jumptrading
SIMULATION &
EDUCATION CENTER

AN OSF HEALTHCARE
AND UNIVERSITY OF ILLINOIS
COLLEGE OF MEDICINE AT PEORIA
COLLABORATION

PART TWO – SESSION MATERIALS

Session Title: CHF Exacerbation

Please indicate the type of session by checking the appropriate box:

- ☒ Case Scenario
- ☐ Skills (Procedure) Station
- ☐ Small Group Discussion
- ☐ Computer-Based Learning
- ☐ Simulation Enhanced Didactic

Original Session Date:

Version: 1.1

Revision Date:

Curriculum Title: Emergency Medicine Resident Simulations

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Dept/Institution:Emergency Services

Author 2:Click here to enter text.

Dept/Institution: Click here to enter text.

2.1 SESSION SNAPSHOT

Intended Learner Group(s):

EM1 Residents, ED Nurses

Goals:

Cognitive areas to be covered:

1. Practice evaluation of the dyspneic patient
    1. Clinical differentiation of dyspnea
        - COPD/Asthma
        - CHF
        - PE
2. Medical treatment of patients with CHF
3. Pathophysiology and clinical manifestations of diastolic vs. systolic failure
4. Work up of new-onset CHF vs. acute-on-chronic exacerbation
5. Decision-making for airway support via NIPPV vs endotracheal intubation

Learning Objectives:

1. Identifies GCS < 8 within 60 seconds of initial evaluation
2. Performs accucheck before endotracheal intubation
3. Requests scene description from EMS providers.
4. Identifies pt's chronic history of BZD use
5. Initiates overdose w0rkup per attached checklist
6. Pursues supportive care strategy; does not administer Romazicon , explains contraindication to consulting intensivist.
7. Demonstrates proper BVM and RSI technique per checklist

Session Description:

This is a case scenario set in the ED of a community hospital. Patient was found unresponsive in his apartment and brought to ED by EMS. Pt is obtunded due to BZD overdose and requires overdose workup, airway management and ICU admission to complete the case.

2.2 SESSION EQUIPMENT (P.1)

Please indicate all equipment required for this educational session. This includes any medical or educational supplies or equipment.

MANIKIN - Adult	**MANIKIN - Peds**
☐Laerdal SimMan	☐MegaCode Kid
☐SimMan Essential	☐SimJunior
☒SimMan 3G	☐SimBaby
☐SimMom	☐SimNewB
☐MegaCode Kelly	

JUMP EQUIPMENT (check all that apply)	
☐Pediatric Crash Cart	☒Adult Patient Bed
☒Adult Crash Cart	☐Isolette
☐Lifepack 20	☐Giraffe Bed/Infant Warmer
☐Gurney/Stretcher	☐Pediatric Crib

Note: *The above lists include equipment available from Jump.*
If any other items are needed for this session, please list them here and note the source.
If you would like Jump to provide disposable supplies, please provide Peoplesoft number and allow two weeks for delivery.

ITEM	**SOURCE**	**PEOPLESOFT NUMBER**	**QUANTITY**
Education RSI box	ED Educators	Click here to enter text.	1
Empty Prescription bottle		Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.

2.3 SESSION ENVIRONMENT

SIMULATION VENUES	
☐ Anatomical Skills Lab	☒Virtual ICU
☐ Innovation Lab	☐Virtual OR/Trauma Bay
☐Regional Transport Center	☐Virtual Patient Unit
☐Studio Apartment	☐Virtual Reality (Surgical Skills) Lab
☐Skills Lab	☐Workstation & Med Room
DEBRIEFING VENUES	
☐Briefing Theater	☒Debriefing Room

Room and Materials Setup

Describe in text form or insert diagram or photo here. Please note any resources to be provided from outside of Jump.

Room setup as ED room.
2x2 cart
Crash cart with airway box – needs romazicon and naloxone in med tray

2.4 SCENARIO SETUP

Documents Included

☒Scenario Setup Form
☒Standardized Participant Guide(s): 1. EMS Provider 2. ICU Consultant
☐Other: Click here to enter text.
☐**N/A** – this session does not include case scenarios

SCENARIO SETUP FORM
TITLE: MANIKIN: EST DURATION:

Patient Information: 55 yo male
CC: Unresponsive **PMHx:** unknown **Weight**: 70kg **Allergies:**
Clinical Setting:

