

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

*NRS 231  
College Lab/Simulation  
Manual*

*Spring 2013*

**Mercer County Community College**  
**Division of Math, Science and Health Professions**  
**Nursing Program**  
**NRS 231 College Lab Manual Fall 2012**

**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 Lab

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.

Pickar, G.D., Abernethy, A.P. (2008) *Dosage Calculations*. (8<sup>th</sup> ed.) Clifton Park: Thompson Delmar Learning

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 & Adams texts text – [www.mynursingkit.com](http://www.mynursingkit.com)

NCSBN NCLEX-RN Detailed Test Plan – [https://www.ncsbn.org/2010 NCLEX RN Detailed Test Plan Candidate.pdf](https://www.ncsbn.org/2010%20NCLEX%20RN%20Detailed%20Test%20Plan%20Candidate.pdf)

## **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 demonstrate correct techniques for:

1. Discuss the impact of SCI health problems on patients and families.
2. Discuss the coping strategies of patients with spinal cord injuries.
3. Identify environmental modifications utilized by patients with spinal cord injuries.
4. Demonstrate proficiency in dosage calculation by achievement of a passing score of 90% or higher.

### **REQUIRED READINGS:**

**Review Brown or Pickar Dosage Calculation texts for medication math review.**

**Pearson text: Pgs. 1143-1156**

**Adams: Chapter 21**

**Pearson Nursing Skills text:** Skill 11.17 Assessing the Neurologic System  
Skill 11.40 Glasgow Coma Scale  
Skill 6.8 Logrolling a Client  
Skill 6.24 Caring for Clients in Traction (Skeletal Traction,  
Skull Tongs)

### **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 biggest factor 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?

**Required Evolve Case Studies:**

**Medical/Surgical:** Spinal Cord Injury

**Preparation for Dosage Calculation/Medication Math Exam:**

Students are required to take a dosage calculation exam on the first college 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 (Brown or Pickar)

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

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

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

■  $X \text{ mL} = 5920 / 1000 = \underline{5.9 \text{ mL bolus}}$

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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 - A patient is receiving 20,000 units of heparin in 1,000 mL of D5W by continuous infusion at 30mL/hr. What heparin dose is he receiving?  
Use Heparin Bottle 25,000U/mL - mixed by Pharmacy

$$20,000 \text{ u} : 1,000 :: XU : 30\text{mL}$$

$$1,000\text{mL} \times XU = 20,000\text{U} \times 30\text{mL}$$

$$1,000 \times XU = 600,000$$

$$XU = 600,000 / 1,000 = 600\text{U/hr}$$

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## NRS 231 College Lab Dosage Calculation Practice Worksheet

### Heparin

#### SHORT ANSWER

*Directions:* Insert the correct response.

1. **Ordered:** 8500 units heparin subcutaneous q8h  
**Available:** 10,000 units/mL in a multidose vial  
How many milliliters will you give?

2. **Ordered:** Heparin 800 units/hr IV

**Available:** 1000 mL with 5000 units of heparin

- a. How many hours will it take to infuse?
- b. How many mL/hr will infuse?

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
- Which vial will you choose?
  - How many milliliters will you give?

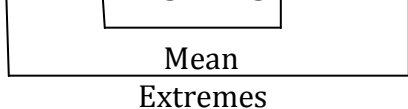
## Dosage Calculation General Information

### 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**

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

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

$$30x = 3000$$

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

## **LAB # 2**

### **TITLE: Advanced Medication Calculation (Critical Care Medications), Alteration in Intracranial Regulation**

#### **LAB OBJECTIVES:**

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

1. Discuss the need for support of families of patients with traumatic brain injury.
2. Discuss care priorities based on standards of care for patients with traumatic brain injury.
3. Discuss interventions to prevent increasing intracranial pressure (ICP).
4. Identify risk factors associated with traumatic brain injuries.
5. Demonstrate proficiency in advanced intravenous calculation of critical medications (mcg/kg/min)

#### **REQUIRED READING:**

**Pearson text: Chapter 17**

**Adams: Chapter 15**

**Pickar 8<sup>th</sup> ed.: Pgs 433-441**

**Review Brown or Pickar Dosage Calculation texts for medication math review.**

**Pearson Nursing Skills text:** Skill 11.17 Assessing the Neurologic System  
Skill 11.40 Glasgow Coma Scale  
Skill 11.42 Intracranial Pressure Monitoring  
Skill 13.8 Implementing Seizure Precautions  
Skill 7.14 Inserting a Nasopharyngeal Airway  
Skill 7.15 Assisting with Endotracheal Intubation

#### **Videos:**

1. *Coma (Brain trauma Foundation)*
2. *Concussion (Brain Trauma Foundation)*

## **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 for this?
6. What happens when too much fluid is drained off the brain?
7. What are the ominous signs of increased intracranial pressure (ICP)?
8. Why are there rolled towels on either side of Alex's head?
9. What sorts of things can increase ICP?
10. What were the interventions that needed to be 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?

