Maternal Code

Facilitators

Objectives

1. Demonstrate clear closed loop team communication during the emergency
2. Initiate high-quality CPR with uterine displacement
3. Achieve fetal delivery with resuscitative cesarean in 5 minutes
4. Coordinate post ROSC maternal stabilization

Simulation Modality

Low fidelity with MamaNatalie and CPR Anne. Option to adjust per facility resources.

Roles in Scenario

Primary Nurse, Baby Nurse, Delivering provider.

Optional per facility resources and group sizes: Charge Nurse, Anesthesia, Patient support person, Documenter and CPR coach, Observer (checklist), Surgical Tech, Respiratory Therapy, House Supervisor, Unit Secretary, etc.

Recommend no more than 5-7 in scenario so all can fully engage.

Pilot date and attendee plan

Plan to trial at least 1 week prior to allow adjustments in session, supply gathering, etc.

Materials list and set up details

Mama Natalie: Load with baby	CPR Anne	Butter knife (scalpel)	Optional Cesarean tools: bladder blade, lap sponges, etc.
Defibrillator patches	Ambu bag and mask	Epinephrine	Code documentation sheet (per facility standards)
AED, Defibrillator or Crash cart per available tools	ET tube and laryngoscope	Optional mock IV and IV arm	Team Resources: NPQIC Toolkit items or facility specific procedures

Session Dates, Times and Location

Plan for 1 hour sessions: 15 min pre brief, 20 min scenario, 15 min debrief and 10 minute reset.				

Interdisciplinary roles attending simulation:

Participants sign up process, confidentiality form plan and session evaluation

Participant notification and reminder dates

Pre-work: *Review institutional response to code and team member roles. In the setting of obstetrics, account for the infant as well.*

Pre-brief and Confidentiality Agreements

- **Welcome:** Introduce purpose of session and review of Objectives
- **Key things:**
  - **What role is added to CPR in pregnant patient greater than 20 weeks?**
    - **Uterine displacement**
    - **Note for ED and EMS teams: cannot use LUCAS device for pregnant patients**
  - **What time frame for over 20 weeks are we to do a resuscitative cesarean?**
    - **5 minutes. This helps resume circulation to mother for best out come and best outcome for fetus.**
- **Ground rules and Confidentiality Agreement:** Treat as real as possible. Request assistance as need from facilitators. What happens here stays here.
  - Commit to confidentiality for learning in this space (via form or verbal). We are here to work through processes so we can explore what things may be needed further developed or equipment obtained, etc. This is about the team.

Orient to room (enter simulation space)

- Introduce to the patient wearing Mama Natalie + CPR Anne
- Orient to medications in space and how expected to administer
- Relay what other equipment, materials and references are available in the space.
- Relay will verbalize any vitals, EFM, cardiac rhythms, etc.
- Discuss how to communicate to get more help, call lab, call provider, etc. during scenario.
- Leave space for further questions regarding space or objectives/session purpose.

Role delegation

Per facility role decisions in session

Scenario lead in

Caren Code has come into triage complaining shortness of breath. She is a 30-year-old G1P0 at 36 weeks. Her only medical history is obesity (BMI 38) and chronic hypertension for which she takes a daily Labetalol. She has NKDA. She states a headache and malaise the last several days, and just this morning short of breath so she called her provider who advised her to come to triage for evaluation.

Your team is entering the room to place her on EFM and begin the triage process and find her slumped over in bed.

Scenario

Initiate Response	Expected Participant Events:	Facilitator cues:
HR 0 RR 0 No EFM tracing available	○ Assess patient response ○ Feel for pulse and breathe ○ Initiate code team ○ Begin effective compressions 30:2 with breaths with 100% O2 ○ Continuous uterine displacement ○ Note time began code ○ Role delegation assigned ○ Crash cart and AED obtained ○ AED pads placed on patient accurately ○ Back board placed under patient ○ IV access obtained ○ Notify neonatal care personnel (i.e. Children's transport or internal teams pending facility resources) ○ Recognize no fetal monitoring currently for defibrillation benefit ○ 2-minute pulse check with change of compressors ○ Administer Epinephrine 1g of IV / IO q 3-5 min	'No pulse, no response, not breathing' 'No Shock Advised' Asystole

	○ Identify need for intubation early ○ Continuous compressions once patient intubated, Ventilate 10 breaths per minute ○ Assess reversible causes ○ 4-minute pulse check with change of compressors ○ Continue CPR while charging defibrillator ○ Clear prior to shock ○ Deliver shock ○ Immediately resume CPR	'Shock advised' V-fib
Birth	**Expected Participant Events:**	**Facilitator cues:**
	○ Resuscitative cesarean performed at 5 minutes of code ○ Birth time noted	'Infant with Baby/NICU nursing team, no longer part of scenario'
Post Birth Code	**Expected Participant Events:**	**Facilitator cues:**
	○ CPR continues	'Noted ETCO2 increased'
ROSC	**Expected Participant Events:**	**Facilitator cues:**
HR ST 115 BP 92/54 SpO2 91% Lung sounds crackles bilateral	○ Pulse check ○ Assess VS ○ Continue airway support ○ Monitor hemodynamics ○ 10u IM oxytocin ○ Methergine 0.25mg IM ○ Labs: CBC, CMP, coagulation panel, lactate and ABG ○ Obtain cord arterial and venous gases	'Noted ETCO2 increased' 'Pulse palpated'

	○ Transfer to ICU / Transport arrangement / to OR to evaluate and close cesarean ○ Plan of care for pain management set ○ Ongoing communication with family ○ Team debrief	
Scenario End: Caren is stabilized and [transferred to ICU / tertiary facility]. Upon review of labs after the code, patient was found to have severe preeclampsia with pulmonary edema resulting in maternal hypoxia and cardiac arrest. After 4 days in the hospital, she discharged home. The infant stayed in the NICU for 2 weeks and then discharged home.		

Debrief

What went well? Anything we could do differently? Were any processes tested in this simulation? If checklist observer and/or documenter present in scenario, relay on their records to guide debrief discussion.

Objective	Expected Participant Events Notes (as listed above in scenario)
Demonstrate clear closed loop team communication during the emergency	
Initiate high-quality CPR with uterine displacement	
Achieve fetal delivery with resuscitative cesarean in 5 minutes	
Coordinate post ROSC maternal stabilization	

Optional pre brief or post brief discussion points pending team needs

- **This scenario maternal code was result of pulmonary edema, what other causes could be considered?**
  - **Pulmonary embolism, peripartum cardiomyopathy / mitral infarction.**
  - **With other symptomology or details we may have considered hemorrhage, AFE, magnesium toxicity, toxins, acidosis, etc.**
- **Where is the unit crash cart? Demonstrate how to turn on AED, apply patches, deliver shock, etc.**
- **Who can perform a cesarean in your facility? Where are materials for this (scalpel)? Do we move to OR? No, do not move patient in arrest.**
- **What are your transport protocols (internal and/or external)? Who should be contacted to transport (maternal and neonatal)?**

Evaluations

Reset