


# Rural SimCenter Scenario Template



**Scenario: *Tanya Harris* 9-16-XX**

<b>Scenario Name: <i>Maternal Code-Opioid Overdose</i></b>		
<b>Date Created:</b> 4/21 <span style="color: grey;">●●●●●●●●●●</span> <b>Date Validated:</b> 6/21		
<b>High Fidelity</b> <input checked="" type="checkbox"/>	<b>Low Fidelity</b> <input type="checkbox"/>	<b>Static Model</b> <input type="checkbox"/>
<b>Target Group:</b> <input checked="" type="checkbox"/> Student <input checked="" type="checkbox"/> Professional		
<b>Level:</b> <input checked="" type="checkbox"/> Advanced <input type="checkbox"/> Intermediate <input type="checkbox"/> Beginner		
<b>Learning Objectives:</b>		
<b>Primary Objectives:</b>		
<ol style="list-style-type: none"> <li>1. Perform supportive airway management of the parturient in cardiac arrest</li> <li>2. Perform high quality CPR during cardiopulmonary resuscitation</li> <li>3. Perform manual left uterine displacement during cardiopulmonary resuscitation</li> <li>4. Initiate timely perimortem cesarean section within 5 minutes of recognized cardiac arrest</li> </ol>		
<b>Secondary Objectives:</b>		
<ol style="list-style-type: none"> <li>1. Communicate effectively with an multidisciplinary team of anesthesiologists, obstetricians and nurses during patient management</li> <li>2. Assure newborn care team is available for infant in event of a C-Section</li> </ol>		
<b>Learner Preparation Exercise:</b>		
<b>Review:</b> (Insert skills or reading students should review)		
<ul style="list-style-type: none"> <li>• Maeda,A., Bateman, B.T., Clancy, C.R., Creanga, A.A., Leffert, L.R. (2014). Opioid abuse and dependence during pregnancy: Temporal trends and obstetrical outcomes. <i>Anesthesiology</i>; 121:1158–1165 doi: <a href="https://doi.org/10.1097/ALN.0000000000000472">https://doi.org/10.1097/ALN.0000000000000472</a></li> <li>• McMillan T.E., Austin, S., Hyrkas, K. (2021). Case report of cardiopulmonary arrest during pregnancy due to opioid overdose, <i>Journal of Obstetric, Gynecologic &amp; Neonatal Nursing</i>, Vol. 50, Issue 2, Pages 205-213, ISSN 0884-2175, <a href="https://doi.org/10.1016/j.jogn.2020.11.003">https://doi.org/10.1016/j.jogn.2020.11.003</a>.</li> <li>• Maternal Code video: <a href="https://www.youtube.com/watch?v=c_qwGpaa8FI">https://www.youtube.com/watch?v=c_qwGpaa8FI</a></li> <li>• <a href="https://www.youtube.com/watch?v=HIIIFuml82Mc">https://www.youtube.com/watch?v=HIIIFuml82Mc</a></li> <li>• Kikuchi, J., &amp; Deering,S. (2018). Cardiac arrest in pregnancy. <i>Seminars in Perinatology</i>, 42 (1), pp. 33-38, <a href="https://doi.org/10.1053/j.semperi.2017.11.007">https://doi.org/10.1053/j.semperi.2017.11.007</a></li> </ul>		
<span style="color: grey;">●●●●●●●●●●</span>		
<b>Insert Scenario Summary (Basic overview of Case)</b>		
<p>Friends found Tanya on the floor and unresponsive in her home. An emergency medical system (EMS) team responded and, on their arrival to the scene, witnessed a bystander performing cardiopulmonary resuscitation. According to the EMS report, Tanya was in respiratory distress. She was cyanotic and had a tourniquet on her arm; a syringe was on the floor. She had a weak pulse. Tanya is a 30 year old who is 31 weeks pregnant.</p>		
<p>Total Time Duration: 60 minutes Set-up 15 minutes Simulation 15 minutes</p>		