STATE NAME	VITAL SIGNS	EXAM/ADDL MANIKIN INFO	ACTIONS DESIRED
Presenting State	*Temp:*37.0 *HR:* 110 *BP:* 90/50 *RR:* 9 *SpO2:* 96%	No verbalizations or eye opening to sternal rub.	IV O2 monitor Accucheck, Narcan AMS workup Intubation, IV fluid bolus
TRANSITIONS: **1.** If TIS > 3 min go to Aspiration **2.** If intubated, go to Stabilized **3.**If Romazicon given, go to Romazicon Given			
Aspiration – Respiratory Arrest	*HR:* 120 *BP:* 100/50 *RR:* 6 *SPO2:* 92%		Intubation
TRANSITIONS: **1.** If intubated, go to Stabilized **2.** If Romazicon given, go to Romazicon Given			
Romazicon Given	*HR:* 140 *BP:* 110/60 *RR:* 6 (or vent) *SPO2:* 92% ->84% (2min)	Seizure activity	Administer **P**ropofol, **p**henobarb or **p**entobarb
TRANSITIONS: **1.** If P drug given, go to Seizures Stopped **2.** If already intubated, and P drug given, go to Stabilized **3. If not intubated,** O2 saturations drop as seizure continues (over 2 minutes)			
Seizures Stopped	*HR:* 90 *BP:* 118/64 *RR:* 6 (or vent) *SPO2:* 94%		Intubation
TRANSITIONS: **1.** If intubated, go to Stabilized			
Intubated (Stabilized)	*HR:* 96 *BP:* 110/70 *RR:* vent *SPO2:* 96%		Admit ICU

SCENARIO SETUP FORM

TITLE: MANIKIN: EST DURATION:

Moulage: IV in place, NRB mask, Street clothes, BZD pill bottle (empty)

Multimedia: ECG, CXR1 (not intubated), CXR2 (intubated)

Embedded Roles: EMS, ICU admitting physician

STANDARDIZED PARTICIPANT GUIDE (1 of 2)
SCENARIO TITLE: BZD OVERDOSE
ROLE: EMS Provider

NAME: Cory

BACKGROUND INFO:
You and your partner were called by landlord of patient's apartment building. Landlord entered to check condition of apartment and found patient unresponsive in bed. Pt was last seen returning to apartment yesterday morning.

Your scene vitals: **37 90/50 108 10 92%** Moaned to sternal rub and opened his eyes briefly. Tried to grab at right arm (with his left) when you put in IV. (M5E2V2)
You put patient on NRB

Your partner found empty pill bottle on nightstand. (**must be solicited by trainee do not volunteer this information** – if asked about the scene, provide the pill bottle)

PMH: Unknown
Meds: Unknown
ALL: Unknown
FHx: Unknown
SHx: EtOH use. Smoker. Currently unemployed (per landlord)

ROS: Unavailable due to patient condition

ACTIONS WITHIN THE CASE:
Provide history freely with exception of pill bottle.

Physical Exam (Sim findings in bold):
VS: Per **monitor**
Gen: Undernourished male in no distress
HEENT: PERRL 3mm. Sluggish reactivity, but symmetric. No pallor. MM dry. No thyromegaly. No icterus.
CV: **Tachycardia**. **No murmurs or gallops.**
Lungs: **Bradypnea**. **Lungs CTAB.**
Abd: **Normoactive BS**. Soft
Skin: **Dry no rashes or ecchymoses**
Extremities: **No edema. Symmetric pulses.**
Rectal: Normal tone, nontender, hemoccult neg.
Neuro: **Eyes do not open to stimulation.**
GCS 6. No verbal, withdraws to painful stimuli, no eye opening. Hyporeflexic.

STANDARDIZED PARTICIPANT GUIDE (2 of 2)

SCENARIO TITLE: BZD OVERDOSE

NAME: Dr. Jones
ROLE: ICU Accepting Physician

BACKGROUND INFO:
You are on call for admissions to the ICU.

ACTIONS WITHIN THE CASE:

When resident calls to admit the patient:

1. If resident has not identified BZD as likely etiology, ask "what do you think he's on?"
2. If resident identifies the BZD overdose, suggest Romazicon. "The only reason he's intubated is because of the benzodiazepines. If you reverse him we can save the ICU bed for someone really sick".
3. Accept patient if resident explains that patient is on BZD chronically and is at high risk of seizures if romazicon given.

1.
2. 2.5 LEARNERS' SESSION HANDOUTS

3.

4. On Portal:
   1. BZD Overdose – Stimuli
   2. Clinical Pearls Handout
   3. Romazicon article (provided electronically)

5.

6.

7. 2.6 SESSION ASSESSMENT

8.

