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Rescuing A Patient In Deteriorating Situations (RAPIDS) Simulation

A Learning Guide

CONTENTS

A. Introduction

There has been an increased in the acuity and dependency of patients being cared by the general ward nurses. This presents a major challenge to the ward nurses and demands them to exercise clinical decision making when caring for critically ill. Hence, the high acuity in patient care has made training in acute care and patient safety a priority for nursing education.

Studies have shown that the majority of cardiac and respiratory arrests were preceded by observable warning signs that indicated the deterioration of the patient's condition (Goldhill et al., 1999 & McQuillian et al 1998). However, these warning signs and symptoms were frequently not detected and managed (Hillman, et al 2002) which worsens morbidity and mortality (Goldhill and McNarry, 2004). The early recognition and treatment of these signs may prevent the necessity of performing cardio-pulmonary resuscitation and for ICU admission (McArthur, 2001). Gibson (1997) stated that the ward nurses, often the first person encountered patient's clinical deterioration, are in the best position to provide early recognition and intervention. Thus, the emphasis should be on training the nurses to acquire the skills of assessing the patient to identify those who are deteriorating, utilize knowledge to evaluate the assessment data, and notify the doctor promptly. Also, as nurses are often the first to respond to an in-hospital cardiac arrest, they must be familiar to the sequence of actions for starting in-hospital resuscitation.

A series of simulation scenarios related to physiological signs of deterioration is incorporated into the clinical decision making module to facilitate the development of students' clinical decision making skills in assessing and managing patients with acute medical emergencies.

B. Program Outline

General Objectives

At the end of the simulation program, the students will be able to:

1) Demonstrate a systematic approach using ABCDE framework to the clinical assessment and timely management of the acutely ill patients.
2) Demonstrate effective communication using SBAR tool.
3) Demonstrate a systematic approach to assess and manage ward patient with cardiopulmonary arrest.

Learning Contents

The course contents consist of a list of topics (See Table below) related to physiological signs of deterioration. Clinical scenarios associated with acute deteriorating conditions will be used for the simulation. All these case scenarios utilized the same clinical case history of an elderly patient with multiple medical conditions and co-morbidities. A series of clinical events associated with physiological signs of deterioration occurs at different phases of the patient's hospitalization.

Topics Signs of physiological deterioration:	**STATIONS**			
	Station A	***Station B***	**Station C**	***Station D***
	3RD DOA Scenario A1 & A2	*6th DOA Scenario B2 & B3*	*10th DOA* Scenario C1 & C2	*12th DOA* Scenario C1 & C2
Airway obstruction	√			√
Breathlessness	√			√
Hypotension		√		√
Tachycardia		√		√
Oliguria		√		√
Altered consciousness			√	√
Abnormal temperature				√

DOA = Day of Admission

Learning Tools

The simulation scenarios were developed to model situations that lead learners to use ABCDE (Airway, Breathing, Circulation, Disability & Expose/Examine) mnemonics as a systematic approach to assess and manage “at risk patient”, and to apply SBAR (Situation, background, Assessment & Recommendation) mnemonics to report about patient’s deterioration.

ABCDE				
Airway	**Breathing**	**Circulation**	**Disability**	**Expose/ Examine**

SBAR			
Situation	**Background**	**Assessment**	**Recommendation**

Simulation Schedule

The learners will be scheduled across the semester to undertake the simulation scenarios.