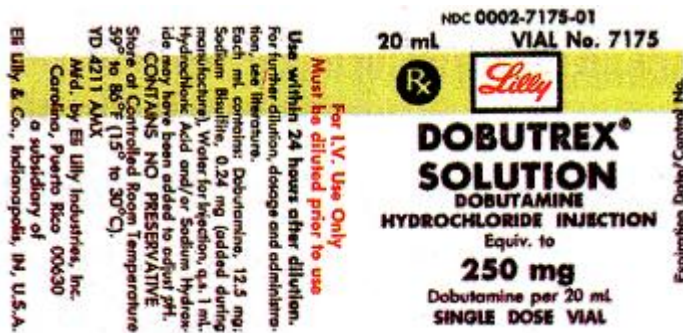
15. Why are TBI victim's at greater risk for subsequent head injury?

**Required Evolve Case Studies:**

1. **Physical Assessment:** Neurological Assessment
2. **Medical/Surgical:** Head 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.
  - a. Is the order within Standard Dose Range(SDR)?

- b. Total mg/min ordered
- c. Total mg/hr ordered (to nearest tenth of a mg)
- d. Total mL/hr ordered

LOT                      EXP

**200 mg**                      280832  
NDC 0338-1005-02

**Dopamine**                      50  
(800 mcg/mL)

**Dopamine Hydrochloride**  
**and 5% Dextrose Injection USP**    100

**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 DOSAGE 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

**Baxter**                      200

BAXTER HEALTHCARE CORPORATION Viaflex® Plus CONTAINER  
DEERFIELD IL 60015 USA                      PL 2207 PLASTIC  
MADE IN USA                      FOR PRODUCT INFORMATION  
CALL 1-800-933-0303

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. 40 mL/hr ordered

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

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

$x = 4 \times 10 = 40$  (can be seen at a glance with the correct reduced ratio of total drug/total volume)

b. Current flow rate incorrect. Assess patient. Contact physician 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.  $0.4 \div 90 \div 60 = 2160 \text{ mcg/hr}$ , or 2.16 mg/hr, rounded to 2.2 mg/hr

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

$$1 : 5 :: 2.2 : x$$

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

### **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)

NDC 0002-7175-01  
20 mL VIAL No. 7175



**DOBUTREX<sup>®</sup>**  
**SOLUTION**  
DOBUTAMINE  
HYDROCHLORIDE INJECTION

Equiv. to  
**250 mg**  
Dobutamine per 20 mL  
**SINGLE DOSE VIAL**

Expiration Date/Control No.

For I.V. Use Only  
Must be diluted prior to use

Use within 24 hours after dilution. For further dilution, dosage and administration, see literature. Each mL contains: Dobutamine, 12.5 mg; Sodium Bisulfite, 0.24 mg (added during manufacture). Water for injection, q.s., 1 mL. Hydrochloric Acid and/or Sodium Hydroxide may have been added to adjust pH.

CONTAINS NO PRESERVATIVE

Store at Controlled Room Temperature 59° to 86°F (15° to 30°C).  
Mfd. by Eli Lilly Industries, Inc.  
Carolina, Puerto Rico 00630  
YD 4211 AAX

Eli Lilly & Co., Indianapolis, IN, U.S.A.  
a subsidiary of

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

2. **Ordered:** Dopamine IV at 10 mcg/kg/min  
SDR: 2 to 20 mcg/kg/min. Patient weight is 85 kg.
- a. Is the order within SDR?
  - b. Total mg/min ordered
  - c. Total mg/hr ordered (to nearest tenth of a mg)
  - d. Total mL/hr ordered

LOT		EXP		
				280832 NDC 0338-1005-02
				<b>200 mg</b>
				<b>Dopamine</b>
				<b>(800 mcg/mL)</b>
				<b>Dopamine Hydrochloride</b>
				<b>and 5% Dextrose Injection USP</b>
				<b>50</b>
				<b>100</b>
				<b>150</b>
				<b>200</b>

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 DOSAGE 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

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

## **LAB #3**

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

#### **LAB OBJECTIVES:**

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

1. Discuss the need for support of families of patients with burn injuries.
2. Discuss care priorities based on standards of care for patients with burn injuries.
3. Discuss interventions to prevent complications with burn injuries.
4. Identify risk factors associated with burn injuries.

