SECTION I: SCENARIO OVERVIEW

Scenario Title:	Respiratory Failure (ARDS); CoVid-19	
Original Scenario Developer(s):	Anne B. Lucero, MSN, Marjorie Miller, MA, RN, CHSE	
Date - original scenario 04/20	Validation:	Pilot testing:
Estimated Scenario Time: 15 minutes	Debriefing time: 30 min	
Target group: High Acuity Training APP students, Advanced Med-surg students, new graduates		
Core case: Acute Respiratory Failure, ARDS, CoVid-19		
Brief Summary of Case: 50 year old healthy male admitted to acute care isolation on previous night following + CoVid-19 screening for fever, respiratory symptoms & increased travel risk. Patient will demonstrate signs & symptoms of respiratory deterioration during scenario. Interprofessional team expected to recognize & respond to acute deterioration, and manage patient following scope of practice, hospital, WHO guidelines. Scenario ends with hand-off report after patient receives high flow O2.		
QSEN Competencies & Team*STEPPS* Competencies		
❑ Patient Centered Care ❑ Patient Safety ❑ Teamwork and Collaboration	❑ Informatics, ❑ Quality Improvement ❑ Evidence Based Practice	

EVIDENCE BASE / REFERENCES (APA Format)
Agency protocols for PPE; Rapid Response Team Guidelines
American Heart Association Science News Modules (2020). Exploratory CoVid-19 Therapies, Protecting Medical Trainees, Training on Ventilator Management, retrieved 4/01/20 from email@heartemail.org
WHO protocols for PPE https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/health-workers
CDC Guidelines for PPE https://www.cdc.gov/coronavirus/2019-ncov/hcp/using-ppe.html

SECTION II: CURRICULUM INTEGRATION

A. SCENARIO LEARNING OBJECTIVES
Critical Learner Actions
1. Performs hand hygiene, donning/doffing PPE according to CDC protocol for CoVid-19 patient
2. Accurately prioritize interventions to improve patient respiratory status while managing patient in acute respiratory failure.
3. Communicate effectively with patient to decrease anxiety and inform about care
4. Perform interventions including Rapid Sequence Intubation/ Initial Ventilation management while consistently maintaining patient safety
5. Demonstrate teamwork and communication during emergent/stressful situations

B. PRE-SCENARIO LEARNER ACTIVITIES	
Prerequisite Competencies	
Knowledge	**Skills/ Attitudes**
❑ Procedural sedation; RSI Competency SOP	❑ Establish airway & positive pressure vent w/ BVM
❑ Pharmacology of RSI agents & specific reversal agents	❑ Procedures for verifying IV patency ❑ Safe administration of RSI agents
❑ SBAR to report deteriorating condition	❑ Management of expected & adverse effects
❑ Ventilator management	❑ Location & effective use of emergency resuscitation equipment from Code cart

SECTION III: SCENARIO SCRIPT

A. Case summary

Expanded from page 1

B. Key contextual details

Setting: critical care unit; resuscitation team

C. Scenario Cast

Patient	❑ High fidelity simulator	❑ Mid-level simulator	❑ Standardized Patient
	❑ Task trainer	❑ Hybrid (Blended simulator)	❑

Participants/Role	Brief Descriptor (Optional)	Imbedded Participant (IP) or Learner (L)
Primary Nurse	focused assessment, recognizes patient change of status, communicates SBAR to intensivist	Learner
Intensivist	Receives SBAR from nurse, prepares for RSI	IP or Learner
Respiratory Therapist	Assists Provider in RSI, Sets up Ventilator per orders	Learner

D. Patient/Client Profile					
Last name: Brown	First name: Thomas	Gender: M	Age: 50	Ht: 6'	Wt: 180
Spiritual Practice: unknown	Ethnicity: Caucasian	Language: English	Code Status: Full		

1. History, chief complaint, assessment data

Patient began feeling fatigued & unwell following return 7 days ago from a business trip to China but thought it was due to "jet lag". Reported to ED after a 2 day history of fever, cough and difficulty breathing that was "getting worse" as days passed. CoVid-19 screening positive. Patient is normally fit, jogger, has never smoked.
While in tele, patient became worse with decreasing O2 sats on high flow nasal cannula without improvement. Rapid Response called, ABG's drawn and transfer to Critical Care initiated due to rapidly deteriorating condition.

