

*Mercer County  
Community College  
Division of Math, Science  
&  
Health Professions*

*Nursing Program*

*NRS 231  
College Lab/Simulation  
Manual*

*Spring 2015*

**Mercer County Community College**  
**Division of Math, Science and Health Professions**  
**Nursing Program**  
**NRS 231 College/Simulation Lab Manual**

**NRS 231 students are expected to:**

1. Review related class notes, reading assignments and specific lab objectives prior to each college lab/simulation.
2. Participate in discussion topics listed for each lab/simulation.
3. Bring college/simulation lab manual to each class.
4. Bring required equipment to each lab/simulation.
5. Participate in clinical simulations and college lab discussions
6. Complete clinical journaling activity as described in lab manual and course outline
7. Complete Information Technology Literacy Activity
8. Pass Dosage Calculation/Medication Math exam with a score of 90% or better
9. Attend all scheduled college lab and simulation sessions.
10. Arrive at the scheduled time for college and simulation labs (repeated late arrivals will require intervention by NRS 231 Course Coordinator).

**College Lab Weekly Content**

Week 1: Introduction to College Lab, Dosage Calculation/Medication Math Test Alteration in Sensory Perception (Spinal Cord Injury)

Week 2: Advanced Medication Calculation (Weight based), Alteration in Intracranial Regulation (Increased Intracranial Pressure)

Week 3: Alterations in Tissue Integrity (Burn Injury)

Week 4: Emergency/Disaster Preparedness, Bioterrorism

Week 5: Evolve practice test: Pediatric Nursing, HESI Pediatric Exam

**Required Textbooks/Resources:**

Adams, M.L., Holland, L.N. & Urban, C.Q. (2011) *Pharmacology for Nurses A Pathophysiologic Approach*. (3<sup>rd</sup> ed.) Upper Saddle River: Pearson (ISBN-978-0-13-508981-1)

North Carolina Custom Edition, (2011). *Nursing Skills for a Concept-Based Approach to Learning*. New York: Pearson Learning Solutions. (ISBN 13:978-0-558-35687-3)

North Carolina Concept-Based Learning Editorial Board. (2011). *Nursing A Concept-Based Approach to Learning, Volumes One & Two*. Upper Saddle River: Pearson.

Silvestri, Linda A. (2010). *Comprehensive Review for NCLEX-RN Examination*. (5th ed.).

Philadelphia: W.B. Saunders Co. (ISBN: 9781437708257).

NRS 231 College Lab/Simulation Manual. Download from nursing website at [www.mccc.edu/nursing](http://www.mccc.edu/nursing)

**Information Resources:**

Nursing Program website – [www.mccc.edu/nursing](http://www.mccc.edu/nursing)

Evolve-HESI – <http://evolve.elsevier.com> (for case studies & practice exams)

Pearson – [www.mynursingkit.com](http://www.mynursingkit.com)

NCSBN NCLEX-RN Detailed Test Plan –

[https://www.ncsbn.org/2013 NCLEX RN Detailed Test Plan Candidate.pdf](https://www.ncsbn.org/2013%20NCLEX%20RN%20Detailed%20Test%20Plan%20Candidate.pdf)

## **College Lab #1**

**TITLE: INTRODUCTION TO COLLEGE LAB, ALTERATION IN SENSORY PERCEPTION, MEDICATION MATH REVIEW**

### **LAB OBJECTIVES:**

At the completion of this lab, the student will be able to:

1. Examine the impact of SCI health problems on patients and families.
2. Identify the coping strategies of patients with spinal cord injuries.
3. Describe a primary and secondary assessment.
4. Differentiate common complications in SCI patients.
5. Demonstrate proficiency in dosage calculation.

### **REQUIRED READINGS:**

Review Dosage Calculation texts for medication math review.

### **Videos:**

1. *Aging with Spinal Cord Injury*
2. *Understanding Spinal Cord Injury*

### **Post Video Discussion Questions**

#### **AGING WITH SPINAL CORD INJURY(SCI)**

1. How has life expectancy for the SCI patient changed over the years? Why?
2. What is the common recommendation for the SCI patient as they age?
3. What are the normal changes that take place as a result of aging and how does SCI change or intensify these changes?
4. What nursing care do we need to implement to intervene for the above problems?

### **Suggested Evolve Case Study:**

**Medical/Surgical:** Spinal Cord Injury

## Preparation for Dosage Calculation/Medication Math Exam:

Students are required to take a dosage calculation exam on the first Simulation lab day. Dosage calculation problems will be based on previously learned content. Students are required to achieve a score of 90% or better on the exam to administer medications in the simulations. Remediation will be available to students who do not achieve the 90% benchmark.

Students who do not achieve the 90% on the first attempt will be given a second attempt after remediation. All students must achieve the 90 % benchmark on the dosage calculation exam to successful pass NRS 231. Exam problems will be representative from the following types of problems from your dosage calculation book.

1. Oral Dosage of Drugs
2. Parenteral Dosage of Drugs
3. Reconstitution of Solutions
4. Intravenous Solutions, Equipment and Calculations
5. Pediatric and Adult Dosages Based on Body Weight
6. Heparin Drip Calculations

## Sample Heparin Calculation Problems

### Heparin Problems:

#1 - A patient with deep vein thrombosis who weighs 163 pounds is ordered to have a heparin bolus of 80 units per kg followed by an infusion. Calculate the dosage of the heparin bolus to be administered.