#### **REQUIRED READING:**

**Pearson text: Chapter 30 pgs. 1873-1911**

**Adams: Chapter 18**

#### **Videos:**

1. *Burn Center*
2. *After the Fire*

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

*Burn Center*

1. What is the initial care given in the ED?
2. How do the various depths of burns identified?
3. Why are circumferential burns so dangerous? What intervention is performed to treat these sorts of burns? Where anatomically are escharotomies performed?
4. Why are burn centers necessary? What makes them different from trauma centers or regional medical centers?

5. How do the various types of burns differ?
6. What is a flap graft?
7. What other types of grafts are there? How do they differ? When would they be used?
8. What is transcyte? What are its advantages/disadvantages?
9. Did you notice how the digits of the hands and feet were treated? (separation of digits, individually wrapped)
10. What are the psychological issues that occur as a result of burn injuries?
  - a. Guilt
  - b. Self esteem
  - c. Constant staring –being different from others
11. How do you deal with young children who can't understand, like the little girl with the electrical burn of the hand?
12. How is nutrition maintained in the burn victim?
13. Why were heat lamps being used?
14. What complications does the nurse need to be concerned about during recovery?
15. Why do burn victims need to wear pressure garments?
16. How are psychological issues dealt with for the burn victim? (support groups)

**Required evolve case study:**

**1. Pediatric: Burns**

## **LAB # 4**

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

### **LAB OBJECTIVES:**

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

1. Define both natural and manmade disasters.
2. Understand the impact that disasters have on hospital facilities and personnel
3. Describe the need for organizing personnel during a disaster
4. Explain the importance of decontamination
5. Identify the types of agents that could be used by terrorists
6. Demonstrate donning of personal protective equipment

### **REQUIRED READING:**

**Pearson text: pgs. 2351-2360**

**Adams: Chapter 12**

### **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**

**Demonstration of Personal Protective Equipment with Return Demonstration**

## **Donning Procedures for Personal Protective Equipment**

*Notes: Assistance should be provided because donning is difficult to perform alone. Procedures will vary depending on equipment used. Below is one procedure that may be followed. Notice the variations with the procedures on the previous page.*

### **Step 1 – Suit**

While sitting, step into legs of outer suit.

### **Step 2 – Boots**

The chemical protective boots are donned. The suit is pulled over the boots unless the suit has built-in booties.

### **Step 3 – Respirator**

If a Powered APR (PAPR) is used, the battery is attached and turned on. The respirator belt or vest is then donned. On/off switch must be easily accessible.

### **Step 4 – Zip the suit**

The suit is zipped to the neck and sealed with an adhesive strip over the zipper. The inner shroud is completely inside the suit. If used, the hood is donned.

### **Step 5 – Gloves**

The inner gloves are donned, then the outer gloves. The suit is pulled over the gloves. Gloves are then sealed with tape or bands.

### **Step 6 – Safety check**

Once the equipment has been donned, its fit should be evaluated and a safety check conducted before personnel enter the Decon Zone.

**S-23**

## **Doffing Procedures for Personal Protective Equipment**

*Note: Assistance should be provided because doffing is difficult to perform alone. Procedures may vary depending on equipment used. This is one procedure that may be followed*

### **Step 1 – Decon team decontamination**

Before doffing, each decon team member must undergo decontamination. to remove any harmful materials that have adhered to protective clothing and equipment.

**Step 1 – Remove boots**

Assistant removes all tape from boots and gloves. Boots are removed, then outer gloves. All removed items should be placed in a bag for further decon or disposal.

**Step 3 – Remove suit**

Assistant helps push suit down from the inside to the level of the boots. Suited First Receiver steps out of the suit, away from the shower area towards the clean zone.

**Step 4 – Remove Respiratory protection**

Respiratory protection is removed, being careful to prevent the outside of the hood from contaminating the face or arms.

**Step 5 – Remove Gloves**

Inner gloves are removed.

**Step 6 – Post entry assessment**

Following doffing, a post entry medical monitoring should be carried out while personnel are resting. Medical monitoring should include vital signs by a clean transport team. Rehabilitation may be necessary before team members return to their hospital duties. Rehydration is an important part of

Pye, S. (2007). *Hospital first receiver instructor guide*. Edgartown, MA: Emergency Film Group.

