**Purpose of the tool:** The Preeclampsia/Seizure In Situ Simulation tool provides a sample scenario for labor and delivery (L&D) staff to practice teamwork, communication, and technical skills in the unit where they work. Upon completion of the Preeclampsia/Seizure *In Situ* Simulation, participants will be able to do the following:

* Demonstrate effective communication with the patient and support person during a labor complicated by preeclampsia and seizure.
* Demonstrate effective teamwork and communication with clinical team members during assessment of the patient, changes in the patient’s clinical status, and actions required for the optimum patient outcome.
* Demonstrate timely and accurate clinical assessment and intervention for preeclampsia with seizure.
* Demonstrate the efficient use of checklists, protocols, or similar cognitive aids for evaluation and treatment of preeclampsia and seizure.

**Who should use this tool:** Simulation facilitators

**How to use this tool:** This tool should be used in connection with the “Facilitation Instructions for Conducting In Situ Simulations” to prepare, conduct, assess, and debrief in situ simulations on L&D units. Simulation facilitators can adapt, modify, and further tailor this sample scenario to meet the training needs of their unit staff or resources available in their facility.

**Other resources**: Additional resources related to preeclampsia are available at the following Web sites:

* California Maternal Quality Care Collaborative: <https://www.cmqcc.org/resources-tool-kits/toolkits/preeclampsia-toolkit>
* American Congress of Obstetricians and Gynecologists District II. Safe Motherhood Initiative. Severe Hypertension Bundle: <http://www.acog.org/About-ACOG/ACOG-Districts/District-II/SMI-Severe-Hypertension>

**Note:** The information presented in this document does not necessarily represent the views of AHRQ. Therefore, no statement in this document should be construed as an official position of AHRQ or of the U.S. Department of Health and Human Services. Outside resources identified do not represent an endorsement of those resources and do not reflect the position of AHRQ or the Federal Government.

Sample Scenario for Preeclampsia and Seizure In Situ Simulation

This document provides a sample scenario for anin situ simulation for a labor complicated by preeclampsia and seizure. This document contains the following:

* Preparation Required
* Clinical Context, Distractors, Triggers, and Expected Behaviors for the Simulation Facilitator
* Preeclampsia and Seizure Simulation Assessment Tool
* Clinical Context, Triggers, and Distractors Formatted for Printing Separately

Refer to the document titled “Facilitation Instructions for Conducting In Situ Simulation” for general guidance and instructions regarding presimulation planning, presimulation briefing, simulation assessment, and simulation debriefing.

During the simulation, participants are encouraged to practice the use of protocols, checklists, or cognitive aids the unit has developed or adapted for use in evaluating and treating preeclampsia and seizure.

# Preparation Required

This simulation requires people to play the roles of the patient and the patient’s support person:

* The actor playing the patient should wear a patient gown, padding (to simulate a postpartum belly), and a wrist identification band and should lie in bed. The simulated patient (“actor”) should wear scrubs under the gown to ensure her privacy.
* The actor playing the support person should be briefed on his or her disposition and how to interact with others in the simulation.

In addition, the following props (i.e., simulated equipment and materials) are required:

* Simulated intravenous (IV) fluids and medications (e.g., magnesium sulfate, calcium gluconate). The team should order and access simulated fluids and medication the way it normally would order these items—for example, through electronic order entry, a Pyxis machine, or a rapid response kit or cart. This allows the team to experience the normal passage of time required to order and access necessary supplies for treatment. Prior planning and coordination with the pharmacy for these simulated items will help make the simulation as realistic as possible.
* Fetal heart rate (FHR) simulator or FHR strips for teams to assess. Simulator should be capable of simulating a Category I and II tracing. If a simulator is not available, old FHR paper strips can be used.
* Simulated urine in a Foley catheter bag (yellow food coloring can be used to make urine darker).
* Lab result printouts or a simulated patient in the electronic medical record with the necessary lab results for the simulation.

