



CRITICAL CARE NURSING CURRICULUM

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CRITICAL CARE NURSING CURRICULUM

2016 Version

The pages that follow represent the combined efforts, commitment and dedication of a group of professionals to review and revise the Critical Care Nursing Curriculum at Bachelor of Science in nursing (BSN) level. The overall aim of this endeavor is to raise standards in Critical Care Nursing (CCN) on a national level and meet the health practice setting needs.

These efforts have been supported by the Palestinian Health Capacity Project (PHCP), funded by the United States Agency for International Development (USAID) and implemented by IntraHealth International (IntraHealth) and its partner, Juzoor for Health and Social Development (Juzoor).

The aim of this curriculum is to provide a course outline for the critical care nursing component of the BSN education program under the Accreditation Quality Assurance Commission (AQAC) at the Ministry of Education and Higher Education (MoEHE).

It is hoped that the enclosed information will enhance the uniformity and standardization of critical care nursing education, according to evidence-based knowledge and practices, and ultimately contribute to improving the quality of health care provided to Palestinian patients.

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PREFACE

In 2015 the Ministry of Health (MOH), in cooperation with AQAC, unified the teaching standards for the BSN. To strengthen the critical care curriculum under the BSN, PHCP through its partner Juzoor, in cooperation with the MoEHE/AQAC and the MOH's Director General of Education in Health, updated the critical care nursing curriculum with input from both local and external technical specialists to be in line with the national updates of the Nursing Standards.

The following approach was adopted:

- A Technical Working Group (TWG) championed by the Director General of Education in Health was set up to review the existing national curriculums in critical care and review them.
- A senior international consultant was contracted to review, adapt and consolidate the review by the TWG in line with international standards and competency frameworks and the latest evidence-based knowledge and practices.
- The updated curriculum was disseminated to all the Deans of the nursing schools for review
- The comments from the national and international reviews were shared and discussed with the TWG and finalized.
- The finalized draft was submitted to and approved by the MoEHE/AQAC and the MOH Director General of Education in Health.

The contents of this curriculum and further instructions related to the critical care nursing may be clarified or expanded upon by the MoEHE/AQAC, in accordance with their mandate, through issuance of specific written communication and periodic notices specifically related to:

- Ensuring that the evidence-based concepts and practices are better reflected throughout the curriculum;
- Critically reviewing the competencies expected of BSN graduates in critical care concepts and skills;
- Promoting dialogue between academic institutions and nurses in the service institutions that serve as clinical training sites for BSN students, particularly for critical care nursing;
- Reviewing the teaching methods used to deliver the curriculum; and,
- Providing faculty development opportunities for the academic and clinical instructors who teach the critical care curriculum.

Dr. Salwa Bitar



Chief of Party, PHCP

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This curriculum could not have been developed without valuable contributions from several Palestinian nurse educators and health professionals and experts who gave of their precious time and expertise.

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- Ms. Dina Nasser, Health Advisor
- Ms. Maha Khatib, Technical Specialist Education and Credentialing
- Ms. Stephanie Hansel, Technical specialist

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- Mr. Ali Batran, Hebron University
- Mr. Baha' Alassoud, Hebron University
- Mr. Jameel Shqirat, Al Makassed Hospital Nursing College
- Ms. Naila Hejaij, Al Makassed Hospital Nursing College
- Mr. Imad Asmar, Birzeit University
- Dr. Basma Saleem Salameh, American Arab University
- Mr. Osaid Rasheed, Al Quds University

INTRODUCTION TO THIS CURRICULUM

Two sections are included: theory and clinical course outlines. Each course outline describes credit hours, placement, pre-requisites, and co-requisites courses.

This Curriculum provides a detailed guide for the content of critical care nursing across the course.

Primary users of this document are critical care nursing faculty members and clinical instructors. Secondary users are undergraduate nurses.

Faculty members and clinical instructors should be thoroughly familiar with the curriculum of the critical care course description, teaching and learning methods, teaching aids, grading and evaluation process.

Education facilities and course coordinators will find this Curriculum useful to further develop materials and set the teaching methods for the critical care nursing course. Other nursing educators may find this Curriculum useful as a model for adaptation in other nursing teaching courses as well.

Organization of the Curriculum

The Curriculum is divided into three sections:

Section 1: Critical Care Nursing Theory Section: This section outlines the overview and description of the theory section that takes place in class, educator's teaching plan, time needed, page numbers to the textbook¹ that covers details of each topic, and when to set the exams throughout the course.

Section 2: Critical Care Nursing Clinical Section: This section is a co-requisite to the critical care nursing theory section. This section outlines the overview and description of the clinical section, teaching methods, critical care units rotation, clinical evaluation and grading. During the clinical section the student is following his/her specialized nursing clinical competencies booklet² designed for nursing undergraduate students. It contains all procedures that students are expected to perform safely throughout their training period. It provides the student with a record of skills performed during his/her clinical practice. It helps the student to identify his/her learning needs and guides instructors and students to clinical learning objectives.

¹ Sole, Klein & Moseley. (2013). *Introduction to Critical Care Nursing* (6th Edition). US: Saunders

² Competency Booklet: a separate record of skills performed during nursing student during her/his clinical practice developed by the CC Faculty members.

The booklet enables both students and instructors to cover most of the procedures within an appropriate period. For an accepted level of performance of skills, the booklet is designed to cover each skill in the following three domains:

- 1) Observing
- 2) Participating
- 3) Performing

Whenever a student observes, participates, or performs a certain procedure the instructor will sign in the designated column. Students are expected to remind their instructors about any procedure that they did not yet practice.

Section 3: The annexes include examples in guidelines for nursing students in clinical setting, evaluation criteria, grading criteria, case study outline, description of the experience in the dialysis department and operation room (OR), student/clinical rotations distribution, simulation suggestions, case study (simulation scenarios) to be used either in hospitals or simulation labs in the universities, and additional thoughts on how to introduce Quality and Safety Education for Nurses QSEN Competencies through the curriculum.

CRITICAL CARE NURSING THEORY SECTION

CRITICAL CARE NURSING THEORY SECTION

Title: Critical Care Nursing

Course Credits: 4 credit hours Theory

Placement: Senior year

Pre-requisites: Young and Middle Age Adult Health + Older Adult Health

Co-requisites:

Course Description:

Advances in technology and medicine mean that increasing numbers of severely ill patients are surviving with a corresponding need for intensive nursing care. Critically ill patients are often managed in an intensive care unit within a hospital where sophisticated equipment is available to enable frequent monitoring of vital signs, assisted ventilation and, when life-threatening crises occur, and rapid resuscitation measures. This course focuses on the causes of single and multi-organ system dysfunction and the human responses to life threatening illness. Nursing care focused on restoring physiologic and psychological stability to the severely ill client will be explored. Core concepts of complex pathophysiology, current treatment modalities, and the role nurses perform when providing care to critically ill patients are discussed.

Teaching – Learning methods: references ³

- 1- Discussion – critical thinking
- 2- Presentation and lecturing
- 3- Role playing and case study reviews
- 4- Assignments
- 5- Activities/Exercises

Teaching aids: will be developed by the educators and instructors

- 1- Blackboard
- 2- Handout
- 3- Scenarios/simulation
- 4- Videotapes
- 5- Computer and LCD

Grading and evaluation: Exams and evaluation tools will be developed by educators and instructors.

³ Sole, Klein & Moseley. (2013). *Introduction to Critical Care Nursing* (6th Edition). US: Saunders, instructor manual

First hour exam	20%
Second hour exam	20%
Simulation	10%
Assignment & Activities	10%
Final hour exam	40%
<i>Total</i>	<i>100%</i>

Intended Learning Outcomes:

1. Integrate knowledge from nursing and related disciplines into the nursing care plan of persons with life-threatening illnesses.
2. Identify appropriate documentation of nursing care delivery to the critically ill client and the family.
3. Identify collaborative strategies with colleagues from nursing, related disciplines and consumers to develop a comprehensive plan of care for clients experiencing acute trauma or a critical illness.
4. Explore practice, ethical, legal and interpersonal dimensions within the trauma/critical care setting.
5. Identify problems for nursing research in trauma/critical care nursing.
6. Examine the role of the professional nurse as an advocate for the acute trauma/critically ill client and the client-family unit.

Required Textbooks: the following text books had been recommended to be used as the main text books for General Nursing graduates.

Sole, Klein & Moseley. (2013). *Introduction to Critical Care Nursing* (6th Edition). US: Saunders
Goldman, M. (2007).

Pocket Guide to the Operating Room (3rd Edition). Philadelphia: Davis.

Carlson, K. (2009). AACN Advanced Critical Care Nursing. Saunders. Chapter 14, pages 297-318.

Recommended Readings:

Siegel, M. (2009). End-of-Life Decision Making in the ICU. *Clinical Chest Medicine*, 30, 181-194.

Theory Course Outline

Week No.	Topic	Objectives	Page #s ⁴ Textbook	Daily Hours
1	Introduction to Course			0.5
	Concepts of critical care and intensive care <ul style="list-style-type: none"> • History of critical care units • Unit designs • Care Models • Goals of Care • Understanding principles of Triageing • Understanding the role of BLS and ACLS protocols 	<ul style="list-style-type: none"> • Describe the benefits and challenges of critical care units and intensive care • Compare and contrast the needs of family members whose patient is in the ICU • Describe ways nurses can support family members while the patient is in the ICU • Describe legal and ethical issues that arise in critical care nursing 	2-11	1.0
	Patient & Family Response to Critical Care	<ul style="list-style-type: none"> • Explain the nurse's role in ethical and legal situations 	14-23	1.0
	Ethical and Legal Issues in Critical Care	<ul style="list-style-type: none"> • Review scenarios encountered in the ICU, ER, and discuss the ethical and/or legal issues presented 	26-36	1.5

⁴ Sole, Klein & Moseley. (2013). *Introduction to Critical Care Nursing* (6th Edition). US: Saunders

2	<p>Comfort and Sedation</p> <ul style="list-style-type: none"> • Terms • Pain, agitation, anxiety, sedation scales • Delirium, Dementia signs & symptoms • Confusion • Pharm and non-pharm therapies <p>Nutritional Support</p> <ul style="list-style-type: none"> • Assessing nutritional status • Enteral and Parenteral nutrition • Monitoring nutritional status and determining if needs are met <p>QSEN Competencies</p>	<ul style="list-style-type: none"> • Define pain, discomfort, confusion, agitation, anxiety, comfort and sedation • Describe ways to assess the patient for pain, discomfort, confusion, agitation and anxiety • Explain how to use pain & agitation scales • Compare and contrast the causes, clinical symptoms and management of Delirium and Dementia • Describe the common pharmacologic and non-pharmacologic management for pain, discomfort, agitation, anxiety, and confusion • Explain why nutritional supplementation is necessary in the critically ill • Describe ways to assess and monitor effectiveness of nutritional supplementation • Compare & contrast benefits and challenges of parental and enteral nutrition • Define the QSEN competencies • Relate competencies to nursing care of the critically ill patient 	<p>48-75</p> <p>80-92</p> <p>679-682</p>	<p>2.0</p> <p>1.0</p> <p>1.0</p>
3 & 4	<p>Shock States: Distributive, Hypovolemic, Cardiogenic & Obstructive</p> <ul style="list-style-type: none"> • Etiology & Pathophysiology • Clinical Signs & Symptoms, including hemodynamics • Management – Pharmacologic & Non-pharmacologic • Evaluation of Treatment Plan • Goals of Care • Nursing Care for patients in shock states <p>Hemodynamic Monitoring</p> <ul style="list-style-type: none"> • Components, normal values, how values are obtained or calculated 	<ul style="list-style-type: none"> • List the 4 classifications of shock and the types of shock found in each class • Explain the pathophysiology and progression through each shock state • Define the goals of care for each shock state and the nursing care required when managing patients in shock • Describe the hemodynamic values associated with the various shock states • Define the causes, clinical presentation, diagnostic lab results and management of each shock state • Explain the concepts of cardiac output, cardiac index, SVR and how they relate to the 	<p>250 – 287</p> <p>140-168</p>	<p>3.0</p> <p>1.0</p> <p>2.0</p>

	<ul style="list-style-type: none"> Nursing care of the patient with hemodynamic monitoring Interpreting hemodynamic values in relationship to shock states <p>Vasoactive Medications</p> <ul style="list-style-type: none"> Classifications and names of medications, mechanisms of action and dosage ranges, indications for use and intended effects Calculating dosages and infusion rates for vasoactive medications <p>QSEN competencies Safe Medication Administration</p>	<p>physiologic changes that occur in shock states.</p> <ul style="list-style-type: none"> Describe how vasoactive medications are used to improve blood pressure, cardiac output, contractility and reduce SVR Calculate accurate dosages of vasoactive medications and their infusion rates 		
5	FIRST HOUR EXAM in-line with other courses schedule			1.0
5 &6	<p>Introduction to Dysrhythmias</p> <ul style="list-style-type: none"> Review of Conduction System Basics of ECG Interpretation Dysrhythmia: <ul style="list-style-type: none"> Identification Detection Causation Management/interventions (Refer to ACLS protocols) Rapid Response and Code Teams <ul style="list-style-type: none"> Roles within these teams Goals of care <p>QSEN Competencies Safe Medication Administration for arrhythmias and associated sequelae</p>	<ul style="list-style-type: none"> Identify components of the conduction system and the related PQRST of the ECG tracing Recognize normal and abnormal atrial, junctional and ventricular rhythms Identify life threatening dysrhythmias and institute ACLS protocols as necessary Discuss the nurses role in emergency/code situations Describe the role and responsibility of rapid response teams Discuss how medications are administered safely and accurately in high stress and/or chaotic situations 	94-138	3.0
			220-226	2.0
6 &7	<p>Cardiac Vascular Systems</p> <ul style="list-style-type: none"> Cardiac assessment, diagnostics Management of ACS/AMI Management of Heart Failure Coronary Artery Bypass Surgery 	<ul style="list-style-type: none"> Explain the progression of coronary artery disease and ways to determine the extent of disease present Explain the differences between coronary artery disease (CAD), Acute Coronary Syndrome 	289-343	2.0
			**Carlson,	2.0