WEEK	STATIONS / TOPICS	GROUP	STUDY GUIDE TOPICs
2	Station A: Care of a patient with ***airway obstruction and breathlessness***	1A, 2A, 3A, 4A, 5A, 6A, 7A,	1 & 2
	Station B: Care of a patient with ***hypotension, tachycardia, oliguria & chest pain***		3 & 4
3	Station C: Care of a patient with ***altered consciousness***		5
	Station D: Care of a patient with airway obstruction, breathlessness, ***hypotension, tachycardia, oliguria altered consciousness & abnormal temperature***		6
4	Station A: Care of a patient with ***airway obstruction and breathlessness***	1B, 2B, 3B, 4B, 5B, 6B, 7B,	1 & 2
	Station B: Care of a patient with ***hypotension, tachycardia & oliguria & chest pain***		3 & 4
5	Station C: Care of a patient with ***altered consciousness***		5
	Station D: Care of a patient with airway obstruction, breathlessness, ***hypotension, tachycardia, oliguria altered consciousness & abnormal temperature***		6
6	Revision - Facilitated Learning using Standardised Patient		
7	Revision - Facilitated Learning using e-Simulation		
8	e-Simulation		
9	e-Simulation		
10	e-Simulation		
11	**Simulation-based Assessment**	All	All

C. STUDY GUIDE

Topic 1:
Care of a Patient with Airway Obstruction

An obstructed airway is often the result of a decreasing level of loss of consciousness. Recognition and treatment of airway obstruction is essential to prevent hypoxemia that can result in hypoxic damage to the brain and other vital organs. Therefore management of the airway is the first priority.

Learning Objectives

The students will be able to:

1. List the causes of airway obstruction.
2. Describe the signs of airway obstruction.
3. Demonstrate how to assess airway obstruction.
4. Demonstrate how to manage airway obstruction.

Reading

Liaw, S.Y. (2013). e-Rapids [computer software]. Singapore: National University of Singapore. Available from http://courseware.nus.edu.sg/RAPIDS/e-simulation/

ACT Health. (2011) Airway and Breathing. In COMPASS 'Pointing you in the right direction Adult/Paediatric (pp. 29-50). Retrieved 8 August, 2012, from http://health.act.gov.au/professionals/general-information/compass/login/adult-program/

Donna, C. (2003). "GOLD" Standards for Acute Exacerbation in COPD". The Nurse Practitioner: *The American Journal of Primary Health Care*. 28(5), 26-35.

Topic 2:

Care of a Patient with Breathlessness

An individual breathing can be compromised by a lung disorder. If untreated, hypoxia and hypoxaemia can develop and can lead to cardiopulmonary arrest. It is therefore essential to recognize and manage a patient with compromised breathing.

Learning Objectives

The students will be able to:

1. Describe common causes of breathlessness.
2. Describe the signs and clinical features of breathlessness.
3. Demonstrate how to assess breathlessness.
4. Demonstrate how to manage breathlessness.

Reading

Liaw, S.Y. (2013). e-Rapids [computer software]. Singapore: National University of Singapore. Available from http://courseware.nus.edu.sg/RAPIDS/e-simulation/

ACT Health. (2011) Airway and Breathing. In COMPASS 'Pointing you in the right direction Adult/Paediatric (pp. 29-50). Retrieved 8 August, 2012, from http://health.act.gov.au/professionals/general-information/compass/login/adult-program/

Donna, C. (2003). "GOLD" Standards for Acute Exacerbation in COPD". The Nurse Practitioner: *The American Journal of Primary Health Care*, 28(5), 26-35.

Topic 3:
Care of a Patient with Hypotension and Oliguria

The symptomatic of shock is hypotension. If untreated, it can result in poor perfusion of the vital organs. The presence of oliguria is related to hypovolaemic shock and early treatment is essential to prevent the progression of acute renal failure.

Learning Objectives

The students will be able to:

1. Describe the four major classification of shock.
2. Describe the clinical features of shock.
3. Describe the signs of oliguria.
4. Demonstrate the management of hypovolemic shock.
5. Discuss fluid resuscitation.
6. Demonstrate how to set up and administer intravenous infusion.

Reading

Liaw, S.Y. (2013). e-Rapids [computer software]. Singapore: National University of Singapore. Available from http://courseware.nus.edu.sg/RAPIDS/e-simulation/

Jevon, P. (2007). Chapter 2: Treating a Patient with Airway Obstruction. In *Treating the Critically Ill Patient* (pp. 20-45).Singapore: Blackwell Publishing Ltd.

