## Online Lab B: Pediatric Assessment & Intervention Activity

**DUE: Please upload your completed assignment to the Dropbox no later than Thursday, December 10th at 1200.**

**Orders/Information:** You are a nurse working in the pediatric intensive care unit (PICU). You just arrived for your shift and received report on Jimmy John who is under the care of Dr. George.

**Scenario:**

Patient: Jimmy John is a 7-year old male recovering from a motor vehicle collision where he sustained a severe closed head injury. He was on the ventilator for 2 weeks. He currently has a tracheostomy and is on room air. He has spontaneous respirations. He responds only to painful stimuli. He receives nutrition via his feeding tube but is currently NPO for an MRI of the head later today. He had a chest tube placed 3 days ago for a pneumothorax. His lung sounds are clear and equal bilaterally. Respirations 40 and HR 120. Active bowel sounds X 4 quadrants. Pulse 2+ for all 4 extremities. Skin warm and dry. Weight = 50 lbs. He has NKDA. Urine output for the past 12 hours = 272 mL.

Physician Orders:

NPO
Bedrest
Chest tube to gravity
Foley catheter to gravity
HME to trach as tolerated
Call for O2 saturation less than 89%
Ceftriaxone 575 mg IVPB every 12 hours
D51/4 NS + 20 mEq KCL/liter at 85 mL/hr
I & O
Keep G Button site clean and closed when not in use

> ➤ Are there any physician's orders that you would question and if so, why? (Hmmm.....think about this....and yes, you should have something to list here)

The pt's maintenance fluid requirement is 65mL/hr so I would question the order of D51/4 NS + 20 mEq KCL/L at 85mL/hr. The pt is receiving more fluids than is needed when he has reached his minimum acceptable urine output. The pt is urinating 22.66mL/hr when his minimum acceptable urine output is 11.35 so he does not need more fluids.

> Calculate Jimmy's weight in kilograms __22.7kg_____ kg

50lbs/2.2lbs = 22.7kg

> Calculate maintenance fluid requirements for this patient (show your calculations) ___65__ mL/hr.

10kg x 100 = 1,000mL
10kg x 50 = 500mL
2.7kg x 20 = 54mL
1000 + 500+ 54 = 1,554mL/24hrs
1,554mL/24hrs = **65mL/hr**

> What amount should you set the "volume to be infused" on the IV pump? (Remember, this is a safety measure…if you don't know how to calculate this, look back at the Assessment and Intervention of the Child powerpoint presentation) ___170___ mL

The volume to be infused is ordered as 85mL/hr so I would multiple that by 2 and set the pump at **170mL** so that the pump will go off in 2 hrs for me to go and check on my patient. If the orders are changed to 65mL/hr because I questioned it then I would do the same thing and multiply by 2 and set the pump at 130mL.

> Calculate minimal urine output for this patient (show your calculations) __11.35___ mL/hr.

50lbs / 2.2lbs = 22.7kg
0.5mL/kg/hr x 22.7kg = **11.35mL/hr**

o   Is the urine output appropriate for the last 24 hours?    **<mark>Yes</mark>**   No

➢ Jimmy has an order for Ceftriaxone 575 mg IVPB every 12 hrs. **The pharmacist has mixed the dose that is due now in 25mL Sodium Chloride 0.9%.** (You will need to use a drug reference when completing the following information.)

   o   What is the therapeutic range for this medication per the drug reference?

50-70 mg/kg IV or IM in divided doses q 12hrs. max 2g/dose (2020 Lippincott Pocket Drug Guide for Nurses by Karch and Tucker)

      ▪   Calculate the therapeutic range for this medication for the BID dose ordered (show your calculations).

50lbs x 2.2lbs = 22.7kg

50mg/kg x 22.7kg = 1,135mg/day ----------- 1,135mg / 2 = 567.5mg/dose
70mg/kg x 22.7kg = 1,589mg/day ----------- 1,589mg /2 = 794.5mg/dose

The therapeutic range for each dose is 567.5mg to 794.5mg/dose.
The therapeutic range for the day for this medication is 1,135mg to 1,589mg.

      •   Is the dose ordered within your calculated therapeutic range?

575mg/dose
575mg x 2 = 1,150mg/day
Yes, 575mg fits into the therapeutic range of 567.5mg/dose and 794.5mg/dose.
Yes, 1,150mg fits into the therapeutic range of 1,135mg/day – 1,589mg/day.

   o   What is the recommended concentration per the drug reference?
10mg/mL – 40mg/mL is the recommended concentration

- Calculate the concentration of the prescribed medication (look above to see how much fluid the pharmacist sent this medication in and show your calculations). (**The pharmacist has mixed the dose that is due now in 25mL Sodium Chloride 0.9%.**)

575mg / 25mL = **23mg/mL**

- Is the prescribed dose within the recommended concentration range?

The prescribed dose of 25mL makes the concentration 23mg/mL does fall into the range of 10mg/mL – 40mg/mL.