9. B	**10.** **11.** **12.** **13.** **14.** **15.** **16.** **17.**	**18.** **19.** **20.** **21.** **22.** **23.** **24.** **25.**	**26.** **27.** **28.** 29. **30.** **31.** **32.** **33.**	**34. DATE:** 35. **36. LEARNERS:**	37. 38. 39. 40. 41. **42. CORE** **43. COMP**
44. I	45.	46.	47.	48. IV O2 monitor	49. PC
	51.	52.	53.	54. Establishes IV access, orders IVF bolus	55. PC
	57.	58.	59.	60. Asks for rectal temperature	61. PC
	63.	64.	65.	66. Orders accucheck	67. PC
	69.	70.	71.	72. Elicits AMPLE history from EMS	73. PC IP
	75.	76.	77.	78. Orders Narcan	79. PC
	81.	82.	83.	84. Asks EMS about scene – medication bottles or drug paraphernalia	85. PC, IP
	87.	88.	89.	90. Estimates amount of OD by dates/qty on Rx bottle	91. SBP
	93.	94.	95.	96. *HEENT exam:* Checks pupils, gag reflex, signs of head trauma	97. PC
	99.	100.	101.	102. *Lung exam:* Hypoventilation, decreased BS	103. PC
	105.	106.	107.	108. *CV exam:* Checks pulses	109. PC
	111.	112.	113.	114. *Neuro exam*: Checks symmetry, GCS, tone, DTR	115. PC
	117.	118.	119.	120. *Gen/skin:* Assesses for evidence of trauma	121. PC
	123.	124.	125.	126. Identifies need for intubation for airway protection (GCS <8)	127. PC,MK
128. I	129.	130.	131.	132. Orders RSI drugs with correct doses *133. Meds ordered:*	135. MK

				134.		
	137.	138.	139.	140.	Suction at bedside	141. PC
	143.	144.	145.	146.	Checks ET tube balloon	147. PC
	149.	150.	151.	152.	Listens over stomach	153. PC
	155.	156.	157.	158.	Listens bilateral axilla to assess breath symmetry	159. PC
	161.	162.	163.	164.	Checks ETCO2	165. PC
	167.	168.	169.	170.	Orders confirmatory xray	171. PC
	173.	174.	175.	176.	Places NG tube	177. PC
178. W	179.	180.	181.	182.	Pursues tox/OD workup (UDS, EtOH, ASA, Acet)	183. PC
	185.	186.	187.	188.	EKG, CIEs	189. PC
	191.	192.	193.	194.	Head CT	195. PC
	197.	198.	199.	200.	CBC, CMP, ABG	201. PC
	203.	204.	205.	206.	Post-Intubation CXR	207. PC
208. T	209.	210.	211.	212.	Administers charcoal	213. PC
	215.	216.	217.	218.	Does NOT administer Romazicon	219. PC, MK
220. D	221.	222.	223.	224.	Admit to ICU	225. SBP,CS
	226.					
	227.					

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2.7 SESSION SPECIFIC REFERENCES/SOURCES

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I. Case Summary

A. Scenario Background Given to Participants (see Stimuli)

- CC: Unresponsive
- HPI: Landlord entered apartment and found pt (rent was overdue by 2 months)
- PMH: Unknown
- Meds: Ativan 1mg q4-6h **(only if got bottle from EMS)**
- Family History: Unknown
- Social History: EtOH, tobacco (per landlord)

B. Scenario Conditions Initially

- Patient initial exam:

✓ Respiratory depression – rate 6-8
✓ GCS E1+M4+V1 = 6
✓ SaO2 90-92% on room air.
✓ Hypotensive

- Patient pathophysiology

✓ BZD overdose – respiratory depression, hypotension
✓ Chronic EtOH and BZD use

C. Scenario Branch Points

- If not intubated for airway protection –will go into respiratory arrest
- If Romazicon given – will seize

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II. Instructors Notes

A. Tips to keep scenario flowing:
- Prompt to secure airway by having pt vomit
- If workup inadequate, RN prompt – “what do you think is going on?”

D. Actors:
- EMS: Provide scene info
- Intensivist: May suggest Romazicon so pt doesn’t need ICU anymore (can be extubated).

E. Stimuli available:
- EKG: Sinus Tach
- CXR: normal
- Head CT: normal
- UDS: pos for BZD, rest negative
- CMP: No anion gap (so no need to send Osmoles)
- CBC, CIEs: normal
- ABG: Uncompensated respiratory acidosis

F. Scenario programming

1. Optimal management path (see evaluation checklist)

2. Potential complications:
    a. Esophageal intubation
3. Potential errors path(s)
    a. Not securing airway
    b. Giving Romazicon
4. Program debugging
    a. Use fluid infusions/losses to manipulate BP
    b. Use shunt fraction to manipulate SaO2

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III. Debriefing Plan

A. Method for debriefing
- Group debriefing using GAP framework
- (Future state)Videotape of case for later review with preceptor

B. Debriefing materials:
- Resident checklist – review with individual and group
- Clinical Pearls Handout
- Article on Flumazenil-induced seizures

C. Clinical content to cover in the debriefing
- Review consistent approach to the pt with AMS
- Review indications for intubation in this patient (respiratory depression, GCS <8)
- What medications can you give for seizures induced by Romazicon?
- What co-ingestion puts the pt at highest risk for Romazicon – induced seizures? (TCAs)
-

IV. Resources and References

1. Gueye PN, et al: Empiric use of flumazenil in comatose patients: Limited applicability of criteria to define low risk. *Ann Emerg Med* June 1996;27:730-735.

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