ED Scenario

SCENARIO: Janice Brown

SCENARIO LOCATION: Emergency department (ED)

SCENARIO SYNOPSIS: Patient is an 87-year-old female with past medical history of hypertension, congestive heart failure, type II diabetes and dementia presenting with altered mental status, arriving from home with daughter

SCENARIO OBJECTIVES:

- Recognize positive sepsis screen and implement three-hour bundle
- Recognize the need to evaluate volume status and tissue perfusion
- Demonstrate appropriate volume status and tissue perfusion evaluation using one of the following methods: CVP and ScvO2, hemodynamic monitoring (cardiac output, cardiac index, SV or SVV) or bedside cardiovascular ultrasound
- Demonstrate re-evaluation of volume status and tissue perfusion after interventions on patient
- Discuss barriers to non-compliance with the sepsis bundles

PARTICIPANT ROLES:

- Primary RN
- Secondary RN
- Charge RN
- Physician
- Pulmonologist/Intensivist (phone)

FACILITATOR:

ASSISTIVE STAFF:

Simulation scenario courtesy of Pat Posa RN, BSN, MSA, CCRN-K, FAAN, St. Joseph Mercy Hospital. Ann Arbor, Mich.

SETUP (for facilitator and simulation tech)

SCENARIO		
	Scenario Name:	Janice Brown – ED
	Prebrief Sheet:	Yes
	Manikin/SP:	Speaking manikin or standardized patient
	Programmed Name:	Janice Brown

ROOM		
	Room:	Sim. room or ED patient room
	Additional Equipment:	IV pump with 3 channels

MANIKIN/SP		
	Dress:	Gown
	Moulage:	Arm band
		Grey wig

IV		
	Number:	Two
	Site/s:	1. 20-gauge L arm with drainage bag NS @ 75 mL/hr on channel A 2. 18-gauge R arm
	Fluids/Meds:	• 1000 mL lactated Ringers with infusion pump tubing placed on channel A (maintenance fluids) • Levophed (norepinephrine bitartrate) 8 mg/ 250 mL with infusion pump tubing placed on channel B • 1000 mL lactated Ringers with normal tubing (fluid bolus)
	Drain Bag:	Yes
		2 transducers with 2 pressure bags (A-line and central-line)

O2		
	Device:	Nasal cannula
	Flow:	3 LPM
	Additional Devices:	Non-rebreather mask

PHONES/ EARPIECES		
	Number of Phones:	Three
	Who gets phones:	Primary RN, physician, charge RN

OTHER		
		Foley catheter with 30 mL urine
		Sepsis screening tool and checklist in room
		Clock in room that can be advanced
		Pen

PATIENT SCRIPT (if using standardized patient)

GENERAL		
	Pt. Name:	Janice Brown
	Pt. Age:	87
	Pt. DOB:	09/19/19XX
	Pt. Weight:	74.8 kg
	Patient Perspective/Chief Complaint:	Cough, not feeling well, can't provide history

HISTORY		
	Pt. PMHx	*Don't remember*
	Medications:	*Don't remember*
	Allergies:	*Don't think so*
	Surgical Hx:	*Don't recall*
	Social Hx:	*Don't recall*
	Family Hx:	*Don't recall*

SYSTEMS		
	Chief Complaint:	Weakness, fever, cough
	Respiratory/Pulmonary:	Productive cough, no difficulty breathing
	Cardiovascular:	No chest pain
	Abdominal:	No abdominal pain, no nausea, no vomiting, no diarrhea
	Genitourinary:	No problems urinating
	Musculoskeletal:	No pain

SPECIFICS		
	When did it start?	A day or so ago
	Have you been around anyone who is sick?	No
	Did you take any medications?	*Don't recall*
	Do you take all your medications as prescribed?	*Don't recall*
	Any other symptoms?	*Don't feel well*

ETC.		

