**Purpose of the tool:** The Umbilical Cord Prolapse 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 Umbilical Cord Prolapse In Situ Simulation, participants will be able to do the following:

* Demonstrate effective communication with the patient and support person during a delivery complicated by umbilical cord prolapse.
* 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 intervention for a delivery complicated by umbilical cord prolapse.
* Demonstrate the efficient use of checklists, protocols, or similar cognitive aids for responding to a delivery complicated by umbilical cord prolapse.

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

**How to use this tool:** This tool should be used in connection with “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**: Several commercial entities also offer sample simulation scenarios or drills related to umbilical cord prolapse and include a focus on technical/clinical skills of assisted vaginal delivery. They may require a mannequin or high-fidelity birthing simulator. A sample of the commercially developed resources includes the following:

* CAE Fidelis™ Maternal Fetal Simulator (CAE Healthcare): <http://www.caehealthcare.com/patient-simulators/maternal-fetal-childbirth-simulator>
* NOELLE® (Gaumard): <http://www.gaumard.com/s551>
* MamaNatalie® Birthing Simulator (Laerdal): <http://www.laerdal.com/us/mamaNatalie>
* PROMPT Birthing Simulator (Laerdal): <http://www.laerdal.com/us/doc/224/PROMPT-Birthing-Simulator>
* Various birthing simulators (Klinger Medical): <http://www.klingermedical.com/Simulators-Trainers/ob-gyn-simulators-teaching-manikins/birthing-simulators>

**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 Umbilical Cord Prolapse In Situ Simulation

This document provides a sample scenario for anin situ simulation for umbilical cord prolapse. This document contains the following:

* Preparation Required
* Clinical Context, Triggers, Distractors, and Expect Behaviors for the Simulation
* Umbilical Cord Prolapse Simulation Assessment Tool
* Clinical Context, Triggers, and Distractors Formatted for Printing Separately

Refer to the document titled “Facilitation Instructions for Conducting In Situ Simulations” 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 a delivery complicated by umbilical cord prolapse.

# 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:

* Pelvic model for performing maneuvers. For most in situ simulations, the equipment available in the course of routine care should be used. However, pelvic models and props may be needed to substitute for actual medication, blood products, or physical maneuvers on a patient. It is important to plan for transporting simulation equipment to/from unit. If possible, equipment should be stored in the L&D unit where the simulations will take place. If not, time should be set aside for transport, setup, and dismantling.
* Fetal heart rate (FHR) simulator or FHR strips for teams to assess. Simulator should be capable of simulating a Category I tracing and a prolonged FHR deceleration. If a simulator is not available, old FHR paper strips can be used.
* Simulated intravenous (IV) fluids and oxygen mask. The team should order and access simulated fluids and oxygen in the way it would normally 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.

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**

*Provide 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.*

“Christine Joseph, a 37-year-old G4 P3, is at 39 weeks gestation. She is dilated 8 cm with intact membranes and has received regional anesthesia.

"Vital signs assessed 15 minutes ago: Pulse 81, BP [blood pressure] 118/71, Resp Rate 20, Temp 37.1. FHR 135 with moderate variability and no decelerations. She is accompanied in the L&D room by her husband.”

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

* Nurse introduces self to the patient and begins assessment.

**Trigger #1**

*Patient volunteers information to assessing nurse:*

“My water just broke.”

*Patient moans with every contraction, requests pain medication.*

**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 90

BP 120/80

FHR 125 with moderate variability, no decelerations.

Obvious signs of ruptured membranes, no vaginal bleeding.

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

**Distractors**

Partner appears anxious.

Partner asks nurse for pain medication for his wife.

Partner asks when the baby will be delivered.

Partner asks questions, does not hear answers, does not understand medical jargon.

Partner is very verbal.

## Expected behavior/performance:

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

**Trigger #2**

FHR, which had been 140, begins to fall. A prolonged deceleration occurs.

**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 110

BP 90/65

Resp Rate 20

Temp 37.6 C

O2 Saturation 97% on room air

*The facilitator may provide answers to team as needed to help maintain the flow of the simulation. Continued fetal deceleration should continue while the team attempts various measures to address.*

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

* Nurse calls for additional help, provider, or a rapid response.
* Situation-Background-Assessment-Recommendation (SBAR) is used to inform others of the situation when they arrive. Additional help might be provided by attending physician, anesthesiology, nursing, or rapid response team.
* Provider clearly demonstrates leadership role.
* Provider speaks to patient and partner 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.
* All team members call out critical patient information.
* Team considers etiology for deceleration and performs appropriate diagnostic measures (e.g., vaginal exam).

**Trigger #3**

*When appropriate during the flow of the simulation, facilitator provides card to provider or nurse (whoever performs the vaginal exam):*

Patient is complete, and fetus is at 0 station; a pulsating umbilical cord is felt.