**Scenario:** *Tanya Harris 9-16-XX*

<p><b>Initial Subjective Data:</b> Background Information:</p> <p>Friends found Tanya on the floor and unresponsive in her home. An emergency medical system (EMS) team responded and, on their arrival to the scene, witnessed a bystander performing cardiopulmonary resuscitation.</p> <p>According to the EMS report, Tanya was in respiratory distress. She was cyanotic and had a tourniquet on her arm; a syringe was on the floor. She had a weak pulse. Friend reports she has a history of using Oxycodone.</p> <p><u>Past History:</u> Friends report history of substance use. Tanya released from prison 9 months ago and is 31 weeks pregnant. Does not have any other medical history available.</p> <p><u>Presenting History:</u> On initial assessment by the EMS team, Tanya had pinpoint pupils; was hypoxic with wheezes; and had significant angioedema of the eyelids, face, lips, and tongue with no evidence of trauma. Obviously pregnant she was unresponsive. During transport, the EMS team administered 4 mg naloxone (and reported a slight increase in responsiveness).</p>	<p>Debrief 30 Minutes</p> <p><b>Patient Description and Image</b></p> <table data-bbox="1081 430 1386 690"> <tr><td>Name</td><td>Tanya Harris</td></tr> <tr><td>Age</td><td>30</td></tr> <tr><td>Birthdate</td><td>9-16-XX</td></tr> <tr><td>Gender</td><td>Female</td></tr> <tr><td>Weight</td><td>162</td></tr> <tr><td>Height</td><td>56"</td></tr> <tr><td>Allergies</td><td>NKDA</td></tr> </table> 	Name	Tanya Harris	Age	30	Birthdate	9-16-XX	Gender	Female	Weight	162	Height	56"	Allergies	NKDA
Name	Tanya Harris														
Age	30														
Birthdate	9-16-XX														
Gender	Female														
Weight	162														
Height	56"														
Allergies	NKDA														

**Scenario: Tanya Harris 9-16-XX**

<b>Supplies</b>	<b>Set-up Notes:</b> What is needed for the patient (simulator/actor) and what is needed for the patient room?
<p><b>IV Set Up</b> <input type="checkbox"/> Saline Lock <input checked="" type="checkbox"/> IV <input checked="" type="checkbox"/> IV Pump <input type="checkbox"/> Second IV Fluid Type: Normal Saline Infusion Rate: 200cc/hr. Tubing: Standard</p> <p style="text-align: center;"></p> <p><b>Medications</b> <input type="checkbox"/> Med Dispense</p> <p>Medication List</p> <ol style="list-style-type: none"><li>1. Naloxone 4mg nasal inhaler</li><li>2. Normal Saline IV <b>solution</b></li><li>3.</li><li>4.</li><li>5.</li><li>6.</li><li>7.</li></ol>	<p><b>Setting:</b> <input type="checkbox"/> ICU <input checked="" type="checkbox"/> Emergency <input type="checkbox"/> Medical <input type="checkbox"/> Surgery/OR <input type="checkbox"/> Out-Patient <input checked="" type="checkbox"/> Other <u>Obstetric Unit</u></p> <p style="text-align: center;"></p> <p><b>Monitor Setup:</b> <input checked="" type="checkbox"/> Primary ECG <input type="checkbox"/> Secondary ECG <input checked="" type="checkbox"/> Pulse <input checked="" type="checkbox"/> Respiratory Rate <input checked="" type="checkbox"/> B/P <input checked="" type="checkbox"/> SPO2 <input checked="" type="checkbox"/> Temp <input checked="" type="checkbox"/> CO2 Other Settings: Fetal Heart Monitor</p> <p><b>Moulage:</b> Cyanosis-pregnancy</p> <p><b>Patient Actors Requested:</b></p> <ul style="list-style-type: none"><li>• Age: 30</li><li>• Gender: Male or Female</li><li>• Clothing: Street Clothes</li><li>• Relationship to Patient: Friend or Family</li></ul>

**Scenario: Tanya Harris 9-16-XX**

**Equipment:**

- Nasal Cannula    O2 Mask    Non-Rebreather
- PPE (goggles, gloves, etc)    Penlight    Crash Cart
- EMR    Thermometer    Accucheck    NG Tube
- Suction    Chest Tube    Other

Please Describe Additional Equipment Needs

**Paperwork\***

- Physician Orders    Chart    Lab Reports

**\*Attach Reports to the file**

**Facilitator Notes:** This is an emergent event that requires learners to perform CPR during a maternal code and be prepared for possible C-Section delivery.