- **USE HEPARIN BOTTLE 1,000 u/ mL- RN mixes**

**Step 1** - convert pounds to kilograms:

$$163 / 2.2 = 74 \text{ kgs.}$$

**Step 2** - calculate dose in units:  $74 \times 80 = 5920$ units

**Step 3** - calculate mL dosage

$$1000\text{U} : 1\text{ml} :: 5920 \text{ u} : X \text{ mL}$$

$$1000\text{U} \times X\text{mL} = \underline{5920\text{U} - \text{bolus}}$$

- **X mL = 5920 / 1000 = 5.9 mL bolus**

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#2 - Order: Heparin 2,500 U per hr via IV pump from Heparin 50,000U in 1,000mL D5W.

- Calculate the flow rate. Show all math.

- **Step 1: U/mL:  $50,000 / 1,000 = 50 \text{ U/mL}$**

- **Step 2 -**

$$50\text{U} : 1 \text{ mL} :: 2,500\text{U} : X\text{mL}$$

$$50x = 2,500$$

$$X = 2,500 / 50$$

$$X = \underline{50\text{mL/hr}}$$

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3. **Ordered:** 30,000 units heparin IV in 250 mL to infuse at 20 units/kg/hr. The patient weighs 185 pounds.
  - a. How many kilograms does the patient weigh?
  - b. How many units/hr will the patient receive?
  - c. How many mL/hr will infuse?
  - d. How many hours will it take to infuse?
  
4. **Ordered:** 40 units/kg heparin IV. The patient weighs 210 pounds.
  - a. How many kilograms does the patient weigh?
  - b. How many total units of heparin will the patient receive?
  
5. **Ordered:** 2000 units/hr heparin  
**Available:** 1000 mL with 30,000 units heparin
  - a. How many hours will the IV infuse?
  - b. At how many mL/hr will you set the electronic infusion device?
  
6. **Ordered:** Heparin 8000 units subcutaneous q8h  
**Available:** Multidose vials of 5000, 10,000, and 20,000 units/mL
  - a. Which vial will you choose?
  - b. How many milliliters will you give?

## Dosage Calculation General Information

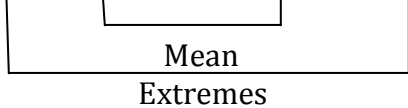
### BODY WEIGHT CONVERSIONS

Change 150 lbs. to Kilograms. Divide 150 by 2.2 = 68 Kg.

Change 60 Kgs. to Pounds. Multiply 60 x 2.2 = 132 lbs.

### USE OF RATIO AND PROPORTION

1 gram : 150 mg :: 0.8 grams : x mg



$$1x = 0.8 \times 150$$

$$1x = 120$$

$$x = 120 \text{ mg.}$$

### IV FLOW RATE

Calculate mL/hr

Total volume = mL/hr

Total time = (hours)

Calculate drops per minute

Total volume x Drop factor = gtt/min

Total time (minutes)

$$\frac{1000 \text{ mL}}{6} = 166.6 \text{ mL/.hr or } 167$$

$$\frac{1000 \text{ mL} \times 15}{480 \text{ min}} = \frac{15,000}{480}$$

$$= 31.25 \text{ gtt/min or } 31 \text{ gtt/min}$$

### CALCULATE ML/HR FOR VOLUMETRIC INFUSION PUMP

$$\frac{\text{Amount of Solution}}{\text{Minutes to Give}} = \frac{\text{mL/hr}}{60 \text{ min}}$$

$$\frac{50 \text{ mL}}{30 \text{ min}} = \frac{x \text{ mL}}{60 \text{ min}}$$

$$30x = 3000$$

$$x = 100 \text{ mL/h}$$

## College Lab # 2

### **TITLE: Alteration in Intracranial Regulation (Increased Intracranial Pressure: ↑ICP), Advanced Medication Calculation (Critical Medications)**

#### **LAB OBJECTIVES:**

At the completion of this lab, the student will be able to:

1. Identify common complications associated with traumatic brain injury.
2. Discuss care priorities for patients with ↑ICP.
3. Analyze interventions to prevent an ↑ICP.
4. Examine appropriate interventions to maintain intracranial homeostasis.
5. Demonstrate proficiency in weight based infusion calculations.

#### **REQUIRED READING:**

Review Dosage Calculation texts for medication math review.

#### **Videos:**

1. *Coma (Brain trauma Foundation)*
2. *Concussion (Brain Trauma Foundation)*
3. *Understanding Brain Injury (Sheppard Center)*

#### **Post Video Discussion Questions**

##### **Video: Coma (Brain Trauma Foundation)**

1. What information was given upon initial arrival by EMT's? What questions were asked by healthcare team and why?
2. What differences are there with the Glasgow Coma Scale (GCS) when assessing an infant/young child vs older child/adult?
3. What is meant by primary vs secondary injury? Identify examples of each.
4. How were the family members dealt with in the video? How was support given to them during this difficult time?