2. Assessment Data: Temp 101 ° F**.,** 38.3°C. **BP** 96/58, **HR** 145, regular rhythm, **R** 32, **O2 sats** 87-92%

Respiratory: short of breath, coughing, states "can't catch my breath"**.**

Breath sounds: coarse, diminished

Cardiovascular: no pedal edema, no calf tenderness

Neurological: disoriented, confused & slow to respond

None		Reaction:	
None		Reaction:	
Primary Medical Diagnosis	CoVid-19, pneumonia, acute respiratory failure		

3. current meds	Drug	Dose	Route	Frequency

4. Laboratory, Diagnostic Study Results (List significant labs,& diagnostic test results)

Chest x-ray: bilateral pneumonia
ABG's: pH: 7.25, paO2: 51-62, paCO2: 65, HCO3/BE: 38/-9, SaO2: 85%
Electrolytes: Na 142, K 4.2, Cl 101, HCO3: 38, Ca 10, Mg 2.4, Glucose 150, Lactate: 3,
BUN 25, Creat 1.2, GFR 68, Albumin> 4g.dL ALT 30
Hematology: Hb13.8, Hct 40.7%, Platelets 240K, WBC 12.6K D Dimer: <250 ng/mL
PT: 19.3, PTT:22, INR:1.1, Troponin1: 0.18, CK: 160 U/L, CRP: 15 mg/L

Sim Set-up card		
Patient Information	**Set-Up / Moulage**	**Medications/Equipment/Supplies**
Scenario: CoVid-19, pneumonia → respiratory failure Identifying Information (for identaband) Name: Thomas Brown DOB: 3/26/70 MR #: 123456 Physician: Julia Cosgrove, MD Allergies: None noted Code status: Full	Critical Care Unit: Isolation Room Set up per CCU Appropriate Signage (agency) outside room Outside Room: PPE station set up Code cart 2 IV sites, 2 -3 IV pumps modules Optional 500 mL NS for IVPB's Maintenance IV: D5/0.45 NS @ 70Ml/hr High Flow nasal cannula set up Ambu bag Ventilator: HEPA filter (in vent circuitry) or available in room VAP oral hygiene kits	Azithromycin 500 mg IVPB Methylprednisolone 1 Gm IVPB Albuterol 5-10 mg nebulizer **RSI meds** Lidocaine 1.0 mg/kg IVP Midazolam 0.1-0.3 mg/kg IVP Etomidate 0.3 mg/kg IVP Vecuronium 0.1- 0.3 mg/kg IVP Succinylcholine 1.0-1,5 mg/kg IVP **Ventilator Maintenance** Propofol 0.3-3.0 mg/kg IV drip Precedex 0.2-0.7 mcg/kg/hr Fentanyl 3 mcg/kg IV drip **For Ventilator Synchrony** Vecuronium 0.1 mg/kg IV drip