	QSEN Competencies Safe Medication Administration	<p>(ACS), and an Acute MI (AMI)</p> <ul style="list-style-type: none"> Describe the management of CAD, ACS and AMI Describe the use of angioplasty and stent placement in the management of coronary artery disease and the nursing care required when managing patients with these procedures Discuss when the decision to take a patient for a coronary artery bypass graft (CABG) surgery is necessary Explain the preoperative responsibilities of the nurse when preparing a patient for surgery Describe the goals of care and nursing responsibilities in the immediate post-operative period after CABG surgery Describe how the nurse and medical team monitors the patient's cardiac index, fluid status and cardiac function, and overall response to bypass surgery and responds to changes. 	297-318.	2.0
8	SECOND HOUR EXAM			1.0
8&9	<p>Respiratory System Airway Management</p> <ul style="list-style-type: none"> Advanced Principles of Oxygen and Ventilation Oxyhemoglobin Dissociation Curve Supplemental oxygenation; pulse oximetry <p>Acute Respiratory Failure</p> <p>Acute Respiratory Distress Syndrome</p> <p>Acute Pneumonia</p> <p>Ventilator Associated Pneumonia</p>	<ul style="list-style-type: none"> Describe how the pulse oximeter reflects the oxyhemoglobin dissociation curve and how it reflects where the patient's oxygenation status is and its relationship to successful oxygenation Discuss the various types of oxygen delivery devices used and the situations where these are appropriate Describe the nursing care of the patient in acute respiratory failure Explain how Acute Respiratory Distress Syndrome differs from Pulmonary Edema Discuss the management of the patient with Pneumonia Describe the management of the patient with a 	400-429	<p>1.0</p> <p>2.0</p> <p>1.0</p>

11	<p>Simulation Sessions</p> <p>Some examples available in the annexes can be used</p>			1.0
11	<p>Hematologic and Immune Disorders</p> <p>Solid Organ Transplantation</p> <p>Safe Medication Administration related to polypharmacy for immunocompromised patients</p>	<ul style="list-style-type: none"> Describe commonly encountered bleeding disorders in ICU patients and how they are treated Discuss reasons for immunocompromised patients to be cared for in the ICU Explain the nurses role in infection control List the types of solid organ transplants conducted in Palestinian Hospitals Describe the pre and post-operative nursing care of transplant patients 	<p>460-501</p> <p>658-673</p>	<p>1.0</p> <p>2.0</p>
12	<p>Endocrine System</p> <p>Endocrine Disorders</p> <ul style="list-style-type: none"> Hyperglycemia Monitoring and Treatment Diabetic Ketoacidosis Preventing and Treating Hypoglycemia <p>Safe Medication Administration focused on giving IV insulin followed by subcutaneous insulin, reducing potassium levels and avoiding hypoglycemia</p>	<ul style="list-style-type: none"> Explain why hyperglycemia occurs in critically ill patients and methods of assessing for it. Describe what DKA is and how it's treated Discuss the nurses role in managing a patient's glucose level; both high and low 	543-586	2.0
13	<p>Gastrointestinal Concerns in the ICU</p> <ul style="list-style-type: none"> Acute Liver Failure Gastrointestinal bleeding Pancreatitis 	<ul style="list-style-type: none"> Describe the role of the liver and the multiple causes of liver failure Describe why patients are placed on peptic ulcer prophylaxis and what pharmacologic agents are used 	502-542	1.0

14	<p>Neurologic System</p> <ul style="list-style-type: none"> • Increased ICP • Stroke Management <p>Safe Medication administration related to providing thrombolytic medications for ischemic strokes, providing oral medications in patients with dysphagia and providing treatments for increased ICP</p>	<ul style="list-style-type: none"> • Identify what ICP measures and the normal values and waveforms for intracranial pressure • Describe methods for monitoring ICP and both invasive and non-invasive approaches to reducing ICP levels • Describe the causes of acute stroke – ischemic and hemorrhagic and how each is diagnosed and managed • Discuss the potential presentation of someone having a stroke; clinical signs and symptoms • Describe the nursing care of the patient with an acute stroke including pharmacologic and non-pharmacologic approaches to care 	345-399	3.0
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	<p>throughout the pre, intra and post-operative phases of surgery</p> <ul style="list-style-type: none"> • Review of common surgical procedures <p>QSEN competencies as they related to the perioperative settings</p>	<p>circulating nurse and the scrub nurse in the preoperative, perioperative and postoperative phases</p> <ul style="list-style-type: none"> • Identify common instruments used during surgery • Recognize unique nursing considerations for patients undergoing surgery • Explain how equipment and supplies are sterilized and stored • Familiarize oneself with the variety of surgical procedures performed 		
17	<p>End of Life Care</p> <ul style="list-style-type: none"> • Breaking Bad News to Patients and/or their families • Managing the dying patient in the ICU <p>Ethical and Legal Issues at the End of Life</p> <p>QSEN Competencies during the End of Life phase</p> <p>Course wrap-up</p>	<ul style="list-style-type: none"> • Define palliative care and end of life care and describe the differences in goals of care • Discuss ways to support patients and their families during and after bad news is given • Describe the management of the dying patient in the ICU • Discuss the ethical and legal issues that arise when making end of life decisions • Explain how QSEN competencies can be maintained during the End of Life phase 	37-43	4.0
		FINAL EXAM		

CRITICAL CARE NURSING CLINICAL SECTION

CRITICAL CARE NURSING CLINICAL SECTION

Title: Critical Care Nursing Clinical Section

Course Credits: 4 credit hours

Placement: Senior year

Pre-requisites: Young and Middle Age Adult Health + Older Adult Health

Co-requisites: Critical Care Nursing - Theory

Course Description:

Advances in technology and medicine mean that increasing numbers of severely ill patients are surviving with a corresponding need for intensive nursing care. Critically ill patients are often managed in an intensive care unit within a hospital where sophisticated equipment is available to enable frequent monitoring of vital signs, assist with ventilation and, when life-threatening crises occur, perform rapid resuscitation measures. This clinical course provides students with the opportunity to apply theoretical concepts learned to actual patient care situations with guidance from the clinical instructor. Clinical rotations held in intensive care units, a burn unit, operating room, emergency department and renal dialysis unit provide students with the context for experiential learning. Students are expected to work towards developing competency in each clinical area based on clearly defined parameters.

Teaching – Learning methods: take place at hospitals/training sites

- 1- Active participation in care activities
- 2- Observation
- 3- Reflection on care activities and patient responses
- 4- Simulation

Grading & Evaluation of Clinical:

Case Study	10%
Objective Structured Clinical Examination (OSCE)	20%
Weekly Clinical Logs & Reflections*	20%
Simulation of advanced competencies	20%
Clinical Performance/Professional Behavior	30%
<i>Total</i>	<i>100%</i>

Intended Learning Outcomes:

After completion of the clinical experience, the student will be able to:

1. Describe the general function and set up of each clinical setting
2. Explain the roles and responsibilities of nurses working in each clinical setting; e.g., triage nurse, circulating nurse, dialysis nurse, charge nurse etc.
3. Discuss the assessment and treatment priorities in each clinical setting
4. Identify emergency equipment used in various situations
5. Demonstrate how to apply and properly use emergency equipment
6. Assess pain considering patient's cognitive status and age
7. Identify and monitor normal and abnormal diagnostic test results
8. Demonstrates a solid knowledge base related to diseases, disorders and related issues – pathophysiology, signs & symptoms, management approaches, and potential complications
9. Assesses patient and obtains medical, social and family history and relative information/data accurately to formulate appropriate nursing diagnoses
10. Identifies actual and potential problems, short and long-term goals of care, interventions to be instituted and evaluation criteria
11. Modifies plan of care based on patient responses to plan instituted
12. Maintains infection control throughout clinical experiences
13. Educates patient and/or family on illness related topics
14. Takes responsibility for assigned nursing care
15. Manage patients receiving:
 - a. Medications (e.g., safe administration, monitoring, polypharmacy)
 - b. Complementary/alternative medicine and/or non-pharmacologic interventions
 - c. Monitor patients and follow protocols for pre- and post-operative care
16. Recognize normal and abnormal developmental assessment findings and provide developmentally appropriate care
17. Recognize normal and abnormal:
 - a. Physical assessment findings
 - b. Psychosocial assessment findings
18. Recognize signs and symptoms of emergencies, initiate interventions and seek assistance as needed
19. Provide and Accept Change of Shift Report

This clinical course provides students with the opportunity to apply theoretical concepts learned to actual patient care situations. With guidance from the clinical instructor, they will learn the skill and indication for the interventions following the human systems assessment (ex. cardiac, renal, etc.).

CARDIAC

1. Apply leads for cardiac monitoring
2. Identify, interpret and monitor cardiac rhythms
3. Recognize indications for and manage patients requiring:
4. Central venous access
5. SVO2 monitoring
6. Monitor hemodynamic status, and recognize signs and symptoms of hemodynamic instability
7. Recognize indications and potential complications of and manage patients requiring:
 - a. 12-lead ECG
 - b. Arterial catheter
 - c. Cardiac catheterization
 - d. Cardioversion
 - e. Central venous pressure monitoring
 - f. Defibrillation
 - g. Invasive hemodynamic monitoring
 - h. IABP
 - i. Percutaneous coronary interventions
 - j. Vascular stenting
8. Manage patients who have:
 - a. Acute Coronary Syndrome
 - b. Acute Myocardial Infarction
 - c. Acute Dysrhythmias
 - d. Acute Heart Failure

CARDIOTHORACIC SURGERY

1. Prepares the ICU room for a patient returning from bypass surgery
2. Receives report from anesthesia providers and continues plan of care
3. Surveils closely the post-op cardiac surgery patient and documents according to guidelines
4. Recognizes abnormal findings and values and reports to physician

5. Implements urgent and routine pharmacologic and non-pharmacologic therapies as ordered
6. Supports patient and/or family through immediate post-operative period

RESPIRATORY

1. Interpret arterial blood gas results
2. Recognize indications for and manage patients requiring:
 - Endotracheal tubes
 - Bronchoscopy
 - Chest tubes
 - Conventional modes of mechanical ventilation
 - Non-conventional modes of mechanical ventilation (e.g. high frequency)
 - Noninvasive positive pressure ventilation (e.g., BiPAP, CPAP, high-flow nasal cannula)
 - Oxygen therapy delivery devices
 - Prevention of complications related to mechanical ventilation (ventilator bundle)
 - Prone positioning (lateral rotation therapy)
 - Tracheostomy
3. Pulmonary therapeutic interventions related to mechanical ventilation:
 - Airway clearance
 - Intubation
 - Weaning
 - Extubation
 - Respiratory monitoring devices (e.g., SPO₂, SVO₂, ETCO₂) and report values
 - Therapeutic gases (e.g., oxygen, nitric oxide, heliox, CO₂)
 - Thoracentesis
 - Tracheostomy with mechanical ventilation
4. Manage patients who have:
 - Acute Pneumonia
 - Acute Respiratory Failure
 - Acute Respiratory Distress Syndrome

HEMATOLOGY

1. Manage patients receiving transfusion of blood products
2. Monitor patients and follow protocols pre-, intra-, post-intervention for hematology and immunology problems (e.g., plasmapheresis, exchange transfusion, leukocyte depletion)
3. Monitor patients and follow protocols related to blood conservation

GASTROINTESTINAL

1. Monitor patients and follow protocols for pre-, intra-, post-procedure for gastrointestinal problems (e.g., esophagogastroduodenoscopy (*EGD*), Percutaneous endoscopic gastrostomy (*PEG*) placement)
2. Recognize indications for and manage patients requiring:
 - a. Gastrointestinal monitoring devices (e.g., intra-abdominal compartment pressure)
 - b. Gastrointestinal drains
3. Recognize indications for and complications of enteral and parenteral nutrition
4. Administer enteral feedings and monitor patient's tolerance
5. Intervene to address barriers to nutritional/fluid adequacy (e.g. chewing/swallowing difficulties, alterations in hunger and thirst, inability to self-feed)
6. Gastrointestinal bleeding
7. Care of patients with pancreatic and liver diseases

RENAL

1. Recognize indications for and manage patients requiring renal therapeutic intervention (e.g., hemodialysis, CRRT, peritoneal dialysis)
2. Manage patients receiving electrolyte replacement
3. Monitor patients and follow protocols pre-, intra-, post-renal procedure (e.g., renal biopsy, ultrasound)
4. Manage the patient with:
 - a. Acute Kidney Injury or Disease
 - b. Acute fluid and electrolyte imbalance

WOUND

1. Recognize indications for and manage patients undergoing therapeutic integumentary interventions (e.g., wound VACs, pressure reduction surfaces, fecal management devices, IV infiltrate treatment)
2. Identify the appropriate bandages required and apply appropriately
3. Apply splints, braces and casts for injuries as necessary
4. Assess post-operative wounds and implement wound care as ordered
5. Manage patients requiring progressive mobility

NEUROLOGIC

1. Monitor patients and follow protocols for neurologic procedures (e.g., pre-, intra-, post-procedure)

2. Recognize indications for and monitor/manage patients requiring neurologic monitoring devices and drains (e.g., ICP, ventricular drain)
3. Manage age-related communication problems
4. Manage patient who has:
 - a. Increased ICP
 - b. Acute Stroke