**Scenario: Tanya Harris 9-16-XX**



**Scenario Progression: Admission Information**

Initial State: <b>Frame 1-Admission</b>		Initial Patient History		
<b>Vital Signs</b> Cardiac Rhythm: bradycardia Pulse: 58 trend to 30 Respiratory Rate: 6 trend to 0 Breathing Pattern shallow Blood Pressure: 65/40 SPO2: 88% General Conditions to be in place for Scenario: EMT handoff to ER physician.		Body System Assessment	Patient Finding	
		• Neurological/Sensory	unresponsive	
		• Cardiac	Bradycardia – weak pulse	
		• Pulmonary	Slow respirations	
		• Musculoskeletal		
		• Gastrointestinal		
		• Genitourinary		
		• Skin/Wound	Cyanosis	
Correct Action: Naloxone- Call for help-start IVs		• Initial Lab/Diagnostics	EKG, CBC, Chem Panel, UA for toxicology	
				Move to Frame: 2
				Wrong Action: Slow to activate Code team
No Action	Move to Frame:			

Facilitator Notes: ER should call for OB team to assist in response and possible transfer.

**Scenario: Tanya Harris 9-16-XX**

Initial State: <b>Frame 2-Code</b>		Change in Patient Condition	
<b>Vital Signs</b>		Body System Assessment	Patient Finding
Cardiac Rhythm: Ventricular fibrillation		• Neurological/Sensory	
Pulse: 0		• Cardiac	
Respiratory Rate: 0		• Pulmonary	
Blood Pressure: 0		• Musculoskeletal	
SPO2: 0		• Gastrointestinal	
General Conditions to be in place for Scenario: Mother goes into cardiac arrest.		• Genitourinary	
		• Skin/Wound	
		• Vocal Complaint	
Correct Action: CPR with LUD- AED, Bag-Mask-30:2- Epinephrine-prepare for C-Section	Move to Frame: 3	• New Lab Reports	
Wrong Action: Fail to start CPR Fail to get help	Move to Frame: 5		

**Facilitator Notes:** The team needs to work quickly to start CPR with Left Uterine Displacement, AED is possible with shockable rhythm. Bag-mask ventilation with 100% oxygen with a rate of at least 15L/min should be initiated immediately with a compression–ventilation ratio of 30:2. Consider advanced airway.

Epinephrine and other ACLS protocols are the same. Because time is important OB should be called as soon as possible to have the team ready in the event of a need for C-section. With an infant >20 weeks C-Section should occur no later than 5 minutes after the cardiac arrest. NICU teams should also be called to assist with the infant in the event of a delivery.

**Scenario: Tanya Harris 9-16-XX**

Initial State: <b>Frame 3-ACLS</b>		Initial Patient History	
<b>Vital Signs</b> Cardiac Rhythm: Ventricular fibrillation Pulse: 0 Respiratory Rate: 0 Blood Pressure: 0 SPO2: 0 General Conditions to be in place for Scenario: CPR in progress – Shock delivered		Body System Assessment	Patient Finding
		• Neurological/Sensory	
		• Cardiac	
		• Pulmonary	
		• Musculoskeletal	
		• Gastrointestinal	
		• Genitourinary	
		• Skin/Wound	
		• Vocal Complaint	
Correct Action: CPR-Shock	Move to Frame: 4	• Initial Lab/Diagnostics	
Wrong Action: CPR interruptions-no shock-no prep	Move to Frame: 5		

**Facilitator Notes:** With shockable rhythm, shock should be administered according to ACSL algorithm. Consider advanced airway. If code lasts longer than 5 minutes team should initiate C-section. With correct action OB team and NICU team have been called.