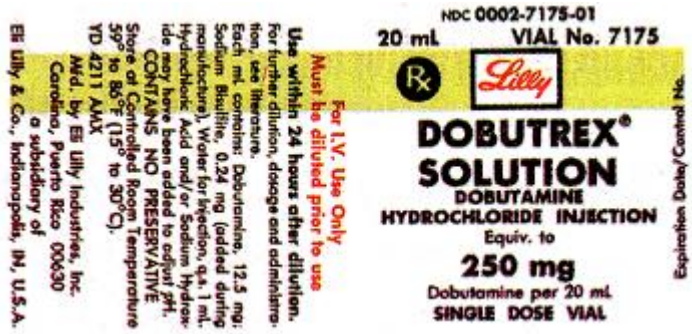
5. What is the procedure that Dr. Ghajar urges physicians to do and what is the purpose?
6. What happens when the brain swells from edema?
7. What are some late signs of ↑ICP?
8. Why are there rolled towels on either side of Alex's head?
9. What can increase ICP?
10. What were the interventions done immediately in the ER for Alex and why?
11. What are the stages of coming out of a coma? What are the indicators for moving from one stage to another?
12. How would you go about talking with the family about the TBI patient's progression to recovery?
13. Is TBI the only cause for increased ICP? Give examples.
14. What are the long term effects/problems the TBI victim might encounter?
15. Why are TBI victim's at greater risk for subsequent head injury?

**Suggested Evolve Case Studies:**

1. **Physical Assessment:** Neurological Assessment
2. **Medical/Surgical:** Head Injury or Traumatic Brain Injury

**Preparation for Advanced Intravenous Dosage Calculation (Critical Medications):**

- 1. Ordered:** Dobutamine (Dobutrex) at 1 mcg/kg/min to be infused. Patient weight is 154 lbs. The Dobutrex has been placed in 250 ml's of D5W. What flow rate will you set? (to nearest whole number)



Convert 154 lbs to kg (70 kg)

:

$$1 \text{ mcg} \times 70 \text{ kg} \times 60 \text{ min} = 4200 \text{ mcg/hr, or } 4.2 \text{ mg/hr}$$

$$250 \text{ mg} \quad : \quad 500 \text{ mL} \quad :: \quad 4.2 \text{ mg} \quad : \quad x \text{ mL}$$

$$1 \quad : \quad 2 \quad :: \quad 4.2 \quad : \quad x$$

$$x = 2 \times 4.2$$

$$x = 8.4 \text{ rounded to } 8 \text{ mL per hr}$$

- 2. Ordered:** Dopamine IV at 4 mcg/kg/min  
**SDR:** 2 to 20 mcg/kg/min. Patient weight is 60 kg.
  - Is the order within Standard Dose Range(SDR)?
  - Total mg/min ordered
  - Total mg/hr ordered (to nearest tenth of a mg)
  - Total mL/hr ordered

LOT EXP  
**200 mg** **280832**  
**Dopamine** **NDC 0338-1005-02** **50**  
**(800 mcg/mL)**  
**Dopamine Hydrochloride** **100**  
**and 5% Dextrose Injection USP**

**250 mL** **150**  
 EACH 100 mL CONTAINS 80 mg DOPAMINE HYDROCHLORIDE USP 5 g DEXTROSE HYDROUS USP 5 mEq/L SODIUM BISULFITE ADDED AS A STABILIZER pH ADJUSTED WITH HYDROCHLORIC ACID pH 3.5 (2.5 TO 4.5) OSMOLARITY 261 mOsmol/L (CALC) STERILE NONPYROGENIC SINGLE DOSE CONTAINER DRUG ADDITIVES SHOULD NOT BE MADE TO THIS SOLUTION DO NOT ADMINISTER INTRAVENOUSLY AS DIRECTED BY A PHYSICIAN SEE DIRECTIONS CAUTIONS MUST NOT BE USED IN SERIES CONNECTIONS DO NOT ADMINISTER SIMULTANEOUSLY WITH BLOOD DO NOT USE UNLESS SOLUTION IS CLEAR AND IS NOT DARKER THAN SLIGHTLY YELLOW FEDERAL (USA) LAW PROHIBITS DISPENSING WITHOUT PRESCRIPTION **200**

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ANS:

- a. Order is within SDR
- b.  $4 \text{ mcg} \times 60 \text{ kg} = 240 \text{ mcg/min}$ , or  $0.24 \text{ mg/min}$
- c.  $0.24 \text{ mg/min} \times 60 \text{ min} = 14.4 \text{ mg/hr}$
- d.

$$200 \text{ mg} : 250 \text{ mL} :: 14.4 \text{ mg} : x \text{ mL/hr}$$

$$4 : 5 :: 14.4 : x$$

$$4x = 5 \times 14.4, \text{ or } 18 \text{ mL/hr}$$

**3. Ordered:** Aminophylline 10 mg/hr

**Available:** Aminophylline 250 mg in 1000 mL D5W infusing at 30 mL/hr on an infusion pump for an asthmatic patient

- a. Ordered mL/hr flow rate
- b. Is the current flow rate correct?

ANS:

- a. Pump should be set at 40 mL/hr.

$$250 \text{ mg} : 1000 \text{ mL} :: 10 \text{ mg} : x \text{ mL}$$

$$1 : 4 :: 10 : x$$

$$x = 4 \times 10 = 40$$

- b. Current flow rate incorrect. Assess patient. Contact MD for orders to adjust IV.

4. **Ordered:** Nitroprusside sodium at 0.4 mcg/kg/min for a patient with severe hypertension. Patient weight is 198 pounds.