TRAUMA/BURN

1. Participate in performing the primary and secondary survey of a trauma or burn patient
2. Describe how ABCDE is used in thoroughly assessing the trauma patient for abnormal findings
3. Assist in performing emergent interventions for patients with abnormal assessment findings e.g., intubation, fluid resuscitation, preparation for surgery
4. Demonstrate how to determine the extent of a burn injury
5. Discuss the goals of pain control in the burn patient
6. Participate in the delivery of care in the resuscitative, acute and post-acute phases of a burn patient
7. Describe the nursing care needs of the post burn and post trauma patient

BEHAVIORAL

1. Respond to behavioral emergencies (e.g., nonviolent crisis intervention, de-escalation techniques)
2. Recognize indications for and manage patients requiring:
3. Behavioral therapeutic interventions
4. Restraints
5. Utilize behavioral assessment tools (e.g., delirium, alcohol withdrawal, mini-mental status)
6. Recognize indications for and manage patients undergoing:
 - a. Therapeutic hypothermia
 - b. Intermittent sedation
 - c. Continuous sedation
 - d. Procedural sedation
 - e. Minimal sedation
 - f. Moderate sedation
 - g. Deep sedation

MULTI-SYSTEM

1. Manage the patient who has:
 - a. Sepsis or Septic Shock
 - b. Immuno-compromise (e.g., transplant recipient, HIV)
 - c. Multi-organ System Failure

END OF LIFE

1. Delivers end of life care in a respectful manner
2. Provides physical and emotional care to patients and/or their families during end of life periods
3. Supports the decisions made by patients and families related to end of life care
4. Distinguishes between palliative care and end of life care and the situations when they are used

OPERATING ROOM

1. Identify measures taken to maintain asepsis during an operation
2. Describe common surgical procedures performed
3. Recognize common suture material, needles and instruments used in the operating room
4. Recognize the various roles of nurses within the OR theater
5. Participate in responsibilities of each nurses role in the OR
6. Assist in CSSD sterilization techniques

PROFESSIONAL BEHAVIORS

1. Exhibits punctuality and preparedness for clinical practice
2. Displays good personal hygiene and neat and professional appearance
3. Demonstrates respect for oneself and others; patients, colleagues and peers
4. Accepts constructive criticism
5. Seeks advice and assistance when unsure or situation dictates
6. Exhibits initiative, motivation, and interest related to critical care experiences and care assignments
7. Demonstrates honesty and integrity in all activities
8. Maintains patient confidentiality at all times
9. Collaborates appropriately with members of the inter-professional team
10. Acknowledges the ethical and legal issues that arise when caring for critically ill patients
11. Provides care within an acceptable timeframe
12. Documents patient status, care delivered, and responses accurately, completely and according to agency guidelines

ANNEXES

Developed by an international consultant and local critical care nursing faculty members

Annex 1: Guideline for Nursing Students in Clinical Setting

Annex 2: Critical Care Evaluation Criteria: Grading Criteria

Annex 3: Case Study Outline

Annex 4: Description of the Experience in the Dialysis Department

Annex 5: Description of the Experience in the Operating Room (OR)

Annex 6: Critical Care Nursing / Clinical Rotations Distribution Example

Annex 7: Critical Care Course Simulation Suggestions

Annex 8: Critical Care Case Study Examples (Simulation Scenarios)

1. Diabetic Ketoacidosis
2. Acute Stroke
3. Acute Myocardial Infarction
4. Head Trauma
5. Caring for post Cardiac Surgery
6. Burn
7. Acute Respiratory Distress Syndrome
8. Chest Injury Scenario; Tension Pneumothorax in Adult pt. - Penetrating Chest Injury.
9. Hip Fracture

Annex 9: additional thoughts on how to introduce QSEN Competencies through the curriculum

Annex 1: Guidelines for Nursing Students in Clinical Settings

1. Introduction

- a. Students are expected to complete 24 clinical days during the course.
- b. Each clinical day begins at 7 am and ends at 2 pm.
- c. Critical care units and institutions are chosen to provide the maximum opportunity for students to learn. Students are expected to take full advantage of the opportunities afforded to them.
- d. Students are under the supervision of a faculty member throughout their clinical training.

2. General Considerations

- a. Only those students who have participated in and successfully completed specialized instruction and clinical training in Medical/Surgical I & II, pediatrics, maternity, etc.; which enables them to provide nursing care in a variety of critical care units with the help of their instructor, may participate in critical care clinical training.
- b. Students may assist in reducing the shortage of nurses, but may not work instead of them.
- c. Working with students may foster the desire of employed nurses to continue their learning and growth within the profession.
- d. Nurse Managers will begin to recruit the best nurses during this clinical training.
- e. Students completing their clinical rotations in intensive care and in clinical agencies helps to strengthen the ties between our colleges and the health care setting. We encourage students to be actively involved in activities such as seminars, discussions, etc.
- f. Intensive care is provided by a team of health care professionals, including physicians, nurses, physiotherapists, diagnostic departments staff, and many others. Collegiality and professionalism is expected at all times.

3. Objectives for each Clinical Practice Setting

- a. Objectives that can be achieved in a variety of intensive care settings, as well as those specific to each clinical setting are provided above.
- b. Professional Behaviors that nurses should display at all times are included in the list of objectives.
- c. Students should review the clinical objectives before each day to identify experiences and skills yet to be accomplished.

Annex 2: Critical Care Evaluation Criteria: Grading Criteria

Achieving or exceeding an average score of 2.0 in each of the evaluation indicators equates to a passing grade. You must pass clinical in order to progress in the program. Failure of the clinical evaluation results in failure of the entire course and students may not progress in the program.

Rate each OBJECTIVE using the following criteria as a guideline. If there is an individual competency that is in need of more work/not being met, please indicate this concern with a comment on the evaluation and via a discussion with student.

NA: NOT APPLICABLE

- a. Does not need to perform task or procedure in this setting
- b. Unable to be performed in this setting
- c. Not observed

0: DOES NOT MEET EXPECTATIONS

- The student is not learning a particular competency at a rate and expected level at this time and needs constant one-to-one assistance, guidance, review and/or supervision.
- a. Omits task or procedure which is appropriate to client or complaint
 - b. Unsafe with patients
 - c. Unable to improve interview and physical assessment skills as expected
 - d. Does not apply knowledge base and/or lacks knowledge base for clinical management

1: SUPPORT REQUIRED

- The student has knowledge or understanding of a particular competency expected at this level, but needs frequent assistance, guidance, and/or review.
- a. Does not obtain pertinent/complete data
 - b. Activity only partially or unsafely performed
 - c. Activity performed with incorrect technique
 - d. Rarely applies knowledge and/or skill

2: MEETS EXPECTATIONS

- The student is learning a particular skill or activity at the rate and level expected at this time, with faculty consultation as appropriate.
- a. Elicits most, but not all major pertinent data

consistently

- b. Performs tasks and procedures with safety
- c. Technique infrequently needs to be reviewed and revised
- d. Usually applies knowledge and skill

3: OCCASIONALLY EXCEEDS EXPECTATIONS

The student is learning a particular skill or activity at a rate and level that occasionally exceeds expectations at this time.

- a. Elicits all major pertinent data
- b. Performs procedures and tasks with skill, efficiency, and safety
- c. Applies knowledge and skill most of the time
- d. Functions competently in all areas of evaluation and management with some guidance needed

4: CONSISTENTLY EXCEEDS EXPECTATIONS

The student is learning a particular skill at a rate and level that consistently exceeds expectations at this time.

- a. Elicits all major pertinent data and focuses on clinically relevant information to form a comprehensive assessment and plan
- b. Performs procedures and tasks with skill, efficiency, and safety
- c. Consistently applies knowledge and skill.
- d. Functions competently in all areas of evaluation and management with little guidance needed.

Annex 3: Case Study Outline

1. Introduction to the Patient:

1. Name, age, sex, etc...
2. Reason for hospitalization
3. Past medical history

2. Assessment:

Data collected (objective and subjective) should include:

1. Physical assessment (head to toes assessment)
2. Psychiatric aspects
3. Social aspects and environment
4. Laboratory studies
5. X – rays and special procedures
6. Medications

3. Identification of the Problems:

1. Medication
2. Pathophysiology – include diagrams and references

4. Nursing Care Plan:

Use Maslow's theory as a framework to organize the care plan.

1. Nursing diagnosis: Statement of problem that requires a nursing intervention and cause if known
2. Goals (observable/measurable) in terms of outcomes: short- and long-term goals
3. Nursing actions
4. Rationale
5. Evaluation of goal achievement (use patient behavior as evidence)
6. Reassessment of case plan, changing or eliminating previous nursing diagnosis, goals, and actions based on new patient data

5. Summary:

Includes summary of major actions and events occurred during hospitalization, and evaluation of progress.

6. Format:

Includes Bibliography, Neatness, Spelling, Grammar, Punctuation, and Organization.

7. Grading:

1. Introduction	5	%
2. Assessment	30	%
3. Identification of problems	10	%
4. Nursing Care Plan	40	%
5. Summary	5	%
<u>6. Format</u>	<u>10</u>	<u>%</u>
Total	100	%

Annex 4: Description of the Experience in the Dialysis Department

This report should be submitted to your instructor immediately post training.

Try to describe your experience in the kidney unit in light of the following points:

1. Structure of the dialysis department (diagram).
2. Dialysis techniques.
3. Cases you have observed.
4. New equipment/instruments you became familiar with.
5. Strengths and weaknesses that have to be improved which influence your learning.
6. Others.

Annex 5: Description of the Experience in the Operating Room (OR)

Each student must submit a written report to the faculty reflecting on his/her training period in the OR, in light of the following points:

1. OR design – structure (internal – external).
2. Instruments, sutures, technology.
3. Roles of the OR nurse and their qualifications preoperative – Intra- postoperative.
4. Goals of surgical treatment to the operations that you have attend or observed.
5. Local practices for sterilization technique.
6. Strengths and weaknesses.
7. Others.

Annex 6: Critical Care Nursing/Clinical Rotations Distribution Example

Approximately 40 students

CCU, ICU, ED, OR/PACU, Dialysis Unit

Student	CCU	ICU	ED	OR/PACU	Dialysis Unit	Burn Unit
	6 days	6 days	4 days	4 days	4 days	4 days
1	Day 1-6	7-12	13-16	17-20	21-24	25-28
2	23-28	Day 1-6	7-10	11-14	15-18	19-22
3	17-22	23-28	Day 1-4	5-8	9-12	13-16
4	13-18	19-24	25-28	Day 1-4	5-8	9-12
5	9-14	15-20	21-24	25-28	Day 1-4	5-8
6	5-10	11-16	17-20	21-24	25-28	Day 1-4
7	Day 1-6	7-12	13-16	17-20	21-24	25-28
8	23-28	Day 1-6	7-10	11-14	15-18	19-22
9	17-22	23-28	Day 1-4	5-8	9-12	13-16
10	13-18	19-24	25-28	Day 1-4	5-8	9-12
11	9-14	15-20	21-24	25-28	Day 1-4	5-8
12	5-10	11-16	17-20	21-24	25-28	Day 1-4
13	Day 1-6	7-12	13-16	17-20	21-24	25-28
14	23-28	Day 1-6	7-10	11-14	15-18	19-22
15	17-22	23-28	Day 1-4	5-8	9-12	13-16
16	13-18	19-24	25-28	Day 1-4	5-8	9-12
17	9-14	15-20	21-24	25-28	Day 1-4	5-8

Student	CCU	ICU	ED	OR/PACU	Dialysis Unit	Burn Unit
18	5-10	11-16	17-20	21-24	25-28	Day 1-4
19	Day 1-6	7-12	13-16	17-20	21-24	25-28
20	23-28	Day 1-6	7-10	11-14	15-18	19-22
21	17-22	23-28	Day 1-4	5-8	9-12	13-16
22	13-18	19-24	25-28	Day 1-4	5-8	9-12
23	9-14	15-20	21-24	25-28	Day 1-4	5-8
24	5-10	11-16	17-20	21-24	25-28	Day 1-4
25	Day 1-6	7-12	13-16	17-20	21-24	25-28
26	23-28	Day 1-6	7-10	11-14	15-18	19-22
27	17-22	23-28	Day 1-4	5-8	9-12	13-16
28	13-18	19-24	25-28	Day 1-4	5-8	9-12
29	9-14	15-20	21-24	25-28	Day 1-4	5-8
30	5-10	11-16	17-20	21-24	25-28	Day 1-4
31	Day 1-6	7-12	13-16	17-20	21-24	25-28
32	23-28	Day 1-6	7-10	11-14	15-18	19-22
33	17-22	23-28	Day 1-4	5-8	9-12	13-16
34	13-18	19-24	25-28	Day 1-4	5-8	9-12
35	9-14	15-20	21-24	25-28	Day 1-4	5-8
36	5-10	11-16	17-20	21-24	25-28	Day 1-4
37	16-21	22-28	Day 1-4	5-8	9-12	13-16
38	13-18	19-24	24-28	Day 1-4	5-8	9-12
39	9-14	15-20	21-24	25-28	Day 1-4	5-8
40	5-10	11-16	17-20	21-24	25-28	Day 1-4

