteriorly, posteriorly, and laterally, nonlabored respiratory effort.
CARDIAC:	Pale/pink, warm & dry, 2+ pitting edema in feet and ankles, 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. Unable to assess JVD due to obesity/thick neck
ABDOMEN:	Abdomen round, soft, and nontender. BS + in all four quadrants
GU:	Voiding without difficulty, urine clear/yellow
INTEGUMENTARY:	Skin warm, dry, intact, normal color for ethnicity. No clubbing of nails, cap refill <3 seconds, Hair soft-distribution normal for age and gender. Skin integrity intact, skin turgor elastic, no tenting present.

What clinical data do you NOTICE that is RELEVANT and why is it clinically significant?
(Reduction of Risk Potential/Health Promotion and Maintenance)

RELEVANT VS Data:	Clinical Significance:	TREND:
BP decreasing and RRs still at 24	This means fluid is leaving the body d/t lasix and although the rr isn't getting better it also isn't getting worse. Consider another neb treatment	Similar, possibly slight improved
RELEVANT Assessment Data:	**Clinical Significance:**	**TREND:**
Course crackles, bilateral edema in feet and ankles	Fluid in lungs and excess fluid in body	Worsening

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

Problem:	Pathophysiology of Problem in OWN Words:	Primary Concept(s):

Heart Failure Exacerbation n	The problem is that the heart is not pumping fluid efficiently and because of that there is some backflow which is causing all the symptoms the pt is experiencing.	Decreased ejection fraction and inefficient blood flow

2. ***What nursing priority(ies) will guide your plan of care that determines how you decide to RESPOND?*** *(Management of Care)*

Nursing PRIORITY:		
PRIORITY Nursing Interventions:	**Rationale:**	**Expected Outcome:**
Auscultate lung sounds often	If the fluid in the lungs is worsening its needs to be caught as soon as possible	Lasix should improve the fluid in the lungs

Medical Management: Admission Medication Orders

Care Provider Orders:	**Mechanism of Action:**	**Expected Outcome:**
Administer the following home medications: Atorvastatin 40 mg PO daily Metoprolol 50 mg PO BID Levothyroxine 112 mcg PO daily New order: Heparin 5000 units subq. BID	Atorvastatin inhibits the enzyme then lowers the total cholesterol/LDL Metoprolol blocks the stimulation of beta-adrenergic receptors and decreases BP and HR. Levothyroxine will supplement thyroid hormones Heparin inhibits the effect of antithrombin on thrombin	Decrease LDL Drop BP and HR Replaces thyroid hormone and improves function Prevent thrombus formation

Medication Administration

1. ***Identify the "rights" of safe medication administration?***

Check name and date of birth with the pt to ensure it's the right pt

Ensure that the medication you have is the same one ordered and that the dose is the same one ordered

Ensure that how you plan to give it is the correct route.

right time, right documentation, right to refuse, right assessment, right prescription, right education are also essential

2. ***Identify essential steps the nurse must implement to safely administer ORAL medications in practice?***
(Management of Care)

Check name and date of birth with the pt to ensure it's the right pt

Ensure that the medication you have is the same one ordered and that the dose is the same one ordered

Ensure that how you plan to give it is the correct route.

Essential Steps to Be Safe in Practice:

3. What essential teaching will the nurse reinforce about these medications? *(Health Promotion and Maintenance)*

Medications:	**Patient Education:**
Atorvastatin 40 mg PO daily	Store at room temperature with no moisture, heat, or light, avoid anything w grapefruits, avoid high cholesterol foods
Metoprolol 50 mg PO BID	No etoh, same time everyday w a meal
Levothyroxine 112 mcg PO daily	Take w a glass of water on an empty stomach. No other meds should be taken w it
New order: Heparin 5000 units subq. BID	Bleeding/fall precautions (Soft bristled tooth brush, electric razor)

Evaluation: Two Hours Later…

Jerry's respiratory rate has increased to 28 and his O2 sat has dropped to 88-90% on 4 liters n/c. Coarse crackles are present halfway up bilaterally. He states he has a hard time catching his breath at rest.

1. What data do you NOTICE as RELEVANT and why is it clinically significant?

(Reduction of Risk Potential/Health Promotion and Maintenance)

RELEVANT Data:	**Clinical Significance:**
Incresed RR, lowered 02, crackles halfway up lungs	Cannot oxygenate, incrasing fluid in lungs

2. ***Has the status improved or not as expected to this point? Does your nursing priority or plan of care need to be modified in any way after this evaluation assessment?*** *(Management of Care, Physiological Adaptation)*

Evaluation of Current Status:	Modifications to Current Plan of Care:
Worsening, not gone to plan	I would like to give another 40 mg of Lasix

Medical Management: New Orders from Primary Care Provider

Care Provider Orders:	Rationale/Mechanism of Action:	Expected Outcome:
Furosemide 40 mg IV BID Place on high flow n/c if unable to maintain O2 sat >92% on 6 liters n/c	Lasix is a diuretic so the pt should get rid of excess fluid and be able to breath better Giving more oxygen through a cannula should allow more oxygen to enter the blood	The crackles should decrease and the o2 sats should improve.

When assessing the peripheral IV site, you notice that the site appears moist, cool to the touch with fluid leaking at the insertion site when flushed with saline. The extension tubing is dangling with one piece of tape holding it to the patient is beginning to peel off.

What clinical data do you NOTICE that is RELEVANT and why is it clinically significant?
(Reduction of Risk Potential/Health Promotion and Maintenance)

RELEVANT Data:	Clinical Significance:
Leaking fluid, moist and warm	Infiltration, need new line

Parenteral Medication Administration

1. ***Identify the essential steps the nurse must implement to safely administer subcutaneous medications?*** (Management of Care)

Essential Steps to Be Safe in Practice:
All of the previously mentioned pt rights, 2 inches away from umbilicus. Must be able to pinch an inch of fat

2. ***Recognizing that the IV has infiltrated, identify the essential steps that the nurse must implement to start an IV?*** (Management of Care)

Stop pump and discontinue the old line, clean and prep the site well, ensure a correct gauge and a patent line by flushing before medications are connected.

Essential Steps to Be Safe in Practice:

3. ***Identify the essential steps the nurse must implement to safely administer intravenous medications?*** (Management of Care)

Ensure all of the patient rights, ensure that all of the dosages and rates are correct, ensure the tubing is properly primed to avoid an air embolism

Essential Steps to Be Safe in Practice:

4. ***What will the nurse teach the patient about these medications? Why is he receiving them?***
(Health Promotion and Maintenance)

Medications:	**Patient Education:**
Furosemide 40 mg IV BID	You are receiving Lasix so that your body properly gets rid of all of the excess fluid and your breathing improves. Lasix will pull fluid out of the legs/lungs and it will be urinated out.

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 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?**
Proper steps to manage heart failure, how detrimental heart failure can be if not treated properly and quickly	I think I knew the next steps well and also knew the pt right of medication administration.
What could have been done better?	**What is your plan to make any weakness a future strength?**
I could have known more about heart failure and the pathophysiology of it	I think this case study taught sufficient information for treatment of it but in the future I will ensure I know more about disease processes.