**Required evolve case study:**

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

**Lab # 5**

**Completion of evolve practice test for Pediatrics**

## **General Simulation Guidelines**

**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 seven hours twice per week and is held on the college campus or alternate facility. There may be observational experiences off campus at specialized hospitals that the student will be required to attend. 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 lab the first week of the course. The pass standard is 100 %. Dosage calculation problems will include all types learned in previous nursing courses.** During the clinical simulation lab, students are expected to:

### **Pre-Conference: First Hour: (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 main 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: Five Hours: (in simulation lab)**

The clinical experience during this five week course will include simulation sessions and may include 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 journal will be graded and equates to 10% of the final grade for NRS 231.

**Post Conference: One Hour of Journaling (after simulation):**

- 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.

**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.**

**Please refer to the clinical journal rubric for journal grading information**

**All NRS 231 students will participate in the following observational experiences during the course.**

1. **St Barnabas Burn Unit located at St Barnabas Medical Center, Livingston New Jersey:**

**A Session: February 6<sup>th</sup> 1pm-5pm**

**B Session: March 14<sup>th</sup> 1pm-5pm**

**Specific information concerning the burn unit experience will be distributed in class.**

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

**Date and time to be determined at NRS 231 course orientation.**

**Please refer to ED Observation Guidelines.**

**Clinical Journaling Activity Guidelines:** 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 for review and evaluation by the end (11:59pm) of the day following clinical.** Students will receive feedback from the instructor each week. This journaling activity represents 10% of your

course grade and is evidence of having met the day's/week's clinical simulation objectives. It is important that you take it seriously spending the appropriate amount of time in this activity and truly reflect on the learning that has occurred. **Please refer to the Clinical Journal Grading Rubric for journal grading information.**

**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 for review and evaluation by the end (11:59 pm) of the day following clinical.** Students will receive feedback from the instructor each week. This journaling activity represents 10% of your course grade and is evidence of having met the day's/week's clinical simulation objectives. It is important that you take it seriously spending the appropriate amount of time in this activity and truly reflect on the learning that has occurred.

<b>Level of Performance</b>	<b>Deficient Score of "0"</b>	<b>Emerging Score of "1"</b>	<b>Competent Score of "2"</b>
Content	Clinical outcomes not assessed by student or no reflection of experience provided.	Journal entry assesses most of the clinical outcomes, but not all. Superficial reflection present, but student needs more depth in thought process.	Log/journal entry assesses the clinical objectives of assignment. Reflection of clinical experience demonstrates insight and personal assessment.
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. Reflection demonstrates lack of or poor enhancement of student's theoretical base 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 particular 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. Student reacts inappropriately to feedback. Communicated peer feedback is not accepted or incorporated into nursing practice.	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. Following evaluation, client plan of care is not revised as needed and alternative solutions are determined but not implemented. 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 and unreadable in format.	Entry is not submitted by email within the expected time frame. Journal entry is unreadable or lacks organization of ideas.	Entry is submitted by email within the expected time frame. Journal is readable and provides organization of ideas.

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**Below are some suggestions on topics to be considered (but not limited to) in the journal writing.**

Was there anything during the simulation experience that was confusing to you? What was it? How did you handle that situation? Was there anything you could have done to better prepare yourself?

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?

Was there anything about the simulation experience that troubled or disturbed you? What was it? What will help make it easier for you to deal with this experience in the future?

Was there anything about the simulation experience that made "the light bulb come on" - something that made the content clearer to you? What was it and explain what happened to illuminate your understanding?

Do you still have questions about the topic/content? What are they? How will you resolve these questions?

How did the simulation experience assist you in meeting the course/topic/program objectives?

**Journal Grading per Rubric**

**8 points = 100%**

**7 points = 87.5**

**6 points = 75%**

**5 points = 62.5**

**4 points = 50%**

**The clinical journal will equate to 10% of the course grade.**

## **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?

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

- 1.) Antiseizure Medications: Phenytoin (Dilantin), Levetiracetam (Keppra), Valproic Acid (Depacon)
- 2.) Osmotic Diuretics: Mannitol
- 3.) Glucocorticoids: Methylprednisolone (SoluMedrol), Dexamethasone (Decadron)
- 4.) Barbiturates: Pentobarbital (Nembutal)
- 5.) Opioids/Sedatives: Morphine Sulfate, Fentanyl, Lorazepam (Ativan), Midazolam, (Versed), Propofol (Diprivan)
- 6.) Neuromuscular Blocking Agents: Vecuronium bromide (Norcuron), Cisatracurium (Nimbex)
- 7.) Antidiuretic Hormone: Desmopressin (DDAVP)