**Available:** Nitroprusside sodium 50 mg in 250 mL D5W.

- a. Patient weight in kilograms
- b. Hourly drug ordered in milligrams (to nearest tenth of a mg)
- c. Flow rate to be set in infusion pump

ANS:

a.  $198 \div 2.2 = 90 \text{ kg}$

b.  $0.4 \times 90 \times 60 = 2160 \text{ mcg/hr}$ , or  $2.16 \text{ mg/hr}$ , rounded to  $2.2 \text{ mg/hr}$

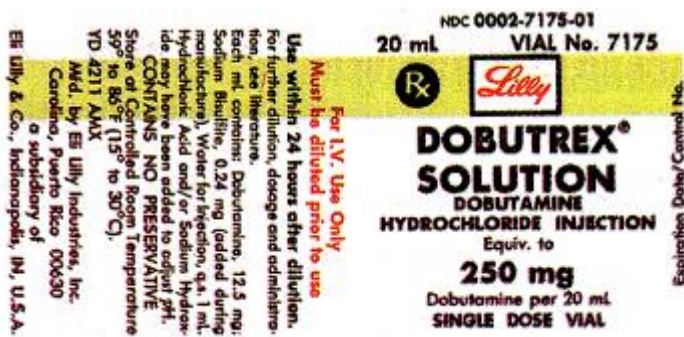
c.  $50 \text{ mg} : 250 \text{ mL} = \text{TD/TV ratio of } 1:5$

$1 : 5 :: 2.2 : x_x$

$x = 11 \text{ mL/hr}$

### Practice problems

1. **Ordered:** Dobutamine (Dobutrex) at 5 mcg/kg/min to be infused. Patient weight is 210 lbs. The Dobutrex has been placed in 250 ml's of D5W.  
What flow rate will you set? (to nearest whole number)



Answer: \_\_\_\_\_



## **College Lab #3**

### **TITLE: Alterations in Tissue Integrity (Burn Injury)**

#### **LAB OBJECTIVES:**

At the completion of this lab, the student will be able to:

1. Differentiate the depth and percentage of burns.
2. Compare presentations during each phase of burn injury.
3. Discuss appropriate interventions to prevent complications.
4. Identify the need for specialized long term care of burn victims.

#### **REQUIRED READING:**

##### **Videos:**

1. *Burn Center*
2. *Demystifying Medicine (Burns)*
3. *Skin Gun*
4. *After the Fire*

#### **Post Video Discussion Questions**

##### *Burn Center*

1. What is the initial care given in the ED?
2. How are the various depths of burns identified?
3. Why are circumferential burns so dangerous? What intervention is performed to restore circulation?
4. Why are burn centers necessary? What makes them different from trauma centers or regional medical centers?
5. Discuss the three phases of burn injury. What are common complications seen in each phase?

6. What is a flap graft? What other types of grafts are there? What is transcyte? What are its advantages/disadvantages?
7. Did you notice how the digits of the hands and feet were treated?
8. What are the psychological issues that occur as a result of burn injuries?
9. How is nutrition maintained in the burn victim?
10. Why were heat lamps being used?
11. What complications does the nurse need to be concerned about during recovery?
12. Why do burn victims need to wear pressure garments?

**Suggested Evolve Case Study:**

**1. Pediatric: Burns**

## **College Lab # 4**

**TITLE: Emergency/Disaster Preparedness, Bioterrorism Lab**

### **LAB OBJECTIVES:**

At the completion of this lab, the student will be able to:

1. Identify natural vs. manmade disasters.
2. Discuss the impact of disasters on hospital facilities and personnel.
3. Examine the nurse's roll in preparing for and responding to a disaster.
4. Explain the process of decontamination.
5. Differentiate between ESI triage and START triage.

### **REQUIRED READING:**

#### **Videos:**

1. *"Bioterrorism and Other Emergencies: Be Prepared, Be Safe"* (Medcom Trainex 2005)
2. *"Terrorism: Medical response" with Self-Test* (Detrick Lawrence Corp. 2002)
3. *"Patient Decontamination"* (2007)

#### **Post Video Discussion**

#### **Suggested Evolve Case Study:**

1. **Management:** The Emergent Care Clinic

**College Lab # 5**

**Completion of Evolve practice test for Pediatrics**

**Completion of Evolve Pediatric HESI**

## **Clinical Simulation Lab**

The clinical simulation laboratory provides students with the opportunity to provide high acuity complex care to patients in a safe environment in order to meet course student learning outcomes. The clinical lab consists of one twelve (12) hour session or two six (6) hour sessions per week and is held on the college campus. Students are given two (2) additional hours each week to work on their reflective journal. Your clinical instructor will inform you of the exact time for your lab. Weekly simulation information will be given by the clinical instructor. **All NRS 231 students will be required to pass a 10 question dosage calculation exam which will be given during simulation lab the first week of the course. The pass standard is 90 %.** Dosage calculation problems will include all types learned in previous nursing courses.