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

Pulse 108

BP 92/70

Resp Rate 16

O2 Saturation 97% on room air

FHR 90, prolonged deceleration continues

*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, physical assessments, etcetera. The umbilical cord prolapse should continue while the team attempts various measures to address.*

*The simulation can end after definitive plan for patient care is put into place (for example, transition to OR [operating room]), and no further opportunities for teamwork and communication are apparent.*

**Distractors**

Partner is continually asking what is happening.

Partner shows agitation with so many people coming into the room.

Partner gets very emotional and starts crying when team suggests movement to the OR for cesarean section. *“Is the baby going to be all right? We don’t want to have to do a cesarean section. We want a* *natural birth.”*

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

* Provider or nurse informs everyone of prolapsed cord.
* Provider calls for additional help or a rapid response .
* Provider speaks to patient and partner or delegates to another team member to inform and answer questions.
* SBAR is used to inform others of the situation when they arrive. Additional help might be attending physician, anesthesiology, nursing, or rapid response team.
* Provider makes determination of whether safe vaginal delivery can occur.
* Team initiates appropriate clinical response per any protocols, checklists, or cognitive aids.
* Provider clearly demonstrates leadership role.
* All team members use closed-loop communication and provide mutual support to one another.
* All team members call out critical patient information.
* Leader calls for team huddle.

Umbilical Cord Prolapse 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: Spontaneous Rupture of Membranes

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

Trigger 2: Prolonged Fetal Heart Rate Deceleration

| Targeted Behavioral Response | Observed | Not Observed | Notes |
| --- | --- | --- | --- |
| Nurse calls for additional help, provider, or a rapid response.  |  |  |  |
| SBAR is used to inform others of the situation when they arrive.  |  |  |  |
| Provider clearly demonstrates leadership role. |  |  |  |
| Provider speaks to patient and support person or delegates someone to inform and answer questions. |  |  |  |
| All team members use closed-loop communication and provide mutual support.  |  |  |  |
| All team members call out critical patient information. |  |  |  |
| Team considers etiology and performs appropriate diagnostic measures. |  |  |  |

Trigger 3: Umbilical Cord Prolapse Identified

| Targeted Behavioral Response | Observed | Not Observed | Notes |
| --- | --- | --- | --- |
| Provider or nurse informs everyone of prolapsed cord. |  |  |  |
| Provider calls for additional help or a rapid response. |  |  |  |
| Provider speaks to patient and partner or delegates to another team member to inform and answer questions. |  |  |  |
| SBAR is used to inform others of the situation when they arrive.  |  |  |  |
| Provider makes determination whether safe vaginal delivery can occur within an appropriate amount of time. |  |  |  |
| Team initiates appropriate clinical response per any protocols, checklists, or cognitive aid. |  |  |  |
| Provider clearly demonstrates leadership role.  |  |  |  |
| All team members use closed-loop communication and provide mutual support.  |  |  |  |
| All team members call out critical patient information. |  |  |  |
| Leader calls for team huddle.  |  |  |  |

# 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

“Christine Joseph, a 37-year-old G4 P3, is at 39 weeks gestation. She is dilated 8 cm with intact membranes and has received regional anesthesia.

"Vital signs assessed 15 minutes ago: Pulse 81, BP [blood pressure] 118/71, Resp Rate 20, Temp 37.1. FHR [fetal heart rate] 135 with moderate variability and no decelerations. She is accompanied in the L&D [labor and delivery] room by her husband.”

Trigger #1

Patient: “My water just broke.”

Patient moans with every contraction, requests pain medication.

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

Pulse 90

BP 120/80

FHR 125 with moderate variability, no decelerations.

Patient has obvious signs of ruptured membranes, but no vaginal bleeding.

Distractors (Trigger #1)

* Partner appears anxious.
* Partner asks nurse for pain medication for his wife.
* Partner asks when the baby will be delivered.
* Partner asks questions, does not hear answers, does not understand medical jargon.
* Partner is very verbal.

Trigger #2

FHR, which had been 140, begins to fall. A prolonged deceleration occurs.

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

Pulse 110

BP 90/65

Resp Rate 20

Temp 37.6 C

O2 Saturation 97% on room air

Trigger #3

Patient is complete, and fetus is at 0 station; you can feel a pulsating umbilical cord.

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

Pulse 108

BP 92/70

Resp Rate 16

O2 Saturation 97% on room air

FHR 90, prolonged deceleration continues

Distractors (Trigger 3)

Partner is continually asking what is happening.

Partner shows agitation with so many people coming into the room.

Partner gets very emotional and starts crying when team suggests movement to the OR [operating room] for cesarean section.

“Is the baby going to be all right? We don’t want to have to do a cesarean section. We want a natural birth.”

AHRQ Publication No. 17-0003-22-EF

May 2017