### **Supportive Drugs**

Antiulcer Agents: Prevacid (lansoprazole), Protonix (pantoprazole), Pepcid (famotidine)

Vasopressors: Dopamine, Norepinephrine

Crystalloids

### **Sensory Perception (SCI)**

Glucocorticoids: Methylprednisolone (SoluMedrol)

Anticholinergic: Atropine

Skeletal Muscle Relaxants: baclofen (Liorseal)

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

Crystalloids (IV Fluids)

Opioids/Sedatives: Morphine Sulfate, Hydromorphone (Dilaudid), Fentanyl, Lorazepam (Ativan), Midazolam, (Versed), Propofol (Diprivan)

Antiinfective Agents: Silver Sulfadiazine (Silvadene), Collagenase (Santyl), Bacitracin

Tetanus Toxoid

**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 at your assigned time on the day scheduled. A RWJ Hamilton student ID badge will be available for your use during the observation. The badge will be kept in an envelope outside of the ED nurse educator's office in the main Emergency Room. **This badge MUST be returned to the envelope at the end of the observation.** After you have the badge, 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. You will be allowed one 30 minute break for lunch. All MCCC uniform dress code requirements are in effect for 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. Failure to comply with this requirement will result in a clinical action plan.**

**Student objectives:**

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

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

**Simulation Learning Objectives:**

1. The student will be able to collaborate with health care team members when planning and providing care for critically ill patients with neurologic problems.
2. The student will be able to prioritize care for patients with a traumatic brain injury (TBI).
3. The student will be able to perform a comprehensive health assessment of the patient with traumatic brain injury.
4. The student will be able to provide support to the patient and family coping with life changes that often result from a TBI.
5. The student will be able to perform a focused neurologic assessment of patients who are critically ill.
6. The student will be able to assess patients for adverse responses to TBI, such as increased intracranial pressure (ICP).
7. The student will be able to implement interventions to prevent increasing ICP.
8. The student will be able to provide care for the patient experiencing increasing ICP.
9. The student will be able to provide postoperative care for the patient having a craniotomy.
10. The student will be able to prevent and monitor for postoperative complications of a craniotomy.

**NCLEX-RN Detailed Test Plan 2010 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.

**Physiological 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.

**Adult TBI Simulation Scenario:** Joyce, 27 year old involved in a motor vehicle accident as an unrestrained passenger in a car that swerved off the road and struck a tree. She was ejected from the car and was found unconscious by EMS personnel. She is brought to the ER via helicopter on a backboard with a cervical collar. Joyce arrives somewhat combative, unresponsive to commands. Pupils reactive L>R. Vital Signs RR 40 and labored. BP 110/70, P100, T98F, Glasgow Coma Scale 9.

**Pediatric TBI Simulation Scenario:** A 24-month-old toddler is brought in by EMT's stating the child was struck by a vehicle that was backing out from a driveway and fell back hitting his head on the cement. There was a witnessed brief loss of consciousness. EMT's arrived at the scene within 15 minutes of the accident. There was a large amount of blood at the scene. A scalp laceration was identified by EMT's and dressed prior to coming to the ED. The child arrives at the ED strapped to a back board with a cervical collar intact. The child is crying and calling out for his mom. VS from EMT report: BP 130/50, P 126, R 26. Upon undressing the child, there are abrasions on the arms, chest and lower extremities. There is also a large bruise on the left upper quadrant of his abdomen.

## **Glasgow Coma Scale**

The GCS is scored between 3 and 15, 3 being the worst, and 15 the best. It is composed of three parameters : Best Eye Response, Best Verbal Response, Best Motor Response, as given below :

### **Best Eye Response. ( 4)**

1. No eye opening.
2. Eye opening to pain.
3. Eye opening to verbal command.

4. Eyes open spontaneously.

**Best Verbal Response. (5)**

1. No verbal response
2. Incomprehensible sounds.
3. Inappropriate words.
4. Confused
5. Orientated

**Best Motor Response. (6)**

1. No motor response.
2. Extension to pain.
3. Flexion to pain.
4. Withdrawal from pain.
5. Localizes pain.
6. Obeys Commands.

Note that the phrase 'GCS of 11' is essentially meaningless, and it is important to break the figure down into its components, such as E3V3M5 = GCS 11.