### **Pre-Conference: (prior to start of simulation)**

- A. Have a working knowledge of the concept of study for the week (e.g. intracranial regulation), including risk factors, pathophysiology, signs and symptoms, complications, nursing care, medical tests and treatments. (Utilize textbooks and PDA as a resource)
- B. Identify and explain the patient's priority problems based on the alteration and formulate appropriate nursing diagnoses.
- C. Incorporate assessment findings and developmental tasks appropriate to the patient's age and the implications for planned care.
- D. Formulate a plan of care for the patient based on established Standards of Care and utilizing evidence based practice and the nursing process.
- E. Identify assessment priorities, nursing actions, and required patient education.
- F. Discuss commonly prescribed medications utilized in the care of a patient with the specific alteration.

### **Clinical Simulation Experience:**

The clinical experience during this five week course will include simulation and observational experiences at topic-appropriate healthcare facilities. The situations involved will be complex and may include content learned in other courses ( Diabetes, COPD, etc.) Students will be required to participate in simulations as actors in roles such as patients and caregivers as well as other roles defined by the instructor. A debriefing period will follow each simulation. Students will critique their performance as well as their peers in regards to what was done correctly, areas for improvement, student feelings about the incident, what was learned and what might be done differently. Students will spend time doing reflective journaling each clinical day considering the objectives for the week's learning, their own feelings regarding the learning experience and what they need to improve on to become more proficient/confident in caring for this patient population. **The clinical journals will be graded each week and students will be provided with feedback. The average of all journal entries must be  $\geq 76\%$  in order to demonstrate competence. The student's performance in clinical simulation clinical will be assigned a pass/fail.**

**Post Conference:**

- A. Review and evaluate what happened during the simulation in relation to the simulation clinical objectives.
- B. Review and evaluate the care given and the patient's response to care plan within each simulation.
- C. Discuss revisions that should be made in your plan to improve care.
- D. Discuss application of clinical objectives to your patients.
- E. Discuss your personal feelings concerning the simulation experience.
- F. Discuss what you could improve on to become more competent in caring for this patient care population.

**Below are some suggestions for reflection to consider in the journal writing.**

1. Was there anything during the simulation experience that was confusing to you? Was there anything you could have done to better prepare yourself?
2. Was there any time during the simulation when you didn't know what to do? How did you feel? What would you do differently having had this experience?
3. Was there anything about the simulation experience that troubled or disturbed you? What will help make it easier for you to deal with this experience in the future?
4. Was there anything about the simulation experience that made the content clear to you?
5. Do you still have questions about the topic/content? How will you resolve these issues?
6. How did the simulation experience assist you in meeting the objectives?

**Journal Grading per Rubric**

- 8 points = 100%**
- 7.5 points = 93.75%**
- 7 points = 87.5%**
- 6.5 points = 81.25%**
- 6 points = 75%**
- 5.5 points = 68.75%**
- 5 points = 62.5%**

***Students are to wear their full MCCC clinical uniform to all simulations and off campus observation experiences per MCCC Nursing Program Uniform and Dress Code Policy as described in the MCCC Nursing Program Handbook.***

**Clinical Journaling Activity Guidelines  
and Grading Rubric**

The purpose of journaling is to give the student the opportunity to reflect back on the day's events and consider what was learned, what was successful or done well and what areas of content/skills are weak and could use more practice or study. Each student is required to spend a portion of their clinical day reflecting and writing his/her thoughts in the journal. **The journal pages will be emailed to the clinical instructor on the date and time determined by the clinical instructor.** Students will receive feedback from the instructor each week. This average of all journal entries must be  $\geq 76\%$  as evidence of clinical competence.

Level of Performance	Deficient Score of "0"	Emerging Score of "1"	Competent Score of "2"
Content	Clinical presentations/outcomes not assessed by student.	Journal entry assesses most of the clinical presentations/outcomes, but not all.	Journal entry describes the clinical objectives of assignment incorporating all the clinical presentation/outcomes.
Reflection of Clinical Experience	Reflection lacks evidence of understanding of nurse's role in the particular clinical setting. Lacks evidence of relationship between theory and clinical practice. Demonstrates little effort toward seeking opportunities for reflection. Examples do not demonstrate student learning or professional growth.	Reflection demonstrates limited understanding of the nurse's role in the particular clinical setting. Some connections established between theory and clinical practice. Slight professional growth demonstrated in theory base and clinical practice. Poor examples of student learning and professional growth.	Student reflection demonstrates understanding of the nurse's role in the clinical setting. Identification of relationship between theory and clinical practice established. Reflection of clinical experience shows evidence of enhancement of student theoretical base and clinical practice. Specific examples of learning and professional growth provided by student.
Critical Thinking	Evidence of critical thinking principles and nursing process lacking and not defended in log/journal. Student does not incorporate principles into planned client care. Student fails to evaluate the effectiveness of planned client care utilizing critical thinking/nursing processes. Client plan of care is not revised as needed. Student fails to identify the necessity of constructive feedback from others.	Some evidence of use of critical thinking principles and nursing process communicated and but poorly defended in journal. Student incorporates some principles into planned client care. Student partially evaluates the effectiveness of planned client care utilizing critical thinking/nursing processes. Student can identify the necessity of constructive feedback from others. Communicated feedback from peers is accepted but not incorporated into nursing practice.	Evidence of critical thinking principles and nursing process communicated and clearly defended in journal. Student incorporates principles into planned client care. Student evaluates the effectiveness of planned client care utilizing critical thinking/nursing processes. Following evaluation, client plan of care is revised as needed and alternative solutions are determined/implemented. Student can identify the necessity of constructive feedback from others. Communicated peer feedback is incorporated into nursing practice.
Format	Entry is not submitted by email within the expected time frame. Journal entry is unorganized in ideas, unreadable in format, or contains numerous spelling or grammar mistakes.	Entry is not submitted by email within the expected time frame. Journal entry reads poorly or lacks organization of ideas.	Entry is submitted by email within the expected time frame. Journal reads/flows well and provides organization of ideas and evidence of understanding.