Annex 7: Critical Care Course Simulation Suggestions

Topic	Simulations
<p>Shock States: Distributive, Hypovolemic, Cardiogenic & Obstructive</p> <ul style="list-style-type: none"> • Etiology & Pathophysiology • Clinical Signs & Symptoms, including hemodynamics • Management – Pharmacologic & Non-pharmacologic • Evaluation of Treatment Plan • Goals of Care • Nursing Care for patients in shock states <p>Hemodynamic Monitoring</p> <ul style="list-style-type: none"> • Components, normal values, how values are obtained or calculated • Nursing care of the patient with hemodynamic monitoring • Interpreting hemodynamic values in relationship to shock states <p>Vasoactive Medications</p> <ul style="list-style-type: none"> • Classifications and names of medications, mechanisms of action and dosage ranges, indications for use and intended effects • Calculating dosages and infusion rates for vasoactive medications 	<p>Can simulate a variety of shock states that can require the nurse to assess the patient and identify if there are any abnormal findings and report the findings to the provider. If orders are given to titrate medications, the student can implement this.</p> <p>Can have a scenario with classic presentation of someone in sepsis, heart failure, hypovolemia, cardiac tamponade with hemodynamic monitoring that goes along with the shock state and allow the student to evaluate all of the data available in the room.</p> <p>The scenarios could be set up so that the nurse has to initiate the hemodynamic monitoring – demonstrating they can set it up and connect it to the monitor. Can also assist the provider in the insertion of a swan-ganz catheter or arterial line</p> <p>Vasoactive medications can be ordered the nurse has to calculate the infusion rate and administer the infusion to the patient.</p>
<p>Introduction to Dysrhythmias</p> <ul style="list-style-type: none"> • Review of Conduction System • Basics of ECG Interpretation • Dysrhythmia: <ul style="list-style-type: none"> ○ Identification ○ Detection ○ Causation ○ Management/interventions (Refer to ACLS protocols) • Rapid Response and Code Teams <ul style="list-style-type: none"> ○ Roles within these teams ○ Goals of care 	<p>Suggest that once the basics of arrhythmia detection are taught, that simulations related to responding to changing patient condition (directly related to rhythm disturbances) and how to respond to these situations be used</p> <p>Severe bradycardia with low BP and dizziness</p> <p>Atrial Fibrillation with rapid ventricular response – rate control versus rhythm control responses</p> <p>Ventricular tachycardia with a pulse and without a pulse; Ventricular fibrillation</p> <p>Students can review ACLS protocols for the above situations with an instructor and then be “tested” on their ability to identify a situation and provide patient care until help arrives and then assume primary nurse role. Nurse would recognize when the rapid response team or code team is needed and call them.</p>

<p>Cardiac Disease</p> <ul style="list-style-type: none"> • Cardiac assessment, diagnostics • Management of ACS/AMI • Management of Heart Failure • Coronary Artery Bypass Surgery 	<p>Suggest that a patient scenario is provided to students around a case of a patient having angina and then allow the students to assess, notify the doctor, implement orders and continue to assess the patient throughout scenario</p> <p>Allows students to demonstrate their assessment skills as well as identifying when the patient is unstable and requires notifying the doctor and then how to implement orders in a dynamic situation</p> <p>Patient could be prepared for the catheterization lab and transported to the lab.</p> <p>RE: CABG</p> <p>Since this is a newer surgical procedure it may be a very good idea to have a series of simulations related to the care of the patient requiring CABG surgery. The scenario could start with the patient returning from the cath lab with an unsuccessful procedure and the need to go to surgery. This part could focus on getting the patient prepared for surgery – physically and emotionally</p> <p>The next scenario could focus on sending the patient to the OR – how the nurse assures all the documents and the patient is ready and assures he/she is sending the correct patient for the correct surgery.</p> <p>The next scenario could focus on the immediate recovery period post CABG surgery – have the manikin intubated, with chest tubes, pacer wires, foley’s catheter and several vasoactive medications and IV fluids; on the ventilator and at a cool temperature where the patient requires warming and monitoring for arrhythmias. Have students assess the patient and the associated infusions, equipment and devices attached to the patient to assure what is connected is ordered, functioning properly and that they can assess it properly</p> <p>This scenario could extend to the patient warming up, become alert, in pain, and requiring extubation.</p> <p>Several scenarios could be run – bleeding from CTs, heart block and the patient’s pacemaker has to be activated, etc.</p>
<p>Mechanical Ventilation</p> <ul style="list-style-type: none"> • Principles of mechanical ventilation • Ventilator modes and settings • Vent changes effect on blood gases <p>ABG analysis</p>	<p>After the fundamentals of mechanical ventilation are reviewed, then setting up the manikin with a variety of pulmonary issues such as respiratory failure, fluid overload, over-sedation from narcotics, ARDS and the students can be made to assess the patient, evaluate the vital signs, lab work and ABGs and determine if the patient</p>

	is receiving adequate oxygenation or requires supplemental oxygen, intubation or requires a vent change
Endocrine Disorders <ul style="list-style-type: none"> • Hyperglycemia Monitoring and Treatment • Diabetic Ketoacidosis • Preventing and Treating Hypoglycemia Gastrointestinal Concerns in the ICU <ul style="list-style-type: none"> • Acute Liver Failure Peptic Ulcer Prevention	Set up manikin to be unresponsive with a family member providing the information regarding being a diabetic, finding the patient this way, and calling for the ambulance. Have glucose level on finger stick be >350 and on lab analysis be ~800. Have the doctor order management and the nursing students implement the management and the monitoring of the patient's glucose, volume status, potassium level and level of consciousness.
Neurologic Compromise <ul style="list-style-type: none"> • Increased ICP • Stroke Management 	Set up manikin to demonstrate that he is having a stroke (this is difficult to do with a manikin. You could have a faculty member demonstrate the physical findings of a stroke, and when the management is to be provided, the care moves to the manikin). 2 different scenarios for a person with an ischemic stroke who can receive thrombolytic meds and the other scenario with a hemorrhagic stroke and on a blood thinner and how to assess their coagulation status For ICP monitoring – can set up the patient with a ventriculostomy and the ICP reading high and allow the students to assess the patient, identify the high value and implement non-invasive maneuvers. If required, they can contact the doctor and obtain orders to change ventilator settings, or drain the ICP.

<p>Trauma-related Injuries</p> <ul style="list-style-type: none"> • Traumatic Injury – Penetrating & Blunt • Burns 	<p>Manikin can be moulaged for (made up to look like it has) burns – and the students can come in to conduct the primary and secondary surveys, identify the body surface area of the burns and provide the initial resuscitative treatment in the Emergency Department.</p> <p>The patient can be transferred to the Burn unit and care can continue there – Acute phase management including pain management and wound assessment and management</p> <p>For trauma, the manikin can be moulaged to look like it has a gunshot wound, or some type of trauma and have the students review the primary and secondary survey using ABCDE. The provider can order tests and treatment and the nurses can provide the care, calculated fluid rates, infuse blood products, review lab values to identify if in renal failure, has rhabdomyolysis or compartment syndrome</p>
<p>End of Life Care</p> <ul style="list-style-type: none"> • Breaking Bad News to patients and/or their families 	<p>Develop short scenarios where the patient has to receive bad news – such as requires surgery, has cancer, not going survive the car accident, family member died. Have someone play the patient or family members involved in receiving the bad news and allow the nurses to provide emotional support to them during and following them getting the news.</p>

Annex 8: Critical Care Case Study Examples (Simulation Scenarios)

1. Diabetic Ketoacidosis

Mr. Karim is a 50 year old male presents to ED with vomiting and abdominal pain that started after dinner and is persisting until now (2 am)

Mr. Karim is a 50 year old male that presented to the ED at 2am with complaints of abdominal pain, nausea and vomiting since approximately 6 pm. He states the nausea and vomiting has been pretty constant since it began after dinner. He began vomiting undigested food but it has progressed to bile and dry heaves at this point. The abdominal pain is in his lower abdomen and is crampy, 6/10, and sometimes is a little better after he vomits but it quickly returns. He and his wife ate dinner together, cheeseburger, mashed potatoes, corn on the cob, all cooked at home by his wife. His wife has no symptoms. He tried to take some antacid but this didn't stay down either. No other treatments tried.

HISTORY

PMH: HTN

PSH: R knee arthroplasty in 1998 after skiing injury

Allergies – No Know Drug Allergies NKDA

Meds: Amlodipine 10 mg po daily

Social: married, lives in 2 story house; no children; 2 cats; drives delivery truck – takes his lunch with him; No smoking history, No ETOH or illicit drugs

Family Hx: Mom – 76 A&W w/ IDDM, HTN, High Cholesterol; Dad 80 A&W w/ HTN; gout, mild dementia;

ROS: **This information can be provided to the student or can be withheld or the student can be required to ask questions and the instructor provides the info.**

General: Doing well until about 2 weeks ago-Just hasn't felt like himself. Has lost about 20 pounds, unintentionally. States his PCP (primary care provider) told him he should lose weight about a year ago and recently he has had success but is unable to attribute this to anything other than cutting out sweets. Last PCP visit – 1 year ago with BP check. No recent travel; no unusual foods eaten. Denies fatigue but does feel sleepy every evening, often falls asleep watching TV HEENT– blurry vision after meals; Needs glasses for reading. No sinus problems. No hearing loss. Occasional headaches easily treated with Tylenol.

Cardiac – No CAD, MI, cholesterol; No palpitations, no syncope; HTN x 5 years; No murmur

PULM: Denies SOB; wheezing, cough; No hx PNA, TB, Bronchitis, No smoking Hx, No asthma, COPD, or emphysema

GI: See HPI; Eats 3 large meals/daily and occasional snacks; has felt hungrier and thirstier lately. Occasional heartburn treated with Tums. No gallbladder or liver disease. BM daily.

GU: + polyuria-has noticed he stops more often to urinate during his driving route – clear yellow urine; No burning, hematuria, reduced stream or difficulty initiating stream.

MS: No loss of musculoskeletal function or joint range of motion. Right knee without any residual problems. No joint pain.

PV: No edema, claudication, color or temperature changes in his extremities

Heme: No anemia or history of blood transfusions

Endocrine: no hot or cold intolerance; last PCP visit was told his glucose was borderline and should watch eating sweets

Neuro: No seizures or tremors. No depression.

PE: **Students can be given this information or students can be asked what items they would include in their physical assessment and the instructor can provide the information based on their requests**

VS: 99.4; 110 ST; 22; 118/72 – 110 lying; 112/68 – 118 sitting; 104/56 – 126 standing;

General: 5' 11"; 240 lbs uncomfortable and sallow appearing

Neuro: AA Ox3; lethargic

HEENT: Eyes: PERRL, conjunctive pink, sclera clear; no AV nicking; Snellen chart – 20:20;

EARS/Nose/Throat – all negative

Neck: supple; no thyromegaly, no JVD, No carotid bruits

Cardiac – normal chest diameter; no lifts or heaves; PMI – nl; Reg, Rate and Rhythm at 110 bpm; Monitor shows Sinus Tachycardia; +S1,+ S2, No S3, S4 or m/r/g/clicks;

Pulm: A/P diameter normal; no accessory muscle use; + fremitus throughout lung fields;

Percussion: resonant throughout; bronchial breath sounds throughout;

GI: round, protuberant, + hyperactive BS, no masses; +tenderness on light and deep palpation in lower quadrants; no bruits

Ext: no skin changes; no ankle or pedal edema noted; + 2/+2 pulses

M/S: - Full ROM throughout. 5/5 muscle tone/strength

Neuro: Cranial nerves II-XII intact. + sensation throughout.

Skin: warm and dry to touch; decreased skin turgor

Diagnostics Ordered/Interpreted

Abdominal Xray – no disease; no obstruction; no ileus;

Fingerstick - 468

Labs: CBC – WBC: 10.4; Hgb: 13.2; Hct: 40; plts – 480;

Lytes: 133/4.8/100/19/28/0.8/548

Lactate: 5 mmol/L

Amylase, Lipase, LFT's are within normal limits

Hgb A1C – 9.8

Ca – 8.2; Mg – 1.8; Phos – 4.4;

Urine: cloudy, yellow; + protein; +Glucose; + ketones; + leukocyte esterase

ABG: 7.29/ 34/ 96/ 18/ 100%;

Serum Osmolality – 300

****Based on the above information, the students can be asked to identify the diagnosis or provide it to them. Priorities of care can then be discussed****

Admission Order set:

- Admit to: ICU
- DKA (mild/moderate volume depletion), UTI
- Condition: Guarded/critical
- Vital signs: Hourly
- Activity: Bedrest
- Nursing orders: I & O
- Diet: NPO
- Medications:
 - ****IV Fluids: 0.9% NS 1 L over first hour. Once glucose is 200mg/dL then change fluids to D5 0.45%NaCl at 150 mL/hr. Add potassium chloride 20-30mEq/L to each bag of fluids to prevent hypokalemia****
 - ****Insulin 11 units/hour IV. Once glucose reaches 200 mg/dL then glucose checks move to every 2 hours and follow orders for subcutaneous insulin. Obtain glucose level goal from doctor****
- Levofloxacin 500 mg po q day for 7-10 days for UTI**
- Hold amlodopine. + DVT prophylaxis., Zofran for nausea.

- Labs: q 1 hour electrolytes & glucose.
- Consults: Endocrinology

**Discuss how the QSEN Competencies can apply in this case:

Patient centered care: - focus on getting him to the ICU, admitted, IV fluids & insulin; educating the patient and family about his illness.

Teamwork/Collaboration – How important it is to work together to get this patient’s orders started and to communicate with doctor about glucose level and patient’s response to treatment.

EBP – Care provided is Evidence based

Safety – close monitoring of patient’s glucose and the administration of IV insulin and electrolyte monitoring to assure patient doesn’t not become hypoglycemic or hypokalemic

Quality improvement – How important it is to provide quality care and discuss where quality issues could arise from – providing the wrong insulin to the patient; not accurately maintaining I/Os, inaccurate or incorrectly documenting lab values, doses, patient responses could result in hurting a patient.

Informatics – If the orders are entered into an electronic medical record system, the pharmacy can deliver accurate medications; no issue with reading the orders, accurate administration of medications should result and the dates/times/doses of meds can be accurately recorded and reviewed.

2. Acute Stroke

66 year old woman recently developed right facial droop, right arm drift and leg weakness. Her daughter asked 101 for help, Emergency medical services arrived within 15 minutes to the scene.