# Clinical Context, Triggers, Distractors, and Expected Behaviors for the Simulation

The content of this simulation is divided into four parts: Clinical Context, Triggers, Distractors, and Expected Behaviors. The Clinical Context is provided at the beginning of the simulation in the form of a patient handoff and introduces that simulated patient and her clinical history. The handoff is followed by a series of Triggers and Distractors, events or actions that introduce new information and shape the context of the clinical response. The simulation facilitator introduces the Triggers and Distractors throughout the course of the simulation. A set of Expected Behaviors is also provided for the Clinical Context and each set of Triggers and Distractors. The Expected Behaviors offer a list of ideal actions that the clinical team might take in response to each set of events in the simulation with particular regard to those that foster effective teamwork and communication. The Expected Behaviors can also serve as a tool to use in evaluating the performance of the simulation participants.

# Clinical Context

*The facilitator provides the clinical context to person in the role of nurse. This can be done using a verbal report and handoff from one nurse to another nurse during change of shift.*

“Emilia Harper is a 20-year-old G1P0 at 34 weeks and 1day gestational age admitted 2 hours ago with abdominal pain. Her prenatal history is unremarkable except for heartburn since the first trimester. She’s been unable to distinguish between epigastric pain or contractions. She denies a headache. I just checked her cervix and she is 1 cm/long. She’s contracting every 3-4 minutes.

“Her admitting blood pressure was 150/100, but she’s rested and they’ve come down. Pulse 88, temp 98.6, resp rate16, FHR 145, Category I. Her Hgb [hemoglobin] on admission was 11.8. She dipped 2+ protein in her urine, and she has a Foley catheter since she couldn’t go on her own.

“Dr. Smithson is concerned about preeclampsia and has ordered some labs, which haven’t come back. She wanted to assess her for 2 hours, so she should call any minute. Her IV is running at 125 ml/hour 0.5 normal saline.”

*This information may be withheld unless asked for:*

“I’m not sure why, but the lab said they are really busy right now and they should be back any minute. Labs ordered were ALT [alanine aminotransferase], AST [aspartate aminotransferase], platelets, uric acid, BUN [blood urea nitrogen] and creatinine.”

## Expected behavior/performance (not in any particular order):

* Nurse introduces self to the patient and begins assessment.
* Nurse asks about status of labs.
* Nurse plans to call doctor.

**Trigger #1**

*Patient volunteers information to assessing nurse:*

“You know, the other nurse asked me if I had a headache, and I didn’t at first, but I do have one now.”

“My headache is really bothering me. Can I get some medicine?”

**Clinical information provided on cards (one at a time) in response to assessment actions taken by team. For example, after team measures blood pressure (BP), the BP value is provided to team on a card.**

Pulse 90

BP 140/90

Temp 37.2

O2 Saturation 98% on room air

FHR 145 Category I with variability and no decelerations

Deep tendon reflexes (DTRs) 3+, no clonus

*The facilitator may provide answers to team as needed to help maintain the flow of the simulation.*

**Distractors**

Patient: “I’m really hungry. Can I get something to eat?”

Partner mentions that the other nurse mentioned something about preeclampsia.

Partner wants to understand preeclampsia: “Why does it happen? She doesn’t seem very sick.”

Partner receives many cell phone calls.

## Expected behavior/performance:

* Nurse reassures patient and partner.
* Nurse reassesses maternal and fetal status.

**Trigger #2**

Lab staff member calls patient’s nurse with a critical test result:

• Platelets 98,000 [critical test result]

• AST 44

• ALT 56

• BUN, creatinine, and uric acid not back

**Clinical information provided on cards (one at a time) in response to assessment actions taken by team. For example, after team measures BP, the BP value is provided to team on a card.**

Pulse 100

BP 160/102

Temp 37.2

FHR 145 Category I

DTRs 3+, no clonus

Patient with right-sided epigastric tenderness.

*The facilitator may provide answers to team as needed to help maintain the flow of the simulation. Elevated blood pressure, headache, and epigastric pain should continue while the team attempts various measures to address.*

**Distractors**

Patient holds top of abdomen and moans in pain.

Partner doesn’t understand what’s going on. “Is she in labor?”

Partner updates family by phone.

## Expected behavior/performance (not in any particular order):

* Nurse calls for additional help, provider, or rapid response.
* Situation-Background-Assessment-Recommendation (SBAR) is used to inform others of the situation when they arrive. Additional help might be attending physician, anesthesiology, nursing, or rapid response team.
* All team members call out critical patient information.
* Provider speaks to patient and support person or delegates to another team member to inform and answer questions.
* All team members use closed-loop communication and provide mutual support to one another.
* Leader may call team huddle.
* Team initiates appropriate clinical response per any protocols, checklists, or cognitive aids.

