# Patient Simulation

## MEDICAL EMERGENCIES: FLU/DEHYDRATION

### Instructor Information

Review the scenario with the patient or set up appropriate actions using a simulation system. Instructors may use each checkbox to indicate that the learner has requested an informational item regarding a given scene or patient feature. This simulation involves a 5-year-old female who has been sick for the past couple of days with fever, nausea, diarrhea, and vomiting. Mom has called due to a change in the patient's mental status.

### Patient Information and Dispatch

**Position:** Lying supine in bed

**Moulage:** Hot to touch, redness to skin

**Props/additional personnel:** N/A

**Dispatch:** You have been dispatched to a private residence for a 5-year-old female who has altered mental status and has been sick for the past 2 days. It is 1700 hours on a fall day with an outside temperature of 68˚F (20˚C).

*Or*

**Hospital hand-off:** Parents arrive with a 5-year-old female to the ED triage station. The mother states that the patient has been vomiting for the past 2 days and has had a fever. She is concerned now because her daughter is "not acting right." It is a fall day with an outside temperature of 68˚F (20˚C).

### Initial Observations

☐ **SCENE ASSESSMENT**

Upon arrival at the residence, you are met by the mother who takes you to your patient. As you enter the child's bedroom, you find her lying in bed. The mother states that the patient has been vomiting for the past 2 days and has had a fever. She is concerned now because her daughter is "not acting right."

**Medical devices:** None

**WMD/odors/fumes:** Foul odor in daughter's room

**Cultural/social:** None

**Communication:** Not communicating with responders

☐ **CARDINAL PRESENTATION/CHIEF COMPLAINT:** Change in mental status, lethargic; fever, nausea, vomiting

☐ **PEDIATRIC ASSESSMENT TRIANGLE**

**Appearance:** Lethargic; not alert

**Work of breathing:** Rapid; accessory muscle use

**Circulation:** Flushed skin

☐ **PRIMARY SURVEY**

**X (eXsanguinating hemorrhage):** No bleeding noted.

**A (Airway management and cervical spine stabilization):** Patent

**B (Breathing):** Rapid, shallow respirations. Lung sounds reveal rhonchi in left lower lobe.

**C (Circulation):** Rapid carotid pulses. No radial pulses. Skin is hot and moist.

**D (Disability):** Altered, GCS = 11 (E3, V2, M6)

**E (Expose/environment):** No trauma noted.

☐ **FIRST IMPRESSION: QUICK OR NOT QUICK** (circle or underline one)

☐ **LIFE THREATS**

**Life threats identified:** Altered mental status; respiratory distress

**Life threat management:** Maintain patent airway. Provide oxygen via non-rebreather mask or bag-valve mask (BVM), if tolerated.

**Transport decision/disposition:** Transport to closest appropriate facility. This is a "Quick" situation. Do not delay transport to the ED for continued treatment.

## Discussion Points

- Discuss the findings and physiologic effects of your primary assessment and how they relate to the patient's condition.
- Define treatment options for the patient presentation.
  - Focus on airway, breathing, and circulation. Breathing should be maintained using supplemental oxygen and BVM with supplemental oxygen, if necessary.
  - Be sure to check the patient's blood glucose.
- Identify transportation options. Are there pediatric facilities nearby or will aeromedical resources be requested?
- Ensure that the students assessed scene hazards with an understanding of proper treatment.

☐ **VITAL SIGNS**

**HR:** 147

**$SpO_2$:** 90%

**RR:** 40

**BP:** 74/50

**Temp:** 103.8˚F (39.9˚C)

**$ETCO_2$ waveform:** Square; 30 mm Hg

**4-lead ECG:** Sinus tachycardia

## Detailed Assessment

☐ **HISTORY**

**Onset:** 2 days

**Palliation/provocation:** N/A

**Quality:** N/A

**Radiation:** N/A

**Severity:** Unable to assess

**Time:** 2 days

**Signs and symptoms:** Fever, altered mental status, respiratory failure

**Allergies:** NKDA

**Medications:** Tylenol, ibuprofen (last time dose was administered)

**Past medical history:** None

**Last meal:** Soup yesterday evening

**Events preceding:** None

**Risk factors:** Age, flu season

☐ **SECONDARY SURVEY**

**Head:** Unremarkable

**Eyes:** Unremarkable, PERRL, no tears

**Ears:** Unremarkable

**Nose:** Yellow/green discharge from nares

**Throat:** Dry, tacky mouth

**Chest:** No signs of trauma. Lung sounds reveal left lobe rhonchi if auscultated. **Heart sounds:** no murmur.

**Abdomen:** Soft and nontender with no guarding or bruising.

**Extremities:** Motor and sensory intact; no peripheral pulses noted.

**Other:** N/A

☐ **DIAGNOSTICS**

**Blood glucose:** 84 mg/dL (4.66 mmol/L)

**Weight:** 40 lbs (18 kg)

**Labs:** N/A

## Potential Diagnosis by Body System

**Respiratory:** **Pneumonia**

**Cardiovascular:** **Cardiac arrhythmias, hypovolemic shock**

**Gastrointestinal:** **Gastroenteritis, peritonitis**

**Renal/Urinary:** Negative

**Reproductive:** Negative

**Endocrine/Metabolic:** **Sepsis, influenza, hyperglycemia**

**Environmental:** Negative

**Musculoskeletal/Integumentary:** Negative

**Neurologic:** Negative

**Toxicology:** **Toxic ingestion**

☐ **REFINE DIFFERENTIAL DIAGNOSIS**

**Life threatening:** Yes

**Critical:** Yes

**Nonemergent:** No

☐ **ONGOING MANAGEMENT:** Discuss with students.

**Reassess:** Discuss what reassessment measures will be performed and how often.

**Refine diagnosis:** Discuss with students.

**Modify treatment:** Discuss modified treatment options with students.

**Patient disposition:** Transport; treat in ED.

☐ **TREATMENTS/CRITICAL ACTIONS**

**Airway/breathing:** Oxygen therapy; BVM if indicated

**Circulation:** Cardiac monitor, IV therapy, IV fluid bolus

**Life threats managed:** Discuss with students.

- Basic: Oral adjunct, oxygen, ventilatory support
- Advanced: Cardiac monitor, IV therapy, IV fluid bolus, blood glucose monitoring

**Transport decision (for prehospital):** Discuss with students.

- Emergent or nonemergent?
- Air or ground?

**Destination:** Transport to closest appropriate facility.

## Teaching Points

1. Ask the students to discuss their physiologic goals for this patient and how they achieved them.
2. Ask the students to identify the "red flags" that indicated the patient's condition was deteriorating and discuss.
3. Ask students to identify the greatest life threat for this patient.
4. What is a priority for this patient? Respiratory support or cooling patient with fluids?
5. Ask the students to discuss the potential risks and benefits of their treatment alternatives.
6. Identify and discuss multiple diagnoses and note that more than one can be accurate for a given patient.
7. Discuss the importance of early recognition of sepsis along with notifying the receiving facility.
8. Disposition
   a. Admitted to pediatric ICU for fluids, pressors, and monitoring
   b. Discharged after 72 hours of treatment
   c. Diagnosis: Pneumonia and sepsis

## Take-Home Points/Critical Actions

- Ensure oxygenation; use positive-pressure ventilation with adequate oxygen, as needed.
- Provide IV therapy and fluid bolus.
- Use antipyretics and cooling measures.