History

PMS: DM and long standing HTN noncompliant.

PSH: cholecystectomy since 20 years

Allergies: Penicillin

Medications: Atenolol 50 mg po bid, glibenclamide 5 mg po daily

Social: widow, smoker 1 pack a day, no drugs or alcohol, live with his daughter.

Family history: HTN, DM, heart attacks

ROS:

GENERAL: Patient's daughter witnessed her develop RT face droop, RT arm and leg weakness, 101 is called and arrives within 15 minutes, she stop her medication before one week. Patient was lethargic, sleepy but oriented and understood questions upon arrival ER, blood glucose level 110 mg/dl.

HEENT: headache, no sinuses problems, or hearing loss

Cardiac: no CAD, no palpation or murmur

Lung: slight nonproductive cough, mild dyspnea, no chest infections or asthma

GI: 3 meals, low salt low sugar diet, some snakes, sometimes gastric distention

GU: clear yellow urine, no hematuria or dysuria

MS: normal musculoskeletal functions, full ROM, no joint pain or muscle weakness

Vascular: no claudication or edema, no change in extremities color or temperature, no anemia

Endocrine: free

Neuro: no depression, tremors or epilepsy

PE:

VS: temp. 37.8 c, p:55 bpm, resp: 23, BP: 180/100 mmHg

WT: 85 kg, **HT:** 165 cm

Neuro :GCS 11/15, look sleepy,.....

HEENT: ENT free

Eyes: clear sclera, RT pupil moderate reaction to light

Neck: slight JVD, no thyromegaly, normal carotid blood flow, no carotid bruit

CVS: HR : regular but slow no s3 or s4, HTN, no lower limb edema, pedal pulse felt

Pulmonary: bronchial breathing sound, no accessory muscle used, fremitus, resonant sound during percussion

GI: round abdomen, RUQ scar ,normal bowel sound, no mass or tenderness, Dysphagia

MS : RT body side weakness

DIAGNOSTIC TESTS & STUDIES.

CXR : slight cardiomegally

CT: Intracerebral Hemorrhage left hemisphere

Blood test: CBC, fibrinogen, PT, PTT, INR normal results

ECG: .sinus bradycardia, slight left ventricular hyper trophy

URIN TEST: free

ADMISSION ORDERS

Admit to ICU

Bed rest

NPO

Continuous hemodynamic monitoring for blood pressure & ICP

I&O

MEDICATIONS: labetalol 20mg*2 , Mannitol 20% 0.5 mg * kg Q8hrs, phenytoin, 15–20 mg/kg

IV fluid: R/L 2000 CC /24 Hours, Hypertonic saline if manitol 20% not available

Debriefing/Guided Reflection for this Simulation:

Questions for discussion

Is it Hemorrhagic or ischemic stroke? Explain your answer?

What factors contribute to this cerebrovascular event?

What kind of secondary data you may obtain to confirm your judgment?

What other interventions could be helpful in

- 1- the scene
- 2- ER
- 3- ICU

What is the criteria for any possible surgical intervention?

Through case evaluation and reassessment, how could you confirm case deterioration / improvement?

What is your role as a nurse working in ER and ICU and to what extent its maybe helpful ?

3. Acute Myocardial Infarction

Chief complaint: Mr. Ali is 68 years old patient who presented to the ED complaining of defused chest pain that started about 40 minutes ago.

History of present illness: Mr. Ali is 68 years old patient. He presented to the ED complaining of severe diffused chest pain, shortness of breath, nausea and anxiety. These S&S started 40 minutes ago. The patient is previously known to have a history of HTN and DM for 10 years. The patient via ambulance accompanied with his son.

History:

PMH: HTN and DM type 2 for 10 years.

PSH: free.

Allergies: NKDA

Meds: Amlodipine 10 mg po daily, Metformin 850 mg po daily.

Social: married, lives with his wife and son in the same house; he has 4 siblings all married except the younger one who is 21 years old, he was a teacher at an elementary school. No smoking history, No ETOH or illicit drugs

Family Hx: his father had HTN, High Cholesterol, He passed away at age of 60 years due to MI, his mother was complaining of gout and mild dementia, she passed away at age of 83 years old.

Review of systems:

(students should ask the appropriate questions to have the following information.)

General: The patient mentioned that he had similar S&S during the last few weeks specially when he climb up the stairs or walk for a long distance, however those S&S subsides when he rest for a while. Last Primary care provider visit was 1 year ago with BP check which was within normal limits. No recent travel; no unusual foods eaten. He also feels fatigued sometimes.

Cardiac : he was diagnosed with HTN 10 years ago, No palpitations, no syncope; No murmur.

PULM: SOB; No hx PNA, TB, Bronchitis, No smoking Hx, No asthma, COPD, or emphysema.

GI: Nausea, no vomiting, Eats 3 large meals/daily and occasional snacks. Occasional heartburn treated with Tums. No gallbladder or liver disease. BM every other day.

GU: clear yellow urine; No burning, hematuria, reduced stream or difficulty initiating stream.

MS: No loss of musculoskeletal function or joint range of motion. No joint pain.

PV: No edema, claudication, color or temperature changes in his extremities

Heme: No anemia or history of blood transfusions

Endocrine: no hot or cold intolerance.

Neuro: he feels anxious now, No seizures or tremors. No depression.

Physical Assessment

(These information will be provided to the students)

VS:

BP: 160 /85 HR: 105 RR: 24 Temp: 36c he graded his pain as 10/10.

Neuro: conscious oriented * 3. appeared to be restless.

Eyes: PERRL, conjunctive pink, sclera clear; no AV nicking;

EARS/Nose/Throat – all negative

Neck: No thyromegaly, no JVD, No carotid bruits

Cardiac : normal chest diameter; +S1,+ S2, No S3, S4. Monitor shows ST- elevation along with several PVC's.

Pulm: A/P diameter normal; no accessory muscle use; + fremitus throughout lung fields;

Percussion: resonant, bronchial breath sounds throughout all of the lung fields

GI: round, normal BS, no masses; no tenderness on light and deep palpation in lower quadrants; no bruits.

Ext: no skin changes; no ankle or pedal edema noted; + 2/+2 pulses

M/S: - Full ROM throughout. 5/5 muscle tone/strength

Neuro: Cranial nerves II-XII intact. + Sensation throughout.

Skin: warm and dry to touch; decreased skin turgor

Diagnostic tests

CK-MB, Troponin: returned positive.

ECG : ST- elevation in leads II,III, AVF.

CBC: normal values.

Lipid profile: elevated total cholesterol and triglycerides.

S.Lays: normal values.

Admission Order set:

- Start routine medical intervention

Supplemental Oxygen, Nitroglycerin, Morphine, Aspirin 162 - 325 mg crushing.

- Admit to: Cath-lab for PTCA if applicable.
- After PTCA Admit to CCU.
- Vital signs: Hourly
- Activity: Bedrest for at least 24 hours.
- Nursing orders: I & O ECG changes, S&S of CHF, Bleeding from the operation site.
- Diet: NPO
- Medications:

Hold amlodopine. Start ACE-inhibitors within the first 24 hours, Anticoagulation with heparin, low molecular weight heparin, and platelet inhibitors, bivalirudin, Plavix, or fondaparinux according to the physician orders

- Consults: Cardiology.

QSEN Competencies can apply in this case as follow:

Patient centered care: - focus on quickly providing the appropriate interventions in a timely manner; educating the patient and family about his illness.

Teamwork/Collaboration – How important it is to work together to get this patient’s orders started and to communicate with doctor about the serious and life threatening chief complain and patient’s response to treatment.

EBP – Care provided is Evidence based

Safety – close monitoring of patient’s surgical wound (cath- site) and the administration of the appropriate interventions in a timely manner.

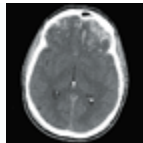
Quality improvement – How important it is to provide quality care and discuss where quality issues could arise starting from appropriately triaging the patients to providing the correct discharge plan.

Informatics – If the orders are entered into an electronic medical record system, the pharmacy can deliver accurate medications; no issue with reading the orders, accurate administration of medications should result and the dates/times/doses of meds can be accurately recorded and reviewed.

4. Head Trauma

This case introduces a victim with a head trauma due to motor vehicle accident. It has been developed to train students in the management of a trauma patient in particular head trauma.

Ahmad 30-years-old male with free medical and surgical history was traveling from Nablus to Ramallah in his own car, as some witnesses said he was driving with very high speed before he had an accident where his car hit a wall, an ambulance from the red crescent society reached the scene approximately 10 minutes after the accident and they transported him to Palestine Medical Complex (PMC), the paramedic reported that Ahmad was disoriented, walked with an unsteady gait, and had profuse bleeding from both ears. A rigid cervical collar was placed and spinal precautions were initiated and he was lifted to the ambulance, An IV 1000 cc normal saline was given to him on his way, in about 8 minutes he reached the emergency department in the PMC. On arrival his Glasgow Coma Scale (GCS) score on admission was 15 (4 = eye opening, 5 = verbal, 6 = motor), vital signs (T=36.8C. HR= 105 b/m, BP=130/85mmHg, RR=25/m, O2 sat=97%. During the emergent head computed tomography (CT), he had a generalized seizure and lost consciousness. He was urgently transferred to the ICU for intubation. The head CT revealed bifrontal and left temporal contusions with associated subarachnoid hemorrhage (SAH) and left-side subdural hematoma (SDH) with a right midline shift as shown in the image below



(Enlarge Image)

Upon arrival to the ICU, the patient's GCS score was 6 (1 = eye opening, 1 = verbal, 4 = motor) and he was becoming more bradycardic, from 40-50 beats per minute. His pupils were unequal (left was larger than right), and intermittent seizure activity was noted. Assival 10 mg IV bolus was given to control seizure activity. Mannitol was given and he was taken emergently to the operating room (OR). A bifrontal craniotomy was performed for evacuation of a left sub dural hematoma to alleviate the ICP, an intracranial pressure monitoring device catheter was inserted, and then he was transferred back to the ICU for mechanical ventilation and monitoring.

History:

History: Free past medical and surgical history.

Allergies: NKDA

Medications: None, occasionally Paracetamol.

Social: Married with three children (2, 4, and 6) years old. Lives in an average house in Nablus, works as a salesman, has an active life style with regular exercises and health meals. No smoking history, no alcohol or illicit drugs.

Family History: Father 74 years old with history of HTN since 15 years on Codiovan 80/12.5, mother 68 with rheumatoid arthritis since 7 years on NSAIDS.

ROS: ****This information can be provided to the student or can be withheld or the student can be required to ask questions and the instructor provides the information**.**

General: Doing well until today with this car accident.

HEENT: Does not wear glasses, No sinus/throat problems. No hearing loss. Occasional headaches easily treated with Paracetamol

Neuro: Upon arrival of ambulance the paramedic reported that Ahmad was disoriented, walked with an unsteady gait, and had profuse bleeding from both ears.

During the emergent head computed tomography (CT), he had a generalized seizure and lost consciousness.

On arrival to PMC GCS=15, after CT, GCS in ICU=6

Cardiac – Free of any cardiac disorder.

PULM: No history of any respiratory diseases. Now mechanical ventilation is initiated for hyperventilation purpose.

GI: No significant GI previous complaints, pt. is now NPO.

GU: no hot or cold intolerance; last PCP visit was told his glucose was borderline and should watch eating sweets. Normal urine analysis.

MS: No significant MS previous complaints. No fractures during this accident.

PV: No edema, claudication, color or temperature changes in his extremities

Hemo: No anemia or history of blood transfusions

Endocrine: No significant endocrine complaints, RBS in ER=95mg/dl

PE: **Students can be given this information or students can be asked what items they would include in their physical assessment and the instructor can provide the information based on their requests******

Vital signs: On arrival of paramedics at the scene of accident. (T=36.8C. HR= 105 b/m, BP=130/85mmHg, RR=25/m, O2 sat=97%.

Upon arrival to ED: (T=37.1C. HR= 125 b/m. BP=150/70mmHg. RR=29/m, O2 sat=95%.

Upon arrival to ICU: vital signs (T=37.3C. HR= 48 b/m, BP=160/60mmHg, RR=14/m, O2 sat=94%.

Neuro: Loss of consciousness in radiology department and ICU. His pupils were unequal (left was larger than right), and intermittent seizure activity was noted.

Diagnostics Ordered/Interpreted

Brain & Spine CT: bifrontal and left temporal contusions with associated subarachnoid hemorrhage (SAH) and left-side subdural hematoma (SDH) with a right midline shift. Spine is intact.

Glucose check: 95mg/dl

Labs: CBC – WBC: 9.4; Hgb: 17.2; Hct: 52; plts – 460;

Lytes: Na=133, K=4.8, Cl=100

Normal KFT & LFT

Urine: clear, yellow; no protein, no glucose; no ketones

ABG after mechanical ventilation: PH=7.47, Paco₂=30, pao₂=94, Hco₃=25

Serum Osmolality – 320

****Based on the above information, the students can be asked to identify the diagnosis or provide it to them. Priorities of care can then be discussed****

A. Students' General Management Responsibilities

1. Performs primary and secondary trauma survey assessment according to the ABCDE principles
2. Initiates & maintains appropriate spinal immobilization
3. Calls for adequate assistance in the ED or ICU
4. Demonstrates effective team communication
5. Ascertains important elements of the patient history
6. Demonstrates appropriate cardiac and respiratory monitoring
7. Demonstrates effective airway & mechanical ventilation management
8. Understands the importance of oxygen therapy

Recaps the indications, contraindications, and potential adverse effects of interventions including procedures and medications

After Reading thoroughly the case scenario the lecturer needs to emphasize on the following responsibilities that the students need to recall or demonstrate during their role play/simulation.