**All NRS 231 students will participate in the following mandatory experiences.**

**1. St Barnabas Burn Unit Presentation.**

Session A: 2/3/2105 from 11a-3p in MS 214.

Session B: 3/10/2105 from 11a-3p in MS 214.

Students are given 4 hours of clinical release time for this presentation.

**2. RWJ Hamilton Emergency Department (ED):**

Date and time of this observational experience will be discussed at NRS 231 orientation and scheduled during the first week of course. Please refer to ED Observation Guidelines. Students are given 8 hours of clinical release time for this experience.

**NRS 231 Medication List**

**All NRS 231 students will be responsible for understanding the following drugs which will be used during the clinical simulation experiences. Students will need to provide the following drug information during the simulations:**

Is the dose correct for the age and weight of the patient?

What is the mechanism of action of the drug?

What are the administration guidelines for the drug?

What are the major side effects?

What are the monitoring concerns for the nurse after drug administration?

**Supportive Drugs**

- 1.) Antiulcer Agents: Prevacid (Lansoprazole), Protonix (Pantoprazole), Pepcid (Famotidine)
- 2.) Vasopressors: Dopamine, Norepinephrine (Levophed)
- 3.) Crystalloids (NS/Ringer's Lactate)

**Sensory Perception (SCI)**

- 1.) Glucocorticoids: Methylprednisolone (SoluMedrol)
- 2.) Anticholinergic: Atropine
- 3.) Skeletal Muscle Relaxants: Baclofen (Liorseal)

### **Intracranial Regulation (TBI)**

- 1.) Antiepileptic Drugs (AEDs): Phenytoin (Dilantin), Valproic Acid (Depakote)
- 2.) Diuretics: Mannitol (Osmotrol), Furosemide (Lasix)
- 3.) Glucocorticoids: Methylprednisolone (SoluMedrol),
- 4.) Opioids/Sedatives/Hypnotics: Morphine Sulfate, Fentanyl, Lorazepam (Ativan), Midazolam, (Versed), Propofol (Diprivan)
- 5.) Neuromuscular Blocking Agents: Succinylcholine
- 6.) Antidiuretic Hormone: Desmopressin (DDAVP)

### **Tissue Integrity (Burns)**

- 1.) Opioids/Sedatives: Morphine Sulfate, Hydromorphone (Dilaudid), Lorazepam (Ativan), Midazolam, (Versed), Propofol (Diprivan)
- 2.) Anti-infective Agents: Silver Sulfadiazine (Silvadene), Bacitracin

**MERCER COUNTY COMMUNITY COLLEGE  
DIVISION OF MATH, SCIENCE AND HEALTH PROFESSIONS  
NURSING PROGRAM  
NRS 231**

**EMERGENCY ROOM OBSERVATION GUIDELINES**

Students will report to the Robert Wood Johnson Hamilton Emergency Department on the day and time scheduled. Please report to the charge nurse in the ED for observation assignment. Under the supervision of the registered nurse, students can assist with care as directed by the nurse. During the 8 hour observation period, the student should rotate through the following three areas:

- 1. Main Adult Emergency Room**
- 2. Pediatric Emergency Room**
- 3. Adult ED Triage Area**

**The observation is 8 hours.** You will be allowed a 30 minute break for lunch/dinner. Please report off to the nurse to whom you have been assigned when leaving the unit for a break. All MCCC uniform dress code requirements (including stethoscope) are in effect for this observation. Please have your MCCC student ID on and visible during this observation. **No personal cell phones are to be used by students during the observation. Use of personal cell phones is allowed during lunch break only. RWJ Hamilton is a smoke free campus, no smoking is permitted during your time on the campus including outside areas and parking lots. Failure to comply with these hospital regulations will result in the student being placed on an action plan.**

**Student objectives:**

1. Describe the responsibilities of the triage nurse in assessing patients as they arrive.
2. How does the triage nurse prioritize assessment findings and determine the order in which patients receive care.
3. Understanding of the Emergency Severity Index (ESI) 5 level triage system.
4. Observe patient triage and preparation for diagnostic procedures.
5. Differentiate how therapeutic communication techniques vary for adult and pediatric patients.
6. Describe how family members are included during examination and treatment.
7. Observe RN administering medications; describe their effect on the patient as it relates to their medical diagnosis.
8. Describe the nursing care pre and post any emergency procedure.
9. Identify differences in how children are assessed and how treatment is implemented.