SCENARIO SUMMARY (for simulation tech)

Patient is an 87-year-old female with past medical history of hypertension, congestive heart failure, type II diabetes and dementia presenting with altered mental status

TRIAGE	• To **PHASE 1** after patient is brought into room	• BP: 125/95 • HR: 92 • RR: 26 • T: 102.9°F	**Pt. Name**: Janice Brown 87 y/o **CC**: Cough, not feeling well, altered mental status **PMHx**: HTN, CHF, T2DM, dementia **Allergies**: NKDA

PHASE 1	• To **PHASE 2** after 1 minute	**Rhythm**: Sinus • BP: 94/60 • HR: 90 • SpO2 97% on 3L • RR: 24 • T: 98.5°F	

PHASE 2	• Correct: initial fluid bolus given (at least 250 mL) to complete 30 ml/kg bolus (**PHASE 3**) • Incorrect: Fluids not given within 3 minutes (**PHASE 5**)	**Rhythm**: Sinus • BP: 80/44 • HR: 98 • SpO2: 97% on 3L • RR: 24 • T: 98.4°F • CVP: 4	

PHASE 3	• Correct: Administer fluids and/or vasopressor (**PHASE 4**) • Incorrect: No fluids (**PHASE 6**)	**Rhythm**: Sinus • BP: 86/44 • HR: 100 • SpO2: 95% on 2L • RR: 24 • CVP: 7	

PHASE 4	• Team discusses plan • End scenario	**Rhythm**: Sinus • BP: 98/54 • HR: 88 • SpO2: 97% 2L • RR: 20 • CVP: 7	

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| PHASE 5 | • Correct: Administer fluids (**PHASE 3**)

• Incorrect: Increase Levophed (**PHASE 6**) | **Rhythm**: Sinus
• BP: 70/46
• HR: 118
• SpO2: 95% 2L
• RR: 24
• CVP: 4 | |

| PHASE 6 | • Physician orders another intervention

• End scenario | **Rhythm**: Sinus
• BP: 76/42
• HR: 122
• SpO2: 94% 2L
• RR: 24
• CVP: 4 | |

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INSTRUCTOR BRIEF

- This is an 87-year-old female patient that presents to the ED at 0930 with mental status changes and cough
- Past medical history: HTN, A-fib, T2DM, non-insulin dependent, CHF, dementia, recurrent UTI
- ED should diagnose her with UTI and pneumonia and give antibiotics and some fluid
- Initial lactate was 3.6; **repeat lactate was 4.6**
- Need to start with the initial bolus; patient is fluid-responsive

How scenario unfolds:

- She has a history of A-fib, CHF and is on Coumadin.
- Triage BP in ED 125/95, HR 92, RR 26, T 102.9°F at 0930
- IV – 18-gauge right arm and 20-gauge left arm
- Antibiotics should be given in ED - Rocephin (ceftriaxone) and Zithromax (azithromycin)
- After 1 liter of fluid they should repeat the lactate and it will be 4.6
- She should be diagnosed with CAP pneumonia and UTI
- Recent vitals – 108/86, HR 89, RR 21, SpO2 100% on 3L
- Foley with 30 mL urine in the last hour
- She has a NS going at KVO
- She weighs 75 kg

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PARTICIPANT BRIEF

Handoff to receiving RN

87-year-old female with PMH of HTN, CHF, T2DM and dementia presenting with altered mental status

Past Medical History:

> HTN
>
> A-fib
>
> T2DM, non-insulin dependent
>
> CHF
>
> Dementia
>
> Recurrent UTI

Chief Complaint: altered mental status and cough

Patient Perspective: confused, not feeling well

Weight: 75 kg

Past Surgical/Anesthetic History: None

Current Medications:

> Sotalol 80 mg PO BID
>
> Amlodipine 10 mg PO QD
>
> Spironolactone 25 mg PO QD
>
> Metformin 500 mg PO BID
>
> Oxybutynin 10 mg PO QD
>
> Coumadin
>
> Pravastatin 20 mg PO QS
>
> Urea 40% ointment to legs QD
>
> Vit B6 100 mg PO QD

Allergies: NKDA

Social/Family History: Father with HTN, cardiovascular disease and CVA. Denies alcohol, tobacco and drug use.