**Trigger #3**

Patient starts to have a tonic/clonic seizure.

**Clinical information provided on cards (one at a time) in response to assessment actions taken by team. For example, after team measures BP, the BP value is provided to team on a card.**

Pulse 60

BP 170/105

Temp 37.2

O2 Saturation 93% on room air

FHR 120 Category II with minimal variability and variable decelerations to 70.

Generalized tonic/clonic seizure activity.

*The facilitator may provide answers to the team as needed to help maintain the flow of the simulation. This may include providing interval maternal and fetal assessments in response to team actions. This may vary to include various FHR patterns, and maternal physical assessments.**The facilitator**allows the patient to continue to seize while the team attempts various measures to address.*

**Distractors**

Partner is overwhelmed and feels faint. “I think I’m going to throw up.”

## Expected behavior/performance (not in any particular order):

* Provider calls for additional help or a rapid response.
* Situation-Background-Assessment-Recommendation (SBAR) is used to inform others of the situation when they arrive. Additional help might be attending physician, anesthesiology, nursing, or rapid response team.
* All team members call out critical patient information.
* Provider clearly demonstrates leadership role.
* Provider speaks to support person or delegates to another team member to inform and answer questions.
* Team initiates appropriate clinical response per any protocols, checklists, or cognitive aids.
* Leader may call team huddle.
* All team members use closed-loop communication and provide mutual support to one another.

**Trigger #4**

*When appropriate during the unfolding scenario (after team has huddled, additional help has arrived, and next steps in patient management are decided):*

Tonic-clonic seizure activity stops.

**Clinical information provided on cards (one at a time) in response to assessment actions taken by team. For example, after team measures BP, the BP value is provided to team on a card.**

Pulse 60

BP 135/90

Temp 37.2

O2 Saturation 93% on room air

FHR 110 Category II with minimal variability and intermittent late decelerations.

DTRs 3+, no clonus

*The facilitator may provide answers to team as needed to help maintain the flow of the simulation. This may include providing interval maternal and fetal assessments in response to team actions. This may vary to include various FHR patterns, maternal physical assessments, etc.*

*Facilitator ends the simulation after no further opportunities for teamwork and communication are apparent.*

## Expected behavior/performance (not in any particular order):

* SBAR is used to inform others of the situation when they arrive. Additional help might be attending physician, anesthesiology, nursing, or rapid response team.
* All team members use closed-loop communication and provide mutual support to one another.
* Leader calls a team huddle to establish a plan of care based on fetal and maternal clinical assessments.

# Sample Scenario Preeclampsia and Seizure *In Situ* Simulation Assessment Tool (Optional)

This tool provides a list of expected behaviors in response to the Clinical Context and each set of Triggers and Distractors in the simulation and can be used as a tool in evaluating the performance of the simulation participants.

Trigger 1: Patient Headache

| Targeted Behavioral Response | Observed | Not Observed | Notes |
| --- | --- | --- | --- |
| Nurse reassures patient and partner. |  |  |  |
| Nurse reassesses maternal and fetal status |  |  |  |

Trigger 2: Critical Lab Results

| Targeted Behavioral Response | Observed | Not Observed | Notes |
| --- | --- | --- | --- |
| Nurse calls for additional help, provider, or rapid response. |  |  |  |
| SBAR is used to inform others of the situation when they arrive. |  |  |  |
| All team members call out critical patient information. |  |  |  |
| Provider speaks to patient and support person or delegates to another team member to inform and answer questions. |  |  |  |
| All team members use closed-loop communication and provide mutual support to one another. |  |  |  |
| Leader may call team huddle or continue to direct care. |  |  |  |
| Team initiates appropriate clinical response per any protocols, checklists, or cognitive aids. |  |  |  |

Trigger 3: Patient Seizes

| Targeted Behavioral Response | Observed | Not Observed | Notes |
| --- | --- | --- | --- |
| Provider calls for additional help or a rapid response. |  |  |  |
| SBAR is used to inform others of the situation when they arrive. |  |  |  |
| All team members call out critical patient information. |  |  |  |
| Provider clearly demonstrates leadership role. |  |  |  |
| Provider speaks to support person or delegates to another team member to inform and answer questions. |  |  |  |
| Team initiates appropriate clinical response per any protocols, checklists, or cognitive aids. |  |  |  |
| Leader may call team huddle. |  |  |  |
| All team members use closed-loop communication and provide mutual support to one another. |  |  |  |