B. Case-specific Students' Responsibilities

1. Develops an appropriate differential diagnosis for the traumatized patient with altered mental status.
2. Discusses the pathophysiology, and treatment of acute intracranial injuries.
3. Recognizes the importance of mechanical ventilation/hyperventilation for pts. With elevated ICP.
4. Monitors the ICP, GCS and other neurologic parameters and acts accordingly.
5. Demonstrates appropriate management of seizures in the patient with a head injury.
6. Implements certain strategies/interventions to prevent elevation in a patient with a subdural hematoma.
7. Initiates appropriate treatment to reduce the ICP in a patient with a subdural hematoma.
8. Documents significant data related to the case.

Admission Order set:

- Admit to: ICU for mechanical ventilation (hyperventilation)
- Condition: Guarded/critical
- Hourly Monitor GCS, pupil reaction check, ICP
- Vital signs/hemodynamic monitoring: Q 30 minutes
- Activity: Bed rest with sedation
- Nursing orders: I & O
- Diet: NPO
- Medications:
- **IV Fluids: 2000cc/24 hours: 0.9% NS 1 L and D/S 1 L
- Rocephin: 1grX2 IV prophylactic.
- Assival 5mg PRN IV to stop seizures.
- Mannitol 105 1000cc/24 hours.
- Midazolam infusion for sedation
- Labs: Daily electrolytes, glucose, CBC, LFT &KFT. ABGs, q 2hours.
- Consults: Neurosurgeon

Discuss how the QSEN Competencies can apply in this case:

Patient centered care: - focus on getting him admitted to the ED, ICU & OR, drugs & fluids; educating the patient and family about his case.

Teamwork/Collaboration: How important it is to work together to get this patient's orders started and to communicate with doctor about pt.'s neurological status and his response to treatment.

Evidence Based Practice (EBP): Care provided is Evidence based

Safety: Close monitoring of patient's respiratory status, level of consciousness, ICP, and seizures activity in addition to prevention of hospital acquire infection.

Quality improvement: How important it is to provide quality care and discuss where quality issues could arise from – providing the wrong medication to the patient; not accurately maintaining ICP, wrong mechanical ventilator setting, inaccurate or incorrectly documenting lab values, doses, patient responses and lack of application for universal precautions could result in hurting a patient.

Informatics: – If the orders are entered into an electronic medical record system, the pharmacy can deliver accurate medications; no issue with reading the orders, accurate administration of medications should result and the dates/times/doses of meds can be accurately recorded and reviewed.

5. Caring for Post Cardiac Surgery – CABG

Mr. Talbishi is a 65 year old male admitted to Cardiac Care Unit (CCU) as post Coronary artery bypass grafting CABG surgery – four vessel 22/02/16

Mr. Talbishi is a 65 year old male who had Chest pain with exertion/relief with nitro *4 in past two months. Angiogram done 15/02/16 – multiple blockages in RCA and LCA. He was highly advised to be admitted to the hospital for preparing for CABG surgery. He admitted to CCU at p.m. after performed CABG surgery with four vessels the day before yesterday.

Patient demographic data

Name: Talbishi

Age: 65 years old

Gender: Male

Date of Birth: 10/06/51

Weight: 85.5 kg.

Height: 173 cm.

Phone: 605-123-4567

Contact Person: His wife.

History:

Past Medical History: CAD – MI in 2003 with 3 stents in RCA, angioplasty in 2000

Hypercholesterolemia, Type II DM, Hypertension. Chest pain with exertion/relief with nitro *4 in past two months. Angiogram 15/02/16 – multiple blockages in RCA and LCA.

Past surgical history: appendectomy in 1999. Cardiac Cath with 3 stents in RCA in 2003

Allergies: NKDA

Social History: History of smoking, quit 2006.

Meds: Cordil 20 mg po *2, ASA 100 mg po *1, Glucophage 875 mg po

Family History: Unknown!

This Scenario will involve 3 students as the following: (Expected Simulation Run Time: 30 minutes)

Primary Nurse/Student #1:

It is 9 AM and you will be administering Mr. Talbishi scheduled 9 AM dose of Cefazolin.

You have already completed your AM assessment at 8 AM. You assessed the following at that time:

- Vital Signs: T – 37.1 C, P 78, BP 120/70, R 28
- C/O pain 7/10, Ibuprofen 2 tabs given po
- Lung Sounds: bibasilar crackles, scattered wheezes throughout, dyspneic with conversation. O2 @ 3L/NC, O2 Sat 93%
- Heart tones: strong, regular, telemetry – NSR
- Abdomen: firm, hypoactive bowel sounds X 4 quadrants, passing minimal flatus.
- No edema noted, 2+ pedal pulses palpable bilateral
- Thoracic incision dressing intact, no drainage noted. Dressing intact to drain site in left chest area. 30 cc serosanguinous drainage noted.
- Dressing to left leg incisions intact, no drainage noted
- Glucometer reading: 152 mg/dl – 5 Units Regular insulin administered S/C

You will be collaborating with the Charge Nurse to respond to unfolding events and implement care.

Charge Nurse/Student #2:

It is 9 AM. You will start the case scenario by reviewing Mr. Talbishi chart at the nurses' station. You are aware that Mr. Talbishi is two days post-four vessel CABG. **He has been complaining of severe pain in his left chest area near the drain insertion site. He has also been dyspneic with minimal exertion.** You will review Mr. Talbishi medical record and respond to events as they unfold.

(Charge Nurse also receives a copy of the AM assessment findings)

You will collaborate with the Primary Nurse to implement care as needed.

Spouse/Student #3:

As the scenario unfolds, Mr. Talbishi will experience some complications and new meds. Your role is to act as a concerned/nervous relative (His wife) and ask the following questions at appropriate points during the scenario:

- What happened?
- What does this mean? Will he have to go back to surgery?
- Does this mean his bypass isn't working?
- What is this drug you are hanging?
- What does it do...How does it work?
- Will he have to be on this medication forever?

Diagnostics Available:

- **Labs**
- CBC, electrolytes, glucometer checks, KFT
- X-Rays
- 12 Lead ECG
- Other _____

Post-CABG Physician Order Set:

- Low fat Low salt-diabetic diet

- Medications:
 - Ranitidine 150 mg po *2
 - Cordil 20 mg po *2
 - ASA 100 mg po *1
 - Ibuprofen 325 mg 1 – 2 tabs po q4h PRN pain
 - Sliding Scale insulin – Glucometer checks *4
 - Ceftriaxone 1g IV *2
 - Targocid 400 stat

- Incentive spirometer q 2 h while awake
- Albuterol Nebulizer q 6 h
- O2 2 – 4L saO2 \geq 93%
- VS q 4 h
- Ambulate per cardiac rehab
- HOB elevated 30 degrees at all times
- Chest hugger
- I&O q 12 h

- Daily weight
- Change dressing q 48 h
- CBC, Electrolytes, KFT in AM

Medications and Fluids:

- IV Fluids: D5LR at TKO
- Oral Meds:
 - Ranitidine 150 mg po *2
 - Cordil 20 mg po *2
 - ASA 100 mg po *1
- IV Bolus and Continuous:
 - Ceftriaxone 1g IV *2
 - Targocid 400 stat
- IM or SC
 - Sliding scale insulin

Area of Focus:

- Cardiac output
- Dysrhythmia
- Pain

Timing (Approximate)	Manikin Actions (Faculty respond via wireless mic/hidden location, manikin programmed)	Expected Interventions	Key Concepts
Primary nurse enters room to hang IV antibiotic/	Responds to questions from student Manikin:	Student introduces self, checks patient identification Asks appropriate questions about patient's	Patient identification Focused assessment

<p>Charge nurse at nurses station reviewing chart</p> <p>5 - 7 min</p>	<p>Dyspneic</p> <p>VS: T – 37.1 C, P 78, BP 120/70, R 28</p>	<p>condition.</p> <p>Administers scheduled medication safely.</p>	
<p>Alarm sounds at nurses station</p> <p>(Faculty programmed alarm, atrial fib rhythm strip placed on “cardiac monitor”)</p> <p>Next 3 minutes</p>	<p>“I don’t feel quite right”</p>	<p>Charge nurse/Student #2 responds to alarm, interprets dysrhythmia, goes to assess patient</p>	<p>Identification of dysrhythmia</p> <p>Therapeutic communication with patient, family, team</p>
<p>Charge nurse and primary nurse consult</p> <p>Next 5 – 7 minutes</p>	<p>Responds to questions</p> <p>Wife becomes agitated/anxious, asks questions about what is happening</p>	<p>Students should perform focused assessment, obtain VS</p> <p>Notify physician using SBAR (uses telephone at nurses station)</p> <p>Receives new orders from physician (faculty member acting as physician):</p> <p>Initiate Amiodarone drip. Give a loading dose of 150 mg in 10 minutes followed by a drip at 1 mg/minute.</p>	<p>Recognition of common complication</p> <p>Therapeutic communication</p> <p>Use of SBAR</p> <p>Safe documentation of new orders</p>

<p>Primary contacts pharmacy regarding new orders</p> <p>Next 5 minutes</p>	<p>Responds to questions</p> <p>Wife asking multiple questions about what is happening/</p> <p>Anxious</p>	<p>Educates patient and spouse regarding atrial fib, new medication</p>	<p>Therapeutic communication</p> <p>Patient teaching</p>
<p>Primary nurse prepares to hang Amiodarone drip.</p> <p>Consults with charge nurse as needed.</p> <p>Next 10 – 15 minutes</p>	<p>Patient and his wife ask questions regarding afib, new med</p>	<p>Researches new medication</p> <p>Recognizes drug-drug incompatibility and need for separate IV site</p> <p>Calculates drip rate correctly</p> <p>Performs appropriate assessment during administration of drug</p> <p>Answers questions regarding afib, new medication</p>	<p>Medication safety</p> <p>Communication</p>

Debriefing/Guided Reflection Questions for This Simulation

Debrief /Guided Reflection Time: 30 minutes

1. How did you feel throughout the simulation experience?
2. Describe the objectives you were able to achieve?
3. Which ones were you unable to achieve (if any)?
4. Did you have the knowledge and skills to meet the objectives?
5. Were you satisfied with your ability to work through the simulation?
6. How was SBAR utilized in the simulation? If not implemented, how should it have been used in this situation?
7. To Observer: What areas of strength did you note? How did participants react to unexpected events? Could the nurses have handled any aspects of the simulation differently?
8. To Family Member: How did you feel during the simulation? Did you feel included? Receive information as needed?
9. How were the patient's values and concerns addressed?
10. How were medication administration safety standards implemented in this simulation? Were any safety issues identified? If so, what could have been done to prevent them?
11. Describe the communication that occurred during the simulation. How could communication between team members and between team members and the client have been improved?
12. If you were able to do this again, how could you have handled the situation differently?
13. What did the group do well?
14. What did the team identify as the primary concerns during the simulation?
15. What were the key assessments and interventions?
16. Is there anything else you would like to discuss?

Psychomotor Skills required prior to simulation:

- Adult Post-Surgical Assessment
- IV Medication Administration
- Identify Common Dysrhythmias
- Communication

Cognitive Activities required prior to Simulation:

- Physical Assessment
- Focused Cardiac Assessment

- Communicating with Patients, significant others
- Communicating with members of the healthcare team
- Patient/significant others teaching
- Dosage calculation
- Assurance of patient safety

Props/Equipment Required:

- Fluids – D5LR @ TKO on pump
- Incentive Spirometer at bedside
- IV Start kit – supply area
- IV tubing – supply area
- IV pump - bedside
- Medication Cart – Nurses Station
- Nurse’s Station
- O2 Delivery Device - NC
- Clothing for student in role of patient’s spouse
- Labels for Patient medications
- Patient Medical Record with completed forms (MAR, lab results, physician orders, patient assessment forms)
- Other: Nurses station setting with laptop or other prop representing cardiac monitor, telephone, patient chart, paper/pens and other supplies to simulate nurses station

Mode for Simulation (manual or programmed):

Low-fidelity manikin used. Faculty played role of patient and physician using wireless microphone from hidden location.

Equipment needed to be attached to manikin:

- IV tubing with primary line D5LR @ TKO Fluids running at _____ ml/hr
- Foley Catheter 100 ml/hr urine output
- IV with Ceftriaxone 1g at 50 ml *2
- O2 3 L/m
- ID Band
- Position supine HOB elevated 30 degrees
- Pulse Ox
- Other Telemetry attached _____

Documentation Forms:

- **Physician Orders**
- Admit Orders

- Flow Sheet
- Medication Administration Record
- Medication Documentation Chart
- Graphic Record
- Shift Assessment
- Triage Forms
- Code Record
- Respiratory Therapy Record
- Standing orders
- Transfer orders
- Other_____

Relevant Student Information Needed Prior to Simulation:

- Standard of care for post-CABG patients
- Understanding of common complications associated with CABG surgery

Learning Objectives:

Patient Centered Care

Knowledge: Identify common complications and priorities related to the care of a post cardiac surgery patient.

Skill: Perform targeted post-CABG assessment.

Attitude: Value the patient's health concerns.

Safety

Knowledge: Integrate understanding of universal medication safety

Strategies and utilization of SBAR (Communication module for healthcare providers. S= Situation, B= Background, A= Assessment, and R= Recommendation).

Skill: Demonstrate effective use of medication safety strategies. Demonstrate effective use of SBAR.

Attitude: Value nursing role in preventing errors.

Teamwork and Collaboration

Knowledge: Describe own strengths, limitations, and values in functioning as a member of a team. Discuss effective strategies for communicating with patient, family members, and members of health care team.

Skill: Implement therapeutic communication techniques with post-op client. Communicate with team members, adapting own style of communicating with team and for situation.

Attitude: Value the importance of adapting communication style to each unique health care situation.