CASE FLOW / TRIGGERS/ SCENARIO DEVELOPMENT STATES			
Initiation of Scenario :			
Patient just arrived in the ICU Isolation bed 6, for respiratory failure secondary toCoVid-19. PPE set up outside room. ABGs are pending, preparations are underway for Intubation and mechanical ventilation			
STATE / PATIENT STATUS	**DESIRED LEARNER ACTIONS & TRIGGERS TO MOVE TO NEXT STATE**		
Baseline	**Operator**	**Learner Actions**	**Debriefing Points:**
Patient is lying in bed (HOB ↑@ 30°) ❑ struggling to breathe on high flow O2 NC, ❑ pulling at cannula ❑ SOB, dyspnea, interrupted speech, (every other word stops to breathe) ❑ Arousable, confused. *No family allowed in Hospital.*	Vital signs: BP 96/52; HR 141, RR 36; SpO2 82% on 90% HFNC (high flow nasal cannula) Pain 0/10. Skin, pale, cool, moist/ intact. Lungs: coarse, diminished **Triggers** MD arrives-gives orders o Requests results of ABG, PCXR done in Rapid Response call. o RT arrives in Critical Care Unit – communicates through doorway while donning PPE o Prepare to intubate patient.	1. Maintain PPE in isolation room 2. Wash hands, introduces self, identifies patient. 3. Focused cardiovascular and respiratory assessments. 4. ↑ oxygen delivery using high flow nasal cannula to HFNC 80% 5. Repositions HOB ↑@ 45° 6. Communicates with patient in a calm and reassuring manner, explaining next steps 7. Anticipate orders for ABG, PCXR post intubation and vent settings, possible vasoactive drip orders. 8. Notify MD of patient's condition including ABG's & chest x-ray using ISBAR. 9. Ask charge nurse or case manager to call and update family of patients move to ICU	❑ Challenges to maintaining Isolation with complicated patient, procedures, equipment ❑ Positioning options to optimize oxygenation ❑ Strategies for prioritizing interventions to improve oxygen status ❑ Compare effectiveness of different oxygen delivery devices ❑ Strategies for communicating with patient to decrease anxiety ❑ Critical factors to communicate when calling the physician ❑ SOP's for post-intubation

STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
Frame 2	**Operator**	**Learner Actions:**	**Debriefing Points:**
Patient remains in the same state as above **Information:** *Versed* *(Dose 0.1-0.3 gg/kg)* *Onset 2-5 min; duration 15-30 min)* *Succinylcholine* *(Dose 1.0-1.5 mg/kg* *Onset <1 min; duration 5-10 min)*	Patient meets criteria for invasive intubation. 1. ↓ oxygenation (PaO2 52, SpO2 82%) 2. High work of breathing 3. Altered mental status from Respiratory Failure **Triggers:** Team ready for intubation Provider arrives; directs team	1. RT arrives with ventilator; gets update & manages airway 2. Prepares patient for intubation 3. Nurse #1 calls for help from 2 nurses and assigns roles a. Nurse #1 Prepares supplies for intubation of COVID -19 patient: • High-effciency particulate air (HEPA) full face shield in addition to N 95 • Filter ETT, stylet syringe, tape, Yankauer, • wave form capnography, • oral/nasal airway, • laryngoscope functional • bag for non-disposable items. b. Nurse #2 Prepares meds for admin. after confirming IV patency c. Nurse #3 gets crash cart, leaves outside the door, and hands in supplies	❑ Role of the RT as an interprofessional team member ❑ Role of the nurse in preparing for and assisting with intubation of COVID-19 patient ❑ Describe the decision-making process and priority setting ❑ Correct drug/dose calculation ❑ Strategies for adhering to NPSG regarding labeling syringes/meds. ❑ Alternative medications to be used for pretreatment (Lidocaine, Fentanyl, Atropine), induction (Etomidate, Ketamine, Propofol, Midazolam), paralysis (Succinylcholine, Vecuronium, Rocuronium). ❑ Pharmacological effect (onset, duration) of prescribed medications

STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
Frame 3	**Operator:**	**Learner Actions:**	**Debriefing Points:**
Patient lethargic, non-responsive Shallow, slow respirations	Vital signs: BP 89/50; HR 46, RR 6; SpO2 78% on 100% BVM. **Triggers:** Afterintubation: Vital signs: BP 110/76; HR 122, RR 12-16 manual; SpO2 98% on 100% BVM.	1. Recognize patient is heading toward cardiopulmonary arrest & communicate assessment 2. Pre-oxygenate with FiO2 100% BVM (RT) 3. RN #2 performs the following: a. Administers Versed & Succinylcholine when physician is in the room 4. ****MD intubates,** 5. RT secures ETT 6. RN #1 a. Check for bilateral breath sounds b. applies ETCO2 detector, capnography a c. assures HEPA filters in place. 7. Determine effectiveness of BVM respirations. (SpO2 and chest should be rising with BVM ventilations) 8. RT Connects patient to ventilator 9. Obtains ABG 10. Obtains PCXR to confirm position.	❑ Significance of changes in patient status ❑ Signs/symptoms ↓ oxygenation; deteriorating respiratory status ❑ Strategies for decision making and priority setting for patients in respiratory distress ❑ Strategies for decision making & priority setting for patients with confirmed CoVid-19 ❑ Evaluate effectiveness of nursing interventions and post-intubation management ❑ Standard of practice for RSI per agency protocol ❑ Recall reversal agents for sedatives/anxiolytics ❑ Strategies for communicating with patient in escalating situation

STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
Frame 4	**Operator**	**Learner Actions**	**Debriefing Points**
Patient intubated, waking up from sedation, on Lung protect mechanical ventilation/ initial mode: ABG: pH – 7.28 PaO2 – 65 PaCO2 – 50 HCO3 - 24	BP 110/76; HR 122, RR 20 SpO2 86% on 80% FiO2 Vent Settings: A/C assist control (APRV if available) Rate = 20 Vt tidal Volume =490 Peep = 10 FiO2 = 80% Sedation drip infusing on pump, VAP	1. Communicates with patient and care team, MD. 2. Asks if physician called patient's daughter to update plan of care. 3. Communicates ABG results and ETT position per chest x-ray 4. Initiates new orders for continued sedation IV drip, 5. Perform RASS baseline assessment, 6. Initiate ET and oral Suction protocols, VAP vent acquired pneumonia prevention 7. Reposition pt./ comfort, 8. Con't. cardiopulmonary, and skin assessment	❑ Importance of having physician talk to family regarding treatment plan ❑ Review RASS (Richmond Agitation Sedation Scale) to set baseline prior to continuous sedation, adjust for ventilator snychrony. ❑ Discuss VAP prevention protocols, frequency, equipment available 10. Strategies of various ventilatory modes for ARDS patient (A/C, SIMV, APRV, PRVC) ❑ Importance of hourly assessment first hours of ventilation management and post intubation.
Scenario End Point: Sedation drip up, VAP measures and assessment complete			
To decrease complexity: See Scenario B from Telemetry; patient does not deteriorate			
To increase complexity: ABG results decline, corresponding VS worsen, consider addition treatments. Prone positioning, ECMO			

APPENDIX A: HEALTH CARE PROVIDER ORDERS

Patient Name: **DOB:** **Age:** **MR #:**	**Diagnosis: Acute Respiratory Failure CoVid-19** **Allergies: NKA** **Code Status: Full**

† No Known Allergies
† Allergies & Sensitivities

Date	Time	**HEALTH CARE PROVIDER ORDERS AND SIGNATURE**
	admit	Admit Telemetry monitored unit, COVID 19 Isolation precautions
		2 gm sodium, soft diet
		Continuous Sat reading, Oxygen to keep Sat > 88%
		D5 ½ NS 1000ml at 70 ml/hr
		AM Lab: CBC with Diff, CMP, Mg, PCXR, 12 lead EKG
		Azithromycin 500mg IVPB daily in 500ml NS over 3 hours
		Methylprednisolone 1 gm over 1 hour, every 6 hours times 48 hours
		Albuterol 10mg per med neb tx per RT every 8 hours PRN
	Rapid	HFNC 80-90% to keep O2 > 80%, Draw ABG, PCXR, EKG,
	later	Transfer to ICU Isolation Bed Now on monitor, prepare for Intubation and ventilation
		HFNC to keep Sat > 80, use BVM if necessary
		RSI meds-MD to administer: Midazolam 10 mg IVP, Lidocaine 80-100 mg IVP, Succinylcholine 80-100 mg IVP.
		NPO, Bed Rest, no visitors, COVID 19
	vented	Initial Vent settings: A/C assist control (APRV if available) Rate = 20 Vt tidal Volume = 490, Peep = 10, FiO2 = 80%
		Propofol 10-30 mcg/kg/min titrate to negative RASS of -1
		Fentanyl 25-50 mcg/hr drip titrate to effect PRN, additional 50 mcg dose for breakthrough pain PRN every hour
		VAP protocal every 2 hours,
		Repeat ABG in 30 minutes from intubation, and each am
		PCXR now for tube placement, and each am
		Nutrition consult