



## **Maternal 911 in Action: Shoulder Dystocia**

"Healthcare organizations should find ways to adapt to the learning tools or initiatives used in high reliability organizations following safety incidents. It is challenging to recommend any specific one as all learning tools have shown considerable promise. However, the way these tools or initiatives are implemented is critical, and so further work is needed to explore how to successfully embed them into healthcare organizations so that everyone at every level of the organization embraces them." (*Serou, et al., 2021*).

### **Is Something About to Happen?**

The objective of Maternal 911 in Action is to put real-life events into practice with the management of each step prior to an actual event. This is not a test of individuals. This is an opportunity to strengthen the process, to identify and fix gaps within the unit and to improve teamwork, communication and overall reliability.

Every healthcare scenario aims to be as realistic as possible ideally involving the members of the team that would be present during an actual event. Even consider involving another colleague to simulate a family member.

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A 911 in Action drill should be practiced in a room consistent with where an actual event would occur. This will make the drill efficient in helping participants familiarize themselves with the room set-up, equipment location, and medication available helping participants to identify improvements in their location for faster retrieval in a real event.

911 in Action is to be as hands-on as possible.

Following the practice event, the team should discuss what went well, what could be improved, what needs to be changed regarding equipment, supply location, and questions answered so each member has a clear understanding of the event and management.

Reference: Serou, N., Sahota, L. M., Husband, A. K., Forrest, S. P., Slight, R. D., & Slight, S. P. (2021). Learning from safety incidents in high-reliability organizations: a systematic review of learning tools that could be adapted and used in healthcare. *International Journal for Quality in Health Care*, 33(1).



## Maternal 911 in Action Steps to Preparedness

1. Please have conversations with your risk team to have non-discoverable status; this may ensure that protected documents and items cannot be used in a court of law during a malpractice suit.
  - This process is best determined by the hospital attorney or the Risk Management Department and needs to be in place before simulation occurs.
  - Simulations and findings may also be considered a quality improvement project and be protected in the same manner other such projects are.
  - Once a process is determined, simulation instructors need to be familiar with how to protect simulations and findings along with consequences of not following the process.
  - Instructors are responsible for explaining what non-discoverable status is to trainees, ensure all in simulation follow the process and understand the consequences violating the process.
2. Simulations are a safe place to learn; therefore, confidentiality is a key part of training.
  - Everyone attending the simulation training must sign a confidentiality form stating they will not discuss the events of the scenario and debriefing (obtain from legal/risk).
  - Whether mistakes are made, or performance is excellent, each trainee needs to understand that anyone at the session from instructors to other trainees to observers will not discuss their performance outside of the training session.
  - Issues that are uncovered for quality improvement will be described, but not attributed or linked with any specific individual.
3. The drill should be as realistic as possible:
  - Mannequins or individuals may be used.
  - Equipment and supplies should be available.
  - Even consider having a colleague simulate a family member.
4. Drills should meet department or unit needs and practices using current evidence-based practice.
5. Those who attend should be the team members who would provide care during an actual event.
6. Explanation of the process should be understood prior to initiation of the action:
  - Provide a case scenario.
  - Participants understand their role is to respond as would be done during an actual event.
  - Individuals should know that the patient's outcome will be based upon their actions.
7. The trainer will provide scenario outcomes in events as participants work through the drill and redirect as appropriate.
8. All procedure performances will be demonstrated through discussion, so the team will be aware of the time and supplies needed for successful completion.
9. Following the event, the team will discuss the process:
  - Debriefing provides a powerful and essential structure for maintaining learning capacity.
  - The team can evaluate what worked well and identify needed improvements.
  - This may include adding or removing equipment, supplies, and medication, etc.
10. Repeating the drill may be necessary until all members are functioning proficiently within their scope of practice.
11. The trainer will have the participant(s) go through the drill until they are competent in the topic and health care delivery.



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Data from completing the modules may be used in research and publications with privacy maintained.

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# **Maternal 911 in Action**

## **Case Scenario to Post**

### **Shoulder Dystocia**

Disclaimer: The objective of 911 in Action is to put real-life events in to practice with the management of each step prior to an actual event. This is not a test of individuals. This is an opportunity to strengthen the process, to identify and fix gaps within the unit and to improve teamwork, communication, and overall reliability.

**Dee, a 