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INITIAL LABS AND DIAGNOSTICS

Janice Brown, emergency department, 1000

ABG		Reference Range
pH	7.27	7.35 – 7.45
CO2	32	35 – 45
PO2	69	80 – 100
HCO3	14	22 – 28
Sat	91%	> 75

Complete Blood Count with Differential		Reference Range	
		Male	Female
White Blood Cell (WBC)	6.3	4,500 – 10,000 K/uL	
Neutrophil Absolute	5.5	1.7 – 7.6 thou/mcL	
Hemoglobin (HBG)	10.5	13.5 – 16.5 g/dL	12.0 – 15.0 g/dL
Red blood cell (RBC)	3.45	4.5 – 5.5 M/uL	4.0 – 4.9 M/uL
Hematocrit	32	36.0 – 48.0%	
MCV	92	80 – 100 fL	
MCHC	34.4	32 – 36%	
Platelet	141	140 – 450 thou/mcL	

Basic Metabolic Panel		Reference Range
Sodium	136	135 – 147 mmol/L
Potassium	4.5	3.5 – 5.2 mmol/L
Chloride	104	95 – 107 mmol/L
CO2	19	22 – 30 mmol/L
BUN	25	7 – 20 mg/dL
Creatinine	1.13	0.5 – 1.2 mg/dL
Glucose	150	60 – 110 mg/dL
Calcium Total	8.6	8.5 – 10.1 mg/dL
Lactate	3.6	0.5 – 2.2 mEq/L

Coags		Reference Range
Prothrombin Time	16.5	11 – 13.5 sec
INR	2	0.8 – 1.1
PTT	19	25.1 – 36.5

Radiology
Chest x-ray: Patchy to confluent LLL airspace opacity; may represent PNA or volume loss

REPEAT LABS

Lactate		Reference Range
Lactate	4.6	0.5 – 2.2 mEq/L

INR		Reference Range
INR	1.1	0.8 – 1.1

ABG		Reference Range
pH	7.27	7.35 – 7.45
CO_2	32	35 – 45
PO_2	69	80 – 100
HCO_3	14	22 – 28
O2 Sat	91%	> 75%

HEMODYNAMIC RESULTS

(given verbally, if requested)

ScvO2 #1 – 65

ScvO2 #2 – 72

First set: SV 40, CI 2.3, SVV 30, CO 3.9, SVI 23.5

Second set: SV 50, CI 2.6, SVV 32, CO 4.9, SVI 27

Third set: SV 59, CI 3.2, SVV 33, CO 5.9, SVI 32

Note: Each set is reflected on a separate page, allowing for posting in room, if needed.

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OBSERVER CHECKLIST

CRITICAL PERFORMANCE STEPS		
Communication		
Demonstrate sepsis huddle	Yes	No
Demonstrate closed loop communication	Yes	No
Team		
Demonstrate effective team communication	Yes	No
Discuss barriers to noncompliance with the bundles	Yes	No
Clinical Management		
Recognize the need to evaluate volume status and tissue perfusion	Yes	No
Demonstrate appropriate volume status and tissue perfusion evaluation using one of the following methods: CVP/ScvO2, hemodynamic monitoring or bedside ultrasound	Yes	No
Demonstrate re-evaluation of volume status and tissue perfusion after interventions on patient	Yes	No

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Hemodynamic Results – Set 1

SV   40

CI   2.3

SVV 30

CO   3.9

SVI   23.5

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Hemodynamic Results – Set 2

SV   50

CI   2.6

SVV 32

CO   4.9

SVI   27

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Hemodynamic Results – Set 3

SV   59

CI   3.2

SVV 33

CO   5.9

SVI   32

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