ACT Health. (2011) Circulation. In COMPASS 'Pointing you in the right direction Adult/Paediatric (pp. 51-74). Retrieved 8 August, 2012, from http://health.act.gov.au/professionals/general-information/compass/login/adult-program/

Muhlberg, A.L. & Ruth-Sahd, A (2004). Holistic Care: Treatment and interventions for hypovolemic shock secondary to hemorrhage. *Clinical Dimension*, 23(2), 55-61

Topic 4:

Care of a Patient with Pain

Pain as a 5th vital sign could indicate deterioration in the patient condition that require prompt action and investigation. The aim of this topic is to assess and manage pain in particularly chest pain.

Learning Objectives

The students will be able to:

1. Describe the common causes of pain.
2. Demonstrate the assessment of pain.
3. Demonstrate the management of chest pain.

Reading

Liaw, S.Y. (2013). e-Rapids [computer software]. Singapore: National University of Singapore. Available from http://courseware.nus.edu.sg/RAPIDS/e-simulation/

Jevon, P. (2007). Chapter 3: Treating a Patient with Compromised Breathing. In *Treating the Critically Ill Patient* (pp. 20-45).Singapore: Blackwell Publishing Ltd.

DeVon, H.A. & Ryan, C.J. (2005). Chest Pain and Associated Symptoms of Acute Coronary Syndromes. *Journal of Cardiovascular Nursing*, 20(4), 232-238.

Topic 5:

Care of a Patient with Altered Consciousness Level

Altered consciousness level can occur in a wide range of clinical conditions such as a problem with airway, breathing or circulation. If untreated, it may lead to potential fatal complications such as airway obstruction. This topic will explore the treatment of a patient with altered conscious level.

Learning Objectives

The students will be able to:

1. Describe the common causes of altered consciousness.
2. Demonstrate a systematic approach to the assessment of a patient with altered consciousness.
3. Demonstrate the management of a patient with altered consciousness.
4. Describe how to recognize and initiate treatment for diabetics emergencies.

Reading

Liaw, S.Y. (2013). e-Rapids [computer software]. Singapore: National University of Singapore. Available from http://courseware.nus.edu.sg/RAPIDS/e-simulation/

Jevon, P. (2007). Chapter 3: Treating a Patient with Hypotension. In *Treating the Critically Ill Patient* (pp. 70-45).Singapore: Blackwell Publishing Ltd.

ACT Health. (2011) Central Nervous System (CNS). In COMPASS 'Pointing you in the right direction Adult/Paediatric (pp. 75-82). Retrieved 8 August, 2012, from http://health.act.gov.au/professionals/general-information/compass/login/adult-program/

Briscoe, V.J & Davis, S.N. Hypoglycemia in Type 1 and Type 2 Diabetes: Physiology, pathophysiology, and management, *Clinical Diabetes*, 24(3),115-121.

May, K. (2009).The pathophysiology and causes of raised intracranial pressure, *British Journal of Nursing*, 18(5), 911-914.

Topic 6:

Care of a Patient with an Abnormal Temperature (Sepsis)

Many patients who are admitted to hospital suffer from the effect of sepsis. If untreated, it can cause all body systems to fail. The aim of this topic is to understand how to recognize patient with sepsis and begin early treatment to improve their surviving rates.

Learning Objectives

The students will be able to:

1. Demonstrate a systematic approach to the assessment of a patient with sepsis
2. Demonstrate the recognition and immediate treatment of a patient with sepsis

Reading

Liaw, S.Y. (2013). e-Rapids [computer software]. Singapore: National University of Singapore. Available from http://courseware.nus.edu.sg/RAPIDS/e-simulation/

McCann, J. Sepsis. In S.A.V.E M.O.R.E. Lives (pp. 43-45). Retrieved 6 September, 2009, from http://www.mpoullis.com/alert/save%20more%20lives.pdf

Dellacroce, H. (2009). Surviving sepsis: The role of the nurse. *Registered Nurse*, 72(7),16 -21.