A Coma Score of 13 or higher correlates with a mild brain injury, 9 to 12 is a moderate injury and 8 or less a severe brain injury.

Teasdale G., Jennett B., LANCET (ii) 81-83, 1974.

**Debriefing/Guided Reflection Questions for Simulation**

1. **What were the primary concerns in this scenario?**
2. **Did you miss anything in getting report on this patient?**
3. **Did you have sufficient knowledge/skills to manage this situation?**
4. **What were your primary nursing diagnoses in this scenario? What nursing interventions did you use, what outcomes did you measure? Where is your**

**patient in terms of these outcomes now?**

- 5. What did you do well in this scenario?**
- 6. If you were able to do this again, what would you do differently?**
- 7. What guided your decision-making process? What did you see? Hear? Smell?**
- 8. Were you reminded of a previous experience? Did this influence your thinking?**
- 9. What were your specific goals? Priorities?**
- 10. What other courses of action did you consider?**
- 11. Did you follow a known rule, policy, procedure, and algorithm?**
- 12. If your decision was not the best, what training, knowledge, or information could have helped?**
- 13. How much was time pressure a factor in your decisions/actions?**
- 14. How would you summarize this experience?**

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

### **Simulation Learning Objectives:**

1. The student will be able to prioritize the nursing care of the adult or pediatric patients with a spinal cord injury (SCI).
2. The student will be able to collaborate with the health care team when providing care for adult or pediatric patients with SCI.
3. The student will be able to perform a comprehensive health assessment of the adult or pediatric patients with a spinal cord injury.
4. The student will be able to assess the coping strategies and response of adult or pediatric patients with spinal cord problems and their families.
5. The student will be able to describe the impact of spinal cord health problems on adult or pediatric patients and their families.
6. The student will be able to implement interventions to prevent complications of immobility when caring for adult or pediatric patients with spinal cord health problems.
7. The student will be able to use precautions to prevent injury when moving a patient with a spinal cord problem.
8. The student will be able to apply knowledge of pathophysiology when caring for a patient having autonomic dysreflexia.
9. The student will be able to explain the role of drug therapy in managing patients with spinal cord problems.
10. The student will be able to provide postoperative care for patients having spinal cord surgery, including monitoring for complications.

### **NCLEX-RN Detailed Test Plan 2010 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.

**Adult SCI Simulation Scenario**: Mark, 27 year old male, driving on a rural road at about 3:15AM, crosses the center line in his truck, sees an oncoming car, swerves to avoid the vehicle, and rolls his truck 4 times. He is not wearing a seatbelt and is ejected from the truck. The driver of the oncoming car sees the accident and calls 911 for help. It takes EMS 20 minutes after the accident to arrive at the scene. Mark is highly intoxicated, moaning but awake. His arms are flailing and he can answer questions. He is strapped to a backboard and transported to the hospital ER. Report from the EMT to ER RN: VSS, BP 150/86, P 110, R 22, GCS 15. ER RN completes assessment noting no movement/sensation in the lower extremities. There is also a compound fracture of the R tib/fib. MD informed, further workup diagnoses Mark with spinal cord injury at T6.

**Pediatric SCI Simulation Scenario**: 7 year old Justin was riding his bicycle out into the street and was hit by a passing car. Justin was thrown 10 feet into the air and landed on the concrete curb. EMS was called by the driver of the car and arrived on the scene within 15 minutes of the call. Paramedics found Justin unconscious at the scene and his hips/lower extremities twisted toward the posterior of his body. His cervical spine was stabilized with a cervical collar and Justin was placed on a back board and brought to the hospital. Report from the paramedics gave VS as BP 120/70, P 100, R 20. Upon admission to the ER, the RN finds Justin awake and able to answer questions appropriately. He is not unable to move his legs nor does he have any feeling in his lower extremities.

**Debriefing/Guided Reflection Questions for Simulation**

15. What were the primary concerns in this scenario?
16. Did you miss anything in getting report on this patient?

- 17. Did you have sufficient knowledge/skills to manage this situation?**
- 18. What were your primary nursing diagnoses in this scenario? What nursing interventions did you use, what outcomes did you measure? Where is your patient in terms of these outcomes now?**
- 19. What did you do well in this scenario?**
- 20. If you were able to do this again, what would you do differently?**
- 21. What guided your decision-making process? What did you see? Hear? Smell?**
- 22. Were you reminded of a previous experience? Did this influence your thinking?**
- 23. What were your specific goals? Priorities?**
- 24. What other courses of action did you consider?**
- 25. Did you follow a known rule, policy, procedure, and algorithm?**
- 26. If your decision was not the best, what training, knowledge, or information could have helped?**
- 27. How much was time pressure a factor in your decisions/actions?**
- 28. How would you summarize this experience?**