Trigger 4: Creating a Plan

| Targeted Behavioral Response | Observed | Not Observed | Notes |
| --- | --- | --- | --- |
| SBAR is used to inform others of the situation when they arrive. |  |  |  |
| All team members use closed-loop communication and provide mutual support to one another. |  |  |  |
| Leader calls a team huddle to establish a plan of care based on fetal and maternal clinical assessments. |  |  |  |

# Clinical Context, Triggers, and Distractors Formatted for Printing Separately

The Clinical Context, Triggers, and Distractors used in this simulation scenario are provided on the next several pages in a format suitable for printing on cardstock in preparation for facilitating this in situ simulation using printed cards. The printed cards can be handed to the simulated patient or participating staff members at appropriate intervals during the simulation.

Clinical Context

“Emilia Harper is a 20-year-old G1P0 at 34 weeks and 1 day gestational age admitted 2 hours ago with abdominal pain. Her prenatal history is unremarkable except for heartburn since the first trimester. She’s been unable to distinguish between epigastric pain or contractions. She denies a headache. I just checked her cervix and she is 1 cm/long. She’s contracting every 3-4 minutes.

"Her admitting blood pressure was 150/100, but she’s rested and they’ve come down. Pulse 88, temp 98.6, resp rate16, FHR [fetal heart rate] 145, Category I. Her Hgb [hemoglobin] on admission was 11.8. She dipped 2+ protein in her urine and she has a Foley catheter since she couldn’t go on her own.

"Dr. Smithson is concerned about preeclampsia and has ordered some labs, which haven’t come back. She wanted to assess her for 2 hours, so she should call any minute. Her IV [intravenous line] is running at 125 ml/hour 0.5 normal saline.”

*Additional Narrative [if needed]:*

“I’m not sure why, but the lab said they are really busy right now and they should be back any minute. Labs ordered were ALT [alanine aminotransferase], AST [aspartate aminotransferase], platelets, uric acid, BUN [blood urea nitrogen] and creatinine.”

Trigger #1

Patient: “You know, the other nurse asked me if I had a headache, and I didn’t at first, but I do have one now.”

Patient further shares the following complaints:

“My headache is really bothering me. Can I get some medicine?”

Clinical information to be provided to team in response to their assessment after trigger #1

Pulse 90

BP [blood pressure] 140/90

Temp 37.2

O2 Saturation 98% on room air

FHR 145 Category I with variability and no decelerations

DTRs 3+, no clonus.

Distractors (Trigger #1)

* Patient: “I’m really hungry. Can I get something to eat?”
* Partner mentions that the other nurse mentioned something about preeclampsia. Partner wants to understand preeclampsia.

“Why does it happen? She doesn’t seem very sick.”

* Partner receives many cell phone calls.

Trigger #2

*Lab staff call patient’s nurse with a critical test result:*

* Platelets 98,000
* AST 44
* ALT 56
* BUN, creatinine, and uric acid not back

Clinical information to be provided to team in response to their assessment after trigger #2

Pulse 100

BP 160/102

Temp 37.2

FHR 145 Category I

DTRs [deep tendon reflexes] 3+, no clonus

Patient with right-sided epigastric tenderness.

Distractors (Trigger #2)

* Patient holds top of abdomen and moans in pain.
* Partner doesn’t understand what’s going on. “Is she in labor?”
* Partner updates family by phone.

Trigger #3

Patient starts to have a tonic/clonic seizure.

Clinical information to be provided to team in response to their assessment after trigger #3

Pulse 60

BP 170/105

Temp 37.2

O2 Saturation 93% on room air

FHR 120 Category II with minimal variability and variable decelerations to 70.

Generalized tonic/clonic seizure activity.

Distractors (Trigger #3)

* Partner is overwhelmed and feels faint.

“I think I’m going to throw up.”

Trigger #4

Tonic-clonic seizure activity stops.

Clinical information to be provided to team in response to their assessment after trigger #4

Pulse 60

BP 135/90

Temp 37.2

O2 Saturation 93% on room air

FHR 110 Category II with minimal variability and intermittent late decelerations.

DTRs 3+, no clonus

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