**Scenario: Tanya Harris 9-16-XX**

Initial State: <b>Frame 4-ROSC</b>		Change in Patient Condition	
<b>Vital Signs</b> Cardiac Rhythm: NSR-after shock Pulse:70 Respiratory Rate:8 Blood Pressure: 82/64 SPO2: 94% General Conditions to be in place for Scenario: ROSC		Body System Assessment	Patient Finding
		• Neurological/Sensory	
		• Cardiac	
		• Pulmonary	
		• Musculoskeletal	
		• Gastrointestinal	
		• Genitourinary	
		• Skin/Wound	
		• Vocal Complaint	
Correct Action: Continuous Monitoring- consider naloxone drip –consider therapeutic hypothermia. Transfer to OB ICU	Move to Frame: END	• New Lab Reports	
Wrong Action:	Move to Frame:		

**Facilitator Notes:** Immediate team activation is important-including all equipment needs transported to bedside. Maternal codes should follow same cardiac arrest algorithm. Code can End after 1<sup>st</sup> shock and before 5 minutes. If desired the simulation can progress 5 minutes and result in C-section. END scenario after baby is handed to NICU team. This action needs preparation of simulated pregnant abdomen with infant mannequin for delivery sequence.



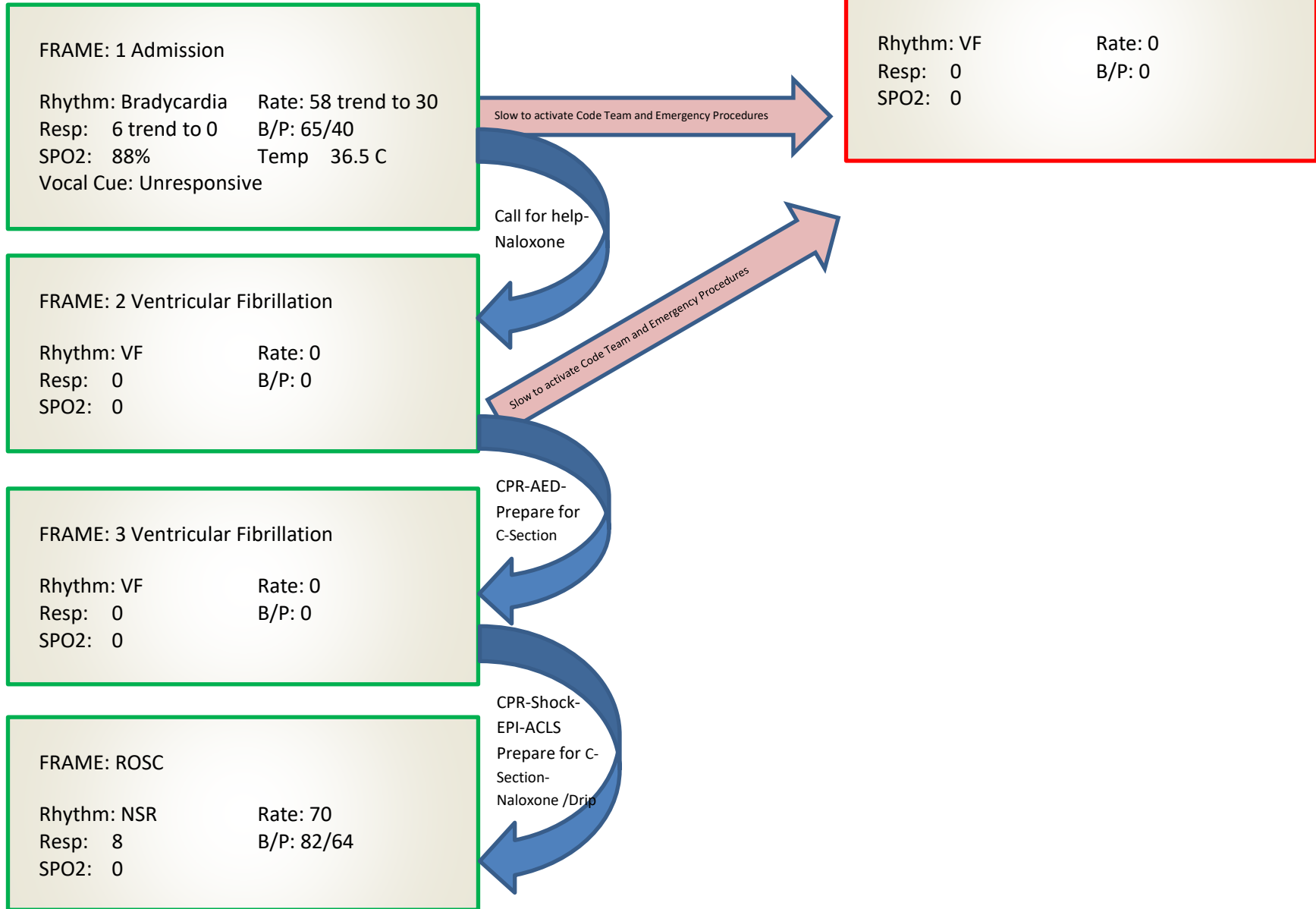
**Scenario: Tanya Harris 9-16-XX**

Initial State: <b>Frame 5</b>		Change in Patient Condition	
<b>Vital Signs</b> Cardiac Rhythm: Ventricular Fibrillation Pulse:0 Respiratory Rate:0 Blood Pressure: 0 SPO2: 0		Body System Assessment	Patient Finding
		• Neurological/Sensory	
		• Cardiac	
		• Pulmonary	
		• Musculoskeletal	
		• Gastrointestinal	
		• Genitourinary	
		• Skin/Wound	
		• Vocal Complaint	
		• New Lab Reports	
Correct Action	Move to Frame:		
Wrong Action	Move to Frame:		
No Action	Move to Frame:		

**Facilitator Notes:** Scenario ENDS due to no response from patient.



Scenario Progression Algorithm:





**Patient Actors Roles:**

**EMT:** Gives report to ER team

**Friend/Family** member that finds Tanya

**Suggested Dialogue for each Actor**

“She loved the Oxycodone”

“I tried to save her”

“I told her she needed to stop for the baby!”

**Friend/Family** member should become very upset if team doesn’t recognize cardiac arrest and state “Why isn’t she breathing?”

Key Points to emphasize:

“EMT is not sure she was ever pulseless”

“Mom was found unresponsive”

**If learners do not consider cesarean section after 3 minutes of resuscitation attempts, the OB suggests in situ cesarean delivery.**



## DEBRIEFING Points

Instructors should developed a structured debriefing and develop questions related to:

Cardiac arrest is a rare event that affects approximately 1 in 12,000 hospital admissions in the US. Prognosis is relatively good with up to 58% surviving to hospital discharge. This case was complicated by an opioid overdose. First line of treatment is Naloxone which can reverse the effects of the opioid—however it is a short acting agent and Oxycodone and other opioids have a long half-life. This is an event that has consequences for both mother and baby and our immediate response will determine the outcome for both.

### 1. Objectives

- We had a woman present with respiratory depression who was found unresponsive. Was the team able to perform supportive airway management?
- After she went into cardiac arrest what were the next steps?
- How was the CPR-Was Left Uterine Displacement considered? Why do we do LUD?
- Was the rhythm shockable? If so how long until shock was initiated?
- Is fetal monitoring important? American Heart says FHM is not important during the code event.
- There was a time pressure to achieve ROSC before 5 minutes. What is the goal with early C-Section?

### 2. Teamwork

- Information sharing among care providers from multiple disciplines is needed to build expertise in managing the care of pregnant women who experience opioid overdose.
- OB/NICU teams need to be responsive promptly to call for help.
- Did the team get the help they needed?

3. Did the team communicate effectively with the arriving multidisciplinary team of anesthesiologists, obstetricians and nurses during patient management?

4. After ROSC what are the concerns for continued response to the opioid. What measures were put in place to avoid repeat of the respiratory depression?

5. What is the best position for the patient after ROSC? Is this patient a candidate for therapeutic hypothermia? The literature states that if restoration of spontaneous circulation (ROSC) has been achieved without undergoing a PMCD, the patient should immediately be placed in the full left lateral decubitus position. If this is not possible, manual LUD should be continued, and the patient should promptly be transferred to the ICU. Therapeutic hypothermia has been shown to improve neurologic outcomes following cardiac arrest. Follow the latest AHA guidelines.

6. Patient Safety-What safety measures did the team take to support the care of mother and baby?

### Tips for Debriefing

1. Learner focused
2. Allow enough time for learning (2-3 times the scenario length)
3. Focus on the process not the individual
4. Keep the debriefing positive