## **Week # 4 Simulation Emergency/Disaster Preparedness**

### **Simulation Learning Objectives:**

At the completion of this simulation, the student will:

- Successfully triage victims of a mass casualty event as evidenced by correct triage tag designations.
- Perform a rapid trauma assessment on patients with traumatic injuries.
- Apply, administer and perform all necessary nursing interventions to a patient with traumatic injuries.
- Be able to use lab data and clinical manifestations to determine the effectiveness of treatment.
- Be able to teach the importance of blood glucose monitoring to the patient with diabetes.
- Collaborate with members of the health care team during a mass casualty event.

### **Brief overview of Scenario:**

A school bus was on its way to a farm for a class trip when the driver lost control, drove off the highway onto a downward-sloped grass median, causing the bus to turn on its side. The bus contained 1 bus driver, 2 teachers, 2 parents, and 10 preschoolers. Several witnesses called 911 and reported the accident. The fire department and EMS are dispatched to the scene.

A car containing 4 nurses carpooling to a nursing convention came upon the accident about 30 seconds after the fire department arrived. The nurses decided to pull over and offer assistance until EMS arrived. The nurses triage the patients as the fire fighters extricate them from the bus.

Cody is a 4-year-old white male brought in by EMTs (Basic Life Support) via ambulance with a yellow triage tag after being involved in the school bus accident. When the school bus tipped over Cody was thrown from his seat and fell onto the corner of a seat on the opposite side of the bus, causing blunt trauma to the abdomen. Cody is diagnosed with active internal bleeding in the abdomen and needs to go to the operating room as soon as possible.

### **Debriefing/Guided Reflection Questions for this Simulation**

How do you feel you performed triaging at the multiple casualty event?

What could be improved with your triaging?

How do you feel you performed your rapid trauma assessment?

What could be improved with your rapid trauma assessment?

Did you remember to implement all nursing interventions for your patients in the emergency department?

How will you improve your triage, rapid trauma assessment and nursing intervention skills?

Do you feel ready to participate in a drill or a disaster after this week? Why or why not?

**Mercer County Community College**  
**Division Math, Science & Health Professions**  
**Nursing Program**  
**NRS 231 Information Technology Literacy Activity: Disasters**

Course SLO: 8  
Level SLO: LII 9  
MCCC Core Abilities: A, D, E, F  
General Education Outcomes (Goals): 1, 4

Below are listed the disasters that have been assessed to most likely occur in Mercer County, New Jersey, or, should they occur, have the highest impact to the health care system. If there are more students than disasters listed below, refer to the “Disasters” slide in the Concepts of Emergency and Disaster Preparedness PowerPoint presentation for additional topics. No topic should be researched by more than one student unless absolutely necessary.

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

Each student should select one topic to research during the clinical period. The following questions should be addressed within their research:

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 (pick one).
2. How can the nurse protect the safety of himself/herself during this disaster?
3. How can the nurse protect the safety of the patients during this disaster?
4. What is the role of the healthcare facility in protecting the safety of the patients and staff?
5. Can a nurse be prepared for this disaster? If so, how?

Provide at least one example of this type of disaster occurring and affecting a healthcare facility in the recent past. 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 10 minutes in length. You do not need to submit a copy of your presentation, but you must state the resources you utilized to gather your information. You do not have to do a PowerPoint or create a poster. Discuss what you learned from this exercise in your weekly journal. The presentations will be done during the second clinical day for week 3.

## **Week # 3 Simulation Alteration in Tissue Integrity: Burn Injury (Adult & Pediatric)**

### **Simulation Learning Objectives:**

1. The student will be able to apply the principles of asepsis to protect burn adult or pediatric patients with open wounds.
2. The student will be able to manage the patient's environment to prevent infection from auto-contamination and cross-contamination in adult or pediatric patients with burn injuries.
3. The student will be able to teach others fire prevention strategies.
4. The student will be able to assess the patient's and family's use of coping strategies related to burn injury, treatment, possible role changes and possible outcomes.
5. The student will be able to support the patient and family in coping with permanent changes in appearance and function.
6. The student will be able to identify burn patients at risk for inhalation injury.
7. The student will be able to prioritize nursing care for the patient during the resuscitation/emergent phase of burn injury.
8. The student will be able to use lab data and clinical manifestations to determine the effectiveness of fluid resuscitation during the resuscitation/emergent phase of burn injury.
9. The student will be able to coordinate with the nutritionist to meet the nutritional needs for the patient during the acute phase of burn injury.
10. The student will be able use appropriate positioning and range-of-motion interventions for prevention of mobility problems in the patient with burns.