6. Burn

Target Audience: Critical Care Students

Expected Running Time: 15-20 minutes

ER-Burn Unit

Setting: simulation lab

Date Created: 20/02/2016

Date Validated: 23/02/2016

Personnel Required:

Instructors

Actors

Roles primary nurse
 Secondary nurse
 Physician
 Family member: wife

Technical

Primary Objectives:

1. Describe nurse's role in wound assessment, wound cleansing, topical antibacterial therapy, wound dressing, débridement, excision, and skin grafting.
2. Describe the nurse's role in pain management, restoration of function, psychological support of the patient and family, nutritional support, pulmonary care, and patient and family education.
3. Describe the classifications of burns and the specific characteristics of superficial partial-thickness, deep partial-thickness, and full-thickness burns
4. Recognition and management of carbon monoxide poisoning.

Secondary Objectives

1. Early assessment of the airway and recognize potential for deterioration.
2. Interpret critical lab values
3. Describe the goals of fluid resuscitation and list the common formulas used for fluid resuscitation
4. Demonstrate a safe medication administration for a patient in burn
5. Identifies relevant patient history information
6. Explains physical findings and diagnostics related to patient condition

7. Implements developmentally appropriate and culturally competent nursing interventions based on patient care needs
8. Demonstrate Effective trauma team leadership in a critically injured patient scenario.
9. Identifies the need for additional support for family
10. Utilizes AIDET and SBAR when communicating

Case Narrative

Case details given to participants

Patient Description:

Mr. Khalid a 56 year-old male falls asleep at home with a lit cigarette. He sustains severe flash burns to face and 30% TBSA burn to left upper extremity and upper chest.as well as an inhalational injury. He is found confused once he reaches the ED. Miss. Khalid accompanies her husband to the ED and is tearful. She states, “I am very worried about him; he does not look well

Past medical history: Hypertension controlled with medication. He has had no past surgeries or recent illnesses

Allergies: NKDA

Medication: Hydrochlorothiazide 25 mg tab once daily, Amlodipine 5 mg tab once daily. He does not use illicit drugs and rarely drinks alcohol

Social History: Sedentary job- administrative assistant x 35yrs. he has good friends and never has been in trouble with the law.

Family Hx: Mother: died. Father: died at < 55 y/o, MI

General: confused

HEENT– singed nasal hair, black soot in the nose and mouth and upper extremities

Cardiac – No CAD, MI, cholesterol; No palpitations, no syncope; HTN x 7 years; No murmur

PULM: SOB; Her breath sounds are present bilaterally, but she is wheezing, and her sputum has dark carbon present., significant low oxygen saturation by pulse oximetry (SpO2) of 88% and hoarse voice during initial evaluation .no Hx of TB, Bronchitis, No smoking Hx, No asthma, COPD, or emphysema

GI: NG tube contains dark yellow-green liquid. No gallbladder or liver disease.

GU: abdomen soft, non-tender, non-distended, normal active bowel sounds in 4 quadrants

PV: The pulses are difficult to palpate as his extremities are edematous

Heme: No anemia or history of blood transfusions

Endocrine: no hot or cold intolerance; last PCP visit was told his glucose was normal.

Neuro: a Glasgow Coma Scale (GCS) score of 15 on arrival

Case details given to participants (can be given freely or must be asked for by participants)

VS: HR 136, BP 85/50, O₂ 88%, RR 14, (T) is 96.3°F

General: intubated, sedated with occasional agitation on stimulation; Richmond Agitation Sedation Scale (RASS) score = -2

HEENT: superficial flash burns to face and ears, Pupils equal, round, and reactive to light and accommodation (PERLLA), no icteric sclera, unable to assess oral cavity due to presence of endotracheal tube, dry and mild swollen lips

Neck: neck supple, no lymphadenopathy, no mass/carotid bruit,

Cardiac – Blood pressure (BP) is 85/50, heart rate (HR) is 136 (sinus tachycardia). S1/S2 with regular rate and rhythm, no murmurs/rubs/gallops.

Pulmonary: course bilateral breath sounds on SIMV ventilator mode with 70% FiO₂, peak inspiratory pressure (PIP) = 19 centimeter of water pressure (cmH₂O)

GI: Foley catheter has burgundy-colored urine. Since the Foley catheter is inserted 2 hours ago, it has managed to drain a total of 150cc urine output.

Ext: extremities are edematous; Palpable 2+ bilateral radial pulses, 2+ pulses bilateral lower extremities

Neuro: GCS 8T with Eye opening (E) = 3, Verbal response (V) = Endotracheal tube (T), Motor response (M) = 5

Skin: left arm is erythematous and has brisk capillary refill and blisters .30% TBSA superficial partial-thickness burn to left upper extremity, superficial burn to upper chest, superficial facial burns anteriorly with sloughing of skin as well as ears temperature (T) is 96.3°F.

7. Acute Respiratory Distress Syndrome

Topic: Caring for specific problems/issues of ARDS patients

Areas of Focus

- Refractory hypoxemia
- Prevention of *barotraumas*, *volutrauma*, *biotrauma* and *atelectrauma*..
- Protective ventilation

Expected Simulation Run Time: 60 minutes

Debrief /Guided Reflection Time: 60 minutes

CHIEF COMPLAINT

“Shortness of breath and confusion”

HISTORY OF PRESENT ILLNESS Fifty-five-year-old man recently diagnosed by primary care physician with influenza A and did not fill prescription for Tamiflu. Presented to the emergency department (ED) accompanied by spouse with worsening shortness of breath, fever, cough with green sputum, and new onset altered mental status. Primary assessment revealed oxygen saturation of 61% on room air. Respirations were labored with abdominal accessory muscle use. Respiratory status continued to deteriorate in the ED despite the use of BiPap and intubation with mechanical ventilation was required. Intubation attempted by ED physician without success. A Combi-tube was placed and anesthesiology was consulted to replace it with a traditional endotracheal tube. After intubation the patient became hypotensive. A Levophed drip was initiated to keep the mean arterial pressure greater than 70 mm Hg. Once hemodynamically stable the patient was admitted to the intensive care unit (ICU) for continued management. Height—72 inches, weight—90 kilograms .

PAST MEDICAL AND SURGICAL HISTORY

- Gout—Diagnosed in 1998
- Hypertension—Diagnosed in 2009
- Hyperlipidemia—Diagnosed in 2009
- No history of surgical procedures
- Has not been on any prescribed medication regimens

- Denied any history of smoking or intravenous drug abuse; drinks approximately 2 alcoholic beverages per week.

ROS:This information can be provided to the student or can be withheld or the student can be required to ask questions and the instructor provides the info**.**

CURRENT HOSPITAL MEDICATIONS

- Levophed infusion at 0.4 µg/kg/min intravenous (IV)
- Propofol infusion at 55 µg/kg/min IV
- Sodium chloride 0.9% infusion at 125 mL/h IV
- Protonix 40 mg IV daily
- Lovenox 40 mg subcutaneous daily
- Azithromycin 500 mg IV daily
- Rocephin 1 gram IV daily
- ICU hyperglycemia protocol (regular insulin sliding scale)
- Bronchodilator therapy administration

ALLERGIES

No known drug allergies. No known food allergies.

SOCIAL AND FAMILY HISTORY

Married for 28 years with one son (age 24 years). Employed as a teacher. Both parents are living and reported to be in good health. Both diagnosed with hypertension treated with medication. One brother and one sister both reported to have no known medical problems. Son is reported to be in good health.

PE: **Students can be given this information or students can be asked and the instructor can provide the information based on their requests**

REVIEW OF SYSTEMS Patient orally intubated at the time of interview and examination. Information was gathered from the spouse and from the patient's chart.

Skin and hair

Denies skin rashes or lesions, pruritis, bruising, history of skin cancer, changes in moles, or changes in his hair or nails. Denied any jaundice.

Head

Denies any trauma, masses, tenderness, dizziness, headache, or history of seizures

Ears

Denies any recent changes in hearing, no ear pain, tinnitus, discharge from the ear, or history of vertigo. **Eyes**

Denies any photophobia, visual field changes, blurred vision, diplopia, spots, floaters, itching or discharge from the eyes, dry eyes or excessive tearing, cataracts, or glaucoma.

Nose

Denies any nasal discomfort, nosebleeds, frequent colds, sinus trouble, or nasal congestion. Positive rhinorrhea for the last 10 days.

Mouth and throat

Denies any problems with bleeding or swollen gums, oral pain, frequent sore throats, vocal changes, loose or missing teeth.

Neck Denies any neck pain or discomfort, noticeable lumps or swollen glands. Denies any difficulty with swallowing.

Chest

Denies any wheezing or hemoptysis. *Complains of increased dyspnea and cough with increased green sputum production 2 days prior to admission.*

Heart

Denies any chest pain or chest pressure. Denies any palpitations or known heart murmurs. *Complains of weakness for 10 days prior to arrival.*

Circulation

Denies any numbness, tingling, cold extremities, or prolonged wound healing. Denies any history of claudication or lower extremity edema.

Abdomen

Denies any problems with hepatitis, gallstones, heartburn, or hemorrhoids. Denies any abdominal pain, nausea, vomiting, constipation, or diarrhea.

Urinary system

Denies any history of urinary burning or frequency, denies any nocturia, polyuria, hematuria, incontinence, or frequent bladder or kidney infections. ***Reports recent decrease in normal urinary output because of decreased oral intake.***

Neurological

Spouse reports ***recent change in mental status over last 2 days***. States patient is “not making any sense and is saying inappropriate things.” Denies any dizziness, paresthesias, or focal weakness. **General/constitutional** Visual appearance congruent with stated age. ***Recent decreased appetite*** is reported. ***Complains of fever, chills, or night sweats for 3 days prior to admission***. Denies any recent unexpected changes in weight.

PE: **Students can be given this information or students can be asked what items they would include in their physical assessment and the instructor can provide the information based on their requests**

FIRST ENCOUNTER---HOSPITAL DAY 2 General examination Vital Signs: Temperature 37.2°C, pulse- 93 beats per minute, respirations-16 breaths per minute, blood pressure 89/50, oxygen saturation-86%. Orally intubated on assistcontrol mode with a ventilatory rate of 18, tidal volume of 700 mL, PEEP + 10, and FIO₂ of 100%. This patient presented with clinical manifestations of ARDS including

new-onset shortness of breath, bilateral pulmonary infiltrates on chest radiography, and a calculated Pao₂/Fio₂ ratio of 34.

CXR: Endotracheal tube tip located 2 cm above the carina. Interval worsening perihilar air space opacity suggestive of worsening ARDS. No pneumothorax or pleural effusion.

****Based on the above information, the students can be asked to identify the diagnosis of ARDS or provide it to them. Priorities of care can then be discussed****

1. **Ask the student to draw blood gas from the arterial line of the patient**
2. **Ask students to interpret of blood gas results**
3. **Ask the students what are the possible changes that can be performed on the mechanical ventilation settings**
4. **Ask the students of the suggestion of protective ventilation, what does it mean and why**
5. **Ask the student what does it mean with refractory hypoxemia**

Table 1. Laboratory and Diagnostic Review

Encounter 1 ^a	Encounter 2 ^a	Normal Values
White Blood Cell Count—10.2 kg/mm ³	White Blood Cell Count—16.8 kg/mm³	4.0-10 kg/mm ³
Hemoglobin—15.1 gm/dL	Hemoglobin—12.1 gm/dL	13.0-16.8 gm/dL
Hematocrit—44.6%	Hematocrit—36.2%	40%-50%
Platelet count—325 kg/mm³	Platelet count—292 kg/mm ³	150-430 kg/mm ³
Sodium—143 mEq/L	Sodium—138 mEq/L	135-148 mEq/L
Potassium—3.9 mEq/L	Potassium—5.0 mEq/L	3.5-5.5 mEq/L
Chloride—97 mEq/L	Chloride—101 mEq/L	98-106 mEq/L
Carbon dioxide—30 mEq/L	Carbon dioxide—29 mEq/L	24-32 mEq/L
Blood urea nitrogen—42 mg/dL	Blood urea nitrogen—49 mg/dL	10-26 mg/dL
Creatinine—2.2 mg/dL	Creatinine—5.87 mg/dL	0.5-1.2 mg/dL
Blood glucose—151 mg/dL	Blood glucose—124 mg/dL	70-110 mg/dL
Arterial pH—7.42	Arterial pH—7.19	7.35-7.45
Arterial Pco₂—41 mm Hg	Arterial Pco₂—49 mmHg	35-45 mm Hg
Arterial PO ₂ —34 mm Hg	Arterial Po₂—61 mm Hg	80-90 mm Hg
Arterial bicarbonate—26 mmol/L	Arterial bicarbonate—20 mmol/L	21-29 mmol/L
CK-MB—2.5 ng/mL		0.0-4.9 ng/mL
Troponin I—<0.15 ng/mL		0.00-0.15 ng/mL
Brain-natriuretic peptide—18 pg/mL		0-100 pg/mL
Prothrombin time—10.4 seconds		9.8-12.0 seconds
Partial thromboplastin time—29.6		24-33.2 seconds

LABORATORY DATA: (See Table 1.- Encounter 1) DIAGNOSTIC IMPRESSIONS

Working diagnosis Acute respiratory distress syndrome (ARDS).

****Based on the above diagnose, the students can be asked to identify signs and symptoms of ARDS and Calculating a ratio of (PaO₂/FIO₂)**

The use of lower tidal volume was found to be efficacious in mortality reduction. The primary goal in management of this patient included optimizing oxygenation by increasing the PEEP and prevention of ALI with lower tidal volumes. Ventilator settings were adjusted in the ICU immediately following initial evaluation.

