SAFETY

simulation for medical practice

SIMULATION APPROACH FOR
EDUCATION AND TRAINING
IN EMERGENCY

Respiratory Failure
University of Foggia (UniFg)

BODY INTERACT™
VIRTUAL PATIENTS

AUTHORS

Chiara Caputo

Alessandra Morelli

Tecla Zimotti

Emanuele Ricci

Filippo Di Pierro

Lucia Distaso

Guido Gambetti

Stefania Tamburrano

Summary

Scenario Description

Learning Target

Medical:
- identify and manage respiratory failure
- manage the obese patient
- manage sedation
- decision making criteria for the choice of ventilation
- airway control

CRM:
- designate leadership
- establish role and distribute the workload
- mobilize resources
- closed-loop communication
- SBAR

Description

Where:
Emergency department

Frame conditions:
A busy day in the ED

Participants

- ED physician
- ED nurses (1-2)
- patient
- resuscitator physician

Notes:

Scenario Briefing

Briefing (everyone)	Additional Briefing (individual Positions)	Case Briefing (Roleplayers)
Male (55years) arrives by ambulance to the ED. He is conscious and collaborating, but agitated and restless. Ambulance report: - Male, 55 years - Weight: 125Kg - Height: 173 cm - Heavy smoker, 20 cigarettes/day - Orthopnea and worsening dyspnea with use of accessory muscles Vital signs: RR 30/min Sat 82% in 02 2lt/min NIV BP 135/85 mmHg HR 120r Tp 36,5°C	SP – on inquiry, you divulge: - previous heart attack; - NYHA class II; - history of OSAS; - previous hospitalization in subintensive respiratory for pneumonia and history of DVT on varicose veins lower extremities;	You are on duty in the ED, receiving the patient from the ambulance. See ambulance report

Notes:

Script SIM Nurse/Co-Instructor

List of Material

- Vital signs monitor (respiratory rate, ECG, oxygen saturations, NIV BP)
- Thermometer
- equipment for IV access
- saline
- EAB
- NIV and airway management devices
- infusion pumps
- medicines

- If EAB is required:
  pH 7,19 paO2 56 paCO2 73 HCO3 33

- If Rx chest is required:
  Diffuse thickening of the interstitial texture

Set-Up Room

- ED acute bed with vital signs monitor
- phone available

Set-Up Simulator

standardized patient
(trained person to present respiratory failure)

Notes: appropriate Tx Rx needed. Blood gas should be according to local design

Scenario Saver

How to react if the medical problem is not identified	How to react if the medical problem is identified too quickly	Other comments, material needed for savers (e.g. white coat)
If the ED doctor does not decide to start NIV immediately, but to proceed with a clinical examination and laboratory tests, saturation level drop (78%) and agitation increases. the nurse suggests to the ED physician to start ventilation or to contact the consultant	If the ED doctor decides to start a cycle of NIV, saturation increase (90%) but persists agitation, tachycardia, tachypnea and hypertension the nurse asks the doctor if it is necessary to prepare a sedative (dexmedetomidine) The learning goal is to communicate and act according to the protocol.	An experienced consultant on call arrives in the ED to ask for status. He/she suggests for airway control and intubation

Notes: Make sure to have the local protocol available and adapt the case accordingly!

Scenario End Criteria

Scenario ends when…		
The ED physician or the consultant set adequate ventilation modes and sedation		

Notes: Don't let the patient die!

General note – end the scenario saying:

"The patient is now going to be taken care of, thank you for solving the case"

Simulator Set-Up, Steering

	Phase 1 Initial status	Phase 2 Possible aggravation	Phase 3 NIV, improvement
Vitals	HR: 120bpm BP: 135/85mmHg SpO2: 82% CO2: 73 Resp. Rate: 25 Temp:36,5	-HR: 140 bpm -BP: 160/85 mmHg; -SpO2: 78 %, -Resp. Rate: 35 -Temp: 36,5°C;	-HR: 87 bpm -BP: 120/65 mmHg; -SpO2: 92 %, -Resp. Rate: 20 -Temp: 36,5°C;
Text for patient	Agitated, "can't breathe"	Fear of dying, more agitation eventually loose consciousness	
Other info			EAB: pH 7.30 paO2 70 paCO2 51,
Management during scenario		-	
Notes:			

Abstract

Learning Target:	Identify and manage respiratory failure, decision making criteria for the choice of ventilation, CRM
Description:	A 55 years male, obese, BPCO, arrives in ED with dyspnea and orthopnea, agitated and restless
Participants:	ED physician, 1-2 nurses, patient, Consultant (if requested)
Case Briefing:	
List of Material:	ED bed, Vital Signs Monitor, IV access, EAB, NIV, medication
Set-Up Room	Emergency department room
Set-Up Simulator:	SP with instructions
Scenario Saver:	Consultant
Scenario End Criteria:	The ED physician or the resuscitator physician set adequate ventilation modes and sedation
Management during Scenario:	
Other:	