### **NCLEX-RN Detailed Test Plan 2010 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.

**Adult Burn Simulation Scenario:** Randy, a 22 year old engineering student, was home visiting his relatives for spring break. While working on the family car, Randy primed the carburetor and suddenly found his clothes in flames. While yelling for help, he immediately dropped to the ground and rolled in the dirt and grass. His brother heard the commotion, dashed outside, assisted Randy in smothering the flames, and then rushed to the telephone to call 911.

The accident occurred at 10:00AM. EMT's obtain VS: R 22, P138, BP 132/78. At 10:30AM Randy arrived in the ER of the regional burn center. He was awake and alert. His respirations are 32/min and unlabored. BP 156/88, P 148. His face and neck are burned and appear to be partial thickness. His nasal hairs, eyelashes, and eyebrows are singed.

**Pediatric Burn Simulation Scenario:** Jake is an 8 year old boy who was involved in an explosion in his home. He was thrown 15 feet and hit a wall when the gas oven in the kitchen blew up. He has bruising and abrasions on the right chest wall from having sustained blunt chest trauma. He also has facial burns and was noted to have soot around his mouth. Paramedics report that at the scene the patient had a decreased level of consciousness and respiratory distress, which required intubation. Cervical spine protection was initiated and the patient is in complete spinal immobilization. BP is 70/40 mm Hg, pulse 120, and the patient is being ventilated with a bag-valve device. Paramedics report he is becoming more difficult to ventilate. The patient has just arrived in the emergency department. The RN is informed that the patient's mother was also at home in the kitchen when the explosion took place. The mother was dead at the scene. On admission to the ED, it is noted that there is no chest rise on the right and there is difficulty in ventilating the patient.

On neurologic assessment, Jake is unconscious and does not open his eyes to any stimulus. He reaches out with his L hand when painful stimuli is applied to the R hand/arm. There is no motor movement noted on the R side of the body.

#### **Pediatric Simulation Learning Objectives:**

1. The student will be able to apply the principles of asepsis to protect pediatric burn patients with open wounds.

2. The student will be able to manage the pediatric patient's environment to prevent infection from auto-contamination and cross-contamination in patients with burn injuries.
3. The student will be able to teach others injury prevention strategies for children.
4. The student will be able to assess the patient's and family's use of coping strategies related to catastrophic injury, treatment, possible role changes and possible outcomes.
5. The student will be able to support the pediatric patient and family in coping with permanent changes in appearance and function.
6. The student will be able to identify pediatric burn patients at risk for inhalation injury.
7. The student will be able to prioritize nursing care for the pediatric patient with a catastrophic injury.
8. The student will be able to use lab data and clinical manifestations to determine the effectiveness of interventions/treatments during the emergent phase of a catastrophic injury.
9. The student will be able to coordinate with the nutritionist to meet the nutritional needs for the patient during the acute phase of catastrophic injury.
10. The student will be able use appropriate positioning and range-of-motion interventions for prevention of mobility problems in the patient with catastrophic injury.

#### **NCLEX-RN Detailed Test Plan 2010 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.

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**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.

### **Debriefing/Guided Reflection Questions for Simulation**

29. What were the primary concerns in this scenario?
30. Did you miss anything in getting report on this patient?
31. Did you have sufficient knowledge/skills to manage this situation?
32. What were your primary nursing diagnoses in this scenario? What nursing interventions did you use, what outcomes did you measure? Where is your patient in terms of these outcomes now?
33. What did you do well in this scenario?
34. If you were able to do this again, what would you do differently?
35. What guided your decision-making process? What did you see? Hear? Smell?
36. Were you reminded of a previous experience? Did this influence your thinking?
37. What were your specific goals? Priorities?
38. What other courses of action did you consider?
39. Did you follow a known rule, policy, procedure, and algorithm?
40. If your decision was not the best, what training, knowledge, or information could have helped?
41. How much was time pressure a factor in your decisions/actions?
42. How would you summarize this experience?

**Week 5 – All students will take the Pediatric HESI exam and course Final Exam, there is no simulation activities in week 5. The Emergency Room observation is the make-up experience for the week 5 clinical time.**