Add Avelox 400 mg intravenous (IV) every 24 hours,

add clindamycin 600 mg IV every 8 hours, and

increase Rocephin to 2 grams IV every 24 hours grams IV every 24 hours

SECOND ENCOUNTER--- Subjective data Remains critically ill. Orally intubated on mechanical ventilation.

Oxygen saturations remain less than 86%.

Objective data Vital Signs: Temperature-38.4°C, pulse- 102 beats per minute, respirations-20 breaths per minute, blood pressure-101/52.

Orally intubated on assistcontrol mode with a ventilatory rate of 20, tidal volume of 540 mL, PEEP + 14, and FIO2 of 100%,

Despite optimal medical therapy, the patient failed conventional treatment, and without further intervention death was eminent. After consulting cardiovascular surgery, available therapy options were discussed with the patient's spouse and the decision was made to place the patient on ECMO as salvage therapy.

CONTINUITY OF CARE. The patient was taken to the operating room on hospital day 4 and ECMO was initiated. Therapy continued for a total of 6 days, and on hospital day 10 the patient returned to the operating room for removal of ECMO and insertion of a percutaneous tracheostomy and percutaneous endoscopic gastrostomy (PEG) tube placement.

The patient continued to make marked improvements following removal of ECMO and was weaned from the ventilator on hospital day 18.

Physical therapy, occupational therapy, and speech therapy were consulted.

On hospital day 21, the patient was discharged from the ICU, and on hospital day 25 transferred to a long-term acute care (LTAC) facility for continued physical and occupational therapy.

The patient remained in LTAC for 2 weeks following transfer from the acute care setting. The patient was subsequently discharged to his home with no physical or cognitive deficits noted. Since his discharge from LTAC, the patient has returned to work and has no limitations (physical or cognitive).

COMPREHENSIVE LONG-TERM CARE The patient made a full recovery and requires no long-term physical or occupational therapy. A previous history of hypertension and hyperlipidemia will need to be addressed and followed closely by his primary care physician.

Review of the patient's discharge profile from the LTAC identified that he was discharged on Zocor (simvastatin) 20 mg by mouth daily for hyperlipidemia and lisinopril 20 mg by mouth daily for hypertension.

Annual vaccination is the most effective method for preventing influenza. This patient has no contraindications for vaccination; therefore, annual influenza vaccination is recommended.

The patient will follow-up on a regular basis with his primary care physician and cardiologist following discharge from LTAC. Adherence to the prescribed medication regimen will need to be addressed at each follow-up visit to ensure compliance.

****Based on the above information, the students can be asked how the patient will be follow up or the instructor can provide the information based on their requests****

Discuss how the QSEN Competencies can apply in this case:

Patient centered care: - focus on getting him to the ICU, admitted, mechanical ventilation, IV fluids & medications; educating the patient and family about his illness.

Teamwork/Collaboration – How important it is to work together to get this patient’s orders started and to communicate with doctor about the development of his disease and patient’s response to treatment.

EBP – Care provided is Evidence based

Safety – close monitoring of patient’s status and utilizing of protective ventilation and blood gas monitoring to assure patient doesn’t not expose to barotraumas, volutrauma, atelectotrauma and biotrauma

Quality improvement – How important it is to provide quality care and discuss where quality issues could arise from – providing high FiO₂, high peak inspiratory pressure to the patient; inaccurate or incorrectly documenting lab values, doses, patient responses could result in hurting a patient. Utilizing protective ventilation promotes safety of the patient and good quality of care

Informatics – If the orders are entered into an electronic medical record system, the pharmacy can deliver accurate medications, no issue with reading the orders, accurate administration and calculation of medications should result and the dates/times/doses of meds can be accurately recorded and reviewed.

Debriefing/Guided Reflection Questions for this simulation

- Describe the objectives you were able to achieve?
- Which ones were you unable to achieve (if any)?
- Did you have the knowledge and skills to meet the objectives?
- Were you satisfied with your ability to work through the simulation?

To Observer:

- What areas of strength did you note?
- Could the nurses have handled any aspects of the simulation differently?

To Family Member:

- How did you feel during the simulation? Did you feel included? Receive information as needed?
- How were the patient's values and concerns addressed?
- How was the setting of mechanical ventilation safety standards implemented in this simulation?
- Were any safety issues identified? If so, what could have been done to prevent them?
- Describe the communication that occurred during the simulation. How could communication between team members and between team members and the client have been improved?
- If you were able to do this again, how could you have handled the situation differently?
- What did the group do well?
- Is there anything else you would like to discuss?

8. Penetrating Chest Injury; Tension Pneumothorax

Target Audience: nurses' students in nursing lab

Learning Objectives or Assessment Objectives:

1. To demonstrate an appropriate primary assessment of an adolescent trauma victim.
2. To obtain appropriate laboratory and radiology studies.
3. To recognize and treat decompensation due to tension pneumothorax with chest injury.
4. To avoid premature closure and continue to evaluate all possible etiologies for patient condition.
5. To know the clinical findings and appropriate management of tension pneumothorax

Critical Actions Checklist

- Assign roles prior to arrival of trauma patient
- Perform appropriate primary assessment of adolescent trauma victim
- Obtain IV access, administer oxygen, and connect patient to continuous cardiorespiratory monitoring
- Perform continuous hemodynamic status monitoring
- Obtain appropriate labs and imaging
- Correctly initiate PALS resuscitation
- Recognize ongoing tension pneumothorax based on exam findings and patient presentation
- Initiate appropriate management (needle decompression); find landmarks
- Perform appropriate secondary assessment of adolescent trauma victim

Environment

- a. Lab Set up – Trauma Bay
- b. Manikin Set Up i. Adolescent/Adult type manikin with monitor available
- c. IV access: L arm peripheral IV
- d. Decompression needle (18 gauge)
- e. Thoracostomy tube
- f. Chest dressing set tray
- g. Monitor, Oxygen saturation probe

Actors

a. Roles –3 Nurses

b. Action Role –nurse may assist with obtaining physical exam findings and administering medications:

i. Prompt team to obtain imaging and/or labs if they neglect to do this after obtaining history. Notify them that certain imaging orders may take time to come back.

ii. PE Findings 1: “His neck veins look distended”

2: “Cap refill is >3 seconds,” 3.“chest expansion doesn’t look like it did before”

4.Has stridor in left lung.

iii. Case Narrative (describes what the learner will experience) a. Scenario Background Given to Participants i. Pre-brief Information: Notify learners of capabilities/limitations and simulation options, including obtaining labs and imaging. Acknowledge that some events (labs, imaging) may happen in compressed time compared to reality. Inform group that labs and imaging data may change in the course of the simulation.

Continue with assessment:

- a. Past medical history: unknown
- b. Meds and allergies: patient denies any allergies
- c. Family/social history: unknown
- d. Scenario conditions initially
- e. History patient gives: see vocalizations below
- f. Patients initial exam: i. Gen: patient in distress, airway intact, breathing spontaneously and deeply
- g. Vitals: See below
- h. HEENT: normocephalic, PERRL,no JVD .big left chest wound/gunshot
- i. Resp: abnormal breath sounds
- j. CV: tachycardia with no m/r/g
- k. Extremities: no gross deformities, withdraws to pain
- l. Neuro: GCS 15, localizes painful stimuli

Scenario branch points

Baseline				Time: 0 - 2 min.			Sounds			
HR	Rhyt hm	BP	O2 Sat	RR	Pulse s	Tem p	Eyes	Lung	Hear t	ll
110	Sinus	138/8	97	23	Norm	98.8	PER	abnor	Norm	

		6			al		RL	mal	al	
<p>Patient vocalizations: Patient should say “Groans...” “owww man, my chest.” “Everything after the shot was a blur and I blacked out.” “My chest hurts bad.” If chest wall is palpated, “OUCH!”</p>										
<p>Expected learner actions: Perform primary assessment, attempt focused H&P from patient, monitor vitals. Appropriate steps in management should include:</p> <ol style="list-style-type: none"> 1- Identify team members and communicate the known facts about the trauma patient. Correctly initiate PALS resuscitation 2- verbalize advance plans with anticipation of potential for thoracic, mediastinal, and abdominal injury (plan for ultrasound, chest tubes +/- thoracotomy tray, imaging personnel), massive blood loss (alert blood bank, alerts OR and surgery) 3- Apply appropriate monitoring equipment including O2 saturation probe, cardiac monitor, BP cuff. 4. Establish appropriate IV access. 5. Critical actions checklist 6. Perform appropriate primary assessment of adolescent trauma victim 7. Perform continuous hemodynamic status monitoring 8. Obtain appropriate labs and imaging 9. Recognize signs of tension pneumothorax causing obstructive shock. 10. Describe needle thoracostomy. 11. Re-evaluate the patient and recognize ongoing respiratory distress symptoms. 12. Describe chest tube insertion and identify anatomical position. 13. Complete the systematic review of the patient looking for any associated injuries (free fluid in the abdomen, pericardial effusion). 14. Determine an appropriate disposition for the patient and focus on the need of cardiac& thoracic surgery (manikin) 										

9. Hip Fracture

Case Presentation:

Mr. L is a 25 yrs old male athlete who presents to the ED after a motor vehicle accident, with suspected hip fracture. He has severe pain on mobilization and he is on a board with his neck fixed with a neck collar. His GCS scale is 15/15.

History:

The patient has no known illnesses or any past medical or surgical history. He is taking no drugs nor has he visited a physician before this accident.

The students should now do the ABCD survey on the patient.

ABCD survey - the results were:

A: His airway is open and clear. He is on a neck collar, however. He is awake and he is verbalizing severe pelvic pain with intensity over 8/10.

B: He is breathing normally. Bilaterally equal air entry with clear lung sounds. His RR is 18 bpm. He is on a Nonbreathing mask with 12 liters/m of Oxygen. There are no chest wall abnormalities or injuries. He doesn't look cyanosed and his Spo2 is 88% on o2.

C: His pulses are good on both sides of the arms and femoral areas. His HR is 130bpm. His BP is 95/50 mmHg.

2 large bore cannulas were applied and the patient is started on NS IV solutions.

D: his GCS is 15/15

E: Externally rotated lower extremities is noted. His Temperature is 36.3 degrees Celsius.

Equally reactive pupils on both sides.

His family is notified and pain is controlled with 3mg Morphine IV and pain intensity was 3/10.

Now a thorough physical examination is being done...and the results are:

Lungs and heart are free. No added sounds. Equal air entry on both lungs.

Tenderness to palpation is noted in the lower abdominal quadrants without abdominal distension. A focused assessment with sonography in the emergency ward is performed simultaneously and is negative for any free fluid.

Blood is noted at the penile meatus along with scrotal edema and ecchymosis, so a urinary catheter can't be inserted until a retrograde urethrogram (RUG) is performed to prevent further injury and/or misplacement of the urinary catheter.

DRE (digital rectal examination) reveals a high-riding prostate without rectal blood.

No other exam findings are abnormal.

Mr. L 's chest X-ray is normal but pelvic X-rays reveal an open-book pelvic fracture with a pubic symphysis widening of 4.5 cm (An open-book pelvic fracture is a separation of the right and left side of the pelvis)

The RUG (retrograde urethrogram) confirms transection of the urethra and a urologist is consulted for insertion of a suprapubic catheter.

Treatment plan

Mr. L 's BP remains at 96/62 mm Hg. The decision is made to perform a CT scan of the head, cervical and lumbar, spine, chest, abdomen, and pelvis. The CT scan reveals a retroperitoneal hemorrhage with an open-book pelvic fracture. Cystography shows the bladder to be intact. The physician orders routine laboratory tests (CBC, electrolytes, LFT and RFT, ABGs , PT and PTT) ECG and x-rays are also done.

Upon Mr. L 's return to the surgical ward his BP drops to 80/55 mm Hg and his heart rate increases to 140 despite infusion of 2 L of a crystalloid solution. Two units of type O-negative blood are administered and a stat consult to IR is obtained for suspected pelvic hemorrhage.

Nursing interventions include continuous observations for cardiac and respiratory status, hemodynamic status. Patient is reassured about his medical and nursing plans and his family and approached for reassurance and support.

The orthopedic surgeon evaluates Mr. L and places an anterior external fixator. Definitive open reduction and internal fixation of the pelvic fracture will occur after Mr. L is Hemodynamically stable and the risk of pelvic bleeding decreases.

Nurses should pay attention to:

Monitor the patient while transferring him to different wards.

Not to rotate the patient.

Keep good pain control.

Keep the family informed and in close contact with their beloved injured.

Fully document all examinations, tests, laboratory works and procedures.

(Should also have good knowledge of different tests, their indications and contraindications as well as nursing precautions for every test or procedure).

Annex 9: Additional thoughts on how to introduce QSEN Competencies through the curriculum

For each system (doesn't have to be every lecture, but at least for each body system), the lecture could be structured like this:

- Epidemiology
- Pathophysiology
- Signs and Symptoms
- Assessment – history and physical exam
- Diagnostic tests and results
- Management/Nurses Role – Patient centered care and evidence based practice can be discussed during this section
- Management of the patient should include discussion of opportunities for collaboration and how important teamwork is to restoring the patient's health.
- Quality improvement can be covered about how to reduce complications – this can be done specific to the disease or related to being in an ICU – reducing infection rates, reducing length of stay, reducing length of mechanical ventilation, reduce ICU days, etc.
- Safety issues – discussing how to maintain a safe environment for the patient and for care providers. Discuss the role of the nurse in checking orders and questioning if unsure of it being correct or it doesn't make sense. Having the responsibility to review and question and not blindly following orders.
- Informatics – if an electronic medical record is used – can discuss how important to accurately represent patient information within the record so that the data submitted collectively can be queried and studied. Could also discuss which data the students think is worth studying.

Another idea is to give students an assignment to identify for each QSEN competency – how it is involved in the care of patients with certain diseases and disorders.

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