**Students will sign up for this experience during the first week of the course during lecture. It is on a first come basis. There are two time slots/day (8a-4:30p or 2p-10:30p). No more than 2 students can sign up each day – only one in each time slot. Online students can email me their preference on the first day of the course.**

**Week # 1 Simulation Lab: Alteration in Sensory Perception: Spinal Cord Injury (SCI)  
- Adult and Pediatric**

**Simulation Learning Objectives:**

Upon completion of week #1 simulation, the student will be able to:

1. prioritize the nursing care of patients with a SCI.
2. collaborate with the health care team when providing care for patients with SCI.
3. demonstrate the primary and secondary assessment on a patient with SCI.
4. assess the coping strategies and responses of patients and families with SCI.
5. describe the impact of SCI on patients and their families.
6. implement interventions to prevent complications for patients with SCI.
7. utilize precautions to prevent injury when moving a patient with SCI.
8. apply knowledge of pathophysiology when caring for patients with SCI.
9. explain the role of drug therapy in managing patients with SCI.
10. provide postoperative care and education for patients with SCI.

**NCLEX-RN Detailed Test Plan 2014 Categories:**

**Safe and Effective Care Environment:** (Objectives 1 and 2)

**Management of Care** – The nurse provides and directs nursing care that enhances the care delivery setting to protect the client and health care personnel.

**Safety and Infection Control** – The nurse protects clients and health care personnel from health and environmental hazards.

**Health Promotion and Maintenance:** (Objective 3)

The nurse provides and directs nursing care of the client that incorporates knowledge of expected growth and development principles; prevention and/or early detection of health problems; and strategies to achieve optimal health.

**Psychosocial Integrity:** (Objectives 4 and 5)

The nurse provides and directs nursing care that promotes and supports the emotional, mental and social wellbeing of the client experiencing stressful events, as well as clients with acute or chronic mental illness.

**Physiological Integrity:** (Objectives 6 thru 10)

**Basic Care and Comfort** – The nurse provides comfort and assistance in the performance of activities of daily living.

**Pharmacological and Parenteral Therapies** – The nurse provides care related to the administration of medications and parenteral therapies.

**Reduction of Risk Potential** – The nurse reduces the likelihood that clients will develop complications or health problems related to existing conditions, treatments or procedures.

**Physiological Adaptations** – The nurse manages and provides care for clients with acute, chronic or life threatening physical health conditions.

## **Week # 2 Simulation Lab: Alteration in Intracranial Regulation: Traumatic Brain Injury (TBI) - Adult and Pediatric**

### **Simulation Learning Objectives:**

Upon completion of week #2 simulation, the student will be able to:

1. collaborate with health care team members when planning care for patients with TBI.
2. prioritize care for patients with a TBI.
3. perform a comprehensive health assessment of patients with TBI.
4. provide support to the patient and family coping with a TBI.
5. demonstrate the primary and secondary assessment on a patient with TBI.
6. perform a focused neurologic assessment on a patient with a TBI.
7. assess patients for ↑ICP.
8. implement interventions to prevent ↑ICP.
9. provide postoperative care and education for the patient with ↑ICP.
10. monitor for postoperative complications for the patient with ↑ICP.

### **NCLEX-RN Detailed Test Plan 2014 Categories:**

**Safe and Effective Care Environment:** (Objectives 1 and 2)

**Management of Care** – The nurse provides and directs nursing care that enhances the care delivery setting to protect the client and health care personnel.

**Safety and Infection Control** – The nurse protects clients and health care personnel from health and environmental hazards.

**Health Promotion and Maintenance:** (Objective 3)

The nurse provides and directs nursing care of the client that incorporates knowledge of expected growth and development principles; prevention and/or early detection of health problems; and strategies to achieve optimal health.

**Psychosocial Integrity:** (Objective 4)

The nurse provides and directs nursing care that promotes and supports the emotional, mental and social wellbeing of the client experiencing stressful events, as well as clients with acute or chronic mental illness.

**Psychosocial Integrity:** (Objectives 5 thru 10)

**Basic Care and Comfort** – The nurse provides comfort and assistance in the performance of activities of daily living.

**Pharmacological and Parenteral Therapies** – The nurse provides care related to the administration of medications and parenteral therapies.

**Reduction of Risk Potential** – The nurse reduces the likelihood that clients will develop complications or health problems related to existing conditions, treatments or procedures.

**Physiological Adaptations** – The nurse manages and provides care for clients with acute, chronic or life threatening physical health conditions.

## **Week # 3 Simulation Lab: Alteration in Tissue Integrity: Burn Injury - Adult and Pediatric**

### **Simulation Learning Objectives:**

Upon completion of week #3 simulation, the student will be able to:

1. apply the principles of asepsis to protect burn patients with open wounds.
2. manage the patient's environment to prevent infection with burn injuries.
3. educate others about fire prevention strategies.
4. assess the patient's and family's use of coping strategies related to burn injury.
5. provide support for the patient and family in coping with lifestyle changes.
6. identify burn patients at risk for inhalation injury.
7. prioritize nursing care during each stage of a burn injury.
8. perform a primary and secondary assessment on a patient with a burn injury.
9. interpret lab data and clinical presentation to assess effectiveness of fluid resuscitation.
10. examine the nutritional needs for a patient with a burn injury.

### **NCLEX-RN Detailed Test Plan 2014 Categories:**

**Safe and Effective Care Environment:** (Objectives 1 and 2)

**Management of Care** – The nurse provides and directs nursing care that enhances the care delivery setting to protect the client and health care personnel.

**Safety and Infection Control** – The nurse protects clients and health care personnel from health and environmental hazards.

**Health Promotion and Maintenance:** (Objective 3)

The nurse provides and directs nursing care of the client that incorporates knowledge of expected growth and development principles; prevention and/or early detection of health problems; and strategies to achieve optimal health.

**Psychosocial Integrity:** (Objectives 4 and 5)

The nurse provides and directs nursing care that promotes and supports the emotional, mental and social wellbeing of the client experiencing stressful events, as well as clients with acute or chronic mental illness.

**Physiological Integrity:** (Objectives 6 thru 10)

**Basic Care and Comfort** – The nurse provides comfort and assistance in the performance of activities of daily living.

**Pharmacological and Parenteral Therapies** – The nurse provides care related to the administration of medications and parenteral therapies.

**Reduction of Risk Potential** – The nurse reduces the likelihood that clients will develop complications or health problems related to existing conditions, treatments or procedures.

**Physiological Adaptations** – The nurse manages and provides care for clients with acute, chronic or life threatening physical health conditions.

## **Week # 4 SimulationLab: Emergency/Disaster Preparedness**

### **Simulation Learning Objectives:**

At the completion of this simulation, the student will:

1. explain the assignment of acuity based on ESI triage.
2. differentiate between ESI and START triage systems.
3. demonstrate a primary and secondary assessment on patients with traumatic injuries.
4. identify life threatening injuries and appropriate interventions.
5. analyze lab data and clinical manifestations to assess effectiveness of treatment.
6. collaborate with members of the health care team during a mass casualty event.
7. explain possible roles for the nurse in the Incident Command System (ICS).
8. provide support for victims and their families during a disaster.

### **NCLEX-RN Detailed Test Plan 2014 Categories:**

**Safe and Effective Care Environment:** (Objectives 1 and 2)

**Management of Care** – The nurse provides and directs nursing care that enhances the care delivery setting to protect the client and health care personnel.

**Safety and Infection Control** – The nurse protects clients and health care personnel from health and environmental hazards.

**Health Promotion and Maintenance:** (Objective 3 thru 5)

The nurse provides and directs nursing care of the client that incorporates knowledge of expected growth and development principles; prevention and/or early detection of health problems; and strategies to achieve optimal health.

**Psychosocial Integrity:** (Objectives 6 thru 8)

The nurse provides and directs nursing care that promotes and supports the emotional, mental and social wellbeing of the client experiencing stressful events, as well as clients with acute or chronic mental illness.

**Physiological Integrity:** (Objectives 6 thru 8)

**Basic Care and Comfort** – The nurse provides comfort and assistance in the performance of activities of daily living.

**Pharmacological and Parenteral Therapies** – The nurse provides care related to the administration of medications and parenteral therapies.

**Reduction of Risk Potential** – The nurse reduces the likelihood that clients will develop complications or health problems related to existing conditions, treatments or procedures.

**Physiological Adaptations** – The nurse manages and provides care for clients with acute, chronic or life threatening physical health conditions.

### **NRS 231 Information Technology Literacy Activity: Disasters**

Below is a list of disasters that are most likely to occur in Mercer County, New Jersey, or, should they occur, have the highest impact to the health care delivery system. Students will select one topic to present with no duplication in their clinical group (sign up during simulation clinical in week 3).

- Active shooter
- Biological terrorism
- Earthquake
- Epidemic
- Fire
- Hazmat exposure
- Hostage situation
- Hurricane
- Mass casualty incident
- Snow storm
- Structural damage
- Tornado

Provide at least one example of this type of disaster occurring and affecting a healthcare facility. Include, date, location, number of people affected, infrastructure damage, lives lost, and lessons learned. Include references for your research (tell the class where you obtained your information). The FEMA ([ready.gov](http://ready.gov)) website and the New Jersey Office of Emergency Management website are excellent sources and encouraged for your research. Upon completion of the research, you should be prepared to present your findings to the rest of the clinical group. Each oral presentation should be no more than 15 minutes in length. You do not need to submit a copy of your presentation, but you must submit to the instructor a list of the resources you utilized to gather your information. You may choose whatever format you wish to present your topic (verbal, power point, posterboard, etc.) The grade received on this project will be the journal grade for week 4. The presentations will be done during week 4 simulation clinical lab.

Students will be given 4 hours of clinical release time to perform the research needed to complete this project. The following rubric will be used by the clinical instructor to grade the presentation.

Disaster Project - Grading Form

Student Name \_\_\_\_\_

Graded Item	Possible Points	Earned Points
1. What is the nurse's role in this disaster? Describe this role based on the nurse working either in a hospital, nursing home, or rehabilitation center.	15	
2. How can the nurse protect the safety of himself/herself during this disaster?	15	
3. How can the nurse protect the safety of the patients during this disaster?	15	
4. What is the role of the healthcare facility in protecting the safety of the patients and staff?	15	
5. Can a nurse be prepared for this disaster? If so, how?	15	
6. Provide at least one example of this type of disaster occurring and affecting a healthcare facility in the t past. Include, date, location, number of people affected, infrastructure damage, lives lost, and lessons learned.	15	
7. Include references for your research (tell the class where you obtained your information). The FEMA (ready.gov) website and the New Jersey Office of Emergency Management website are excellent sources and encouraged for your research.	10	
<b>TOTAL</b>	100	

**Week #5 Simulation Lab: No new content**

All students will take the Pediatric HESI exam and course Final Exam, there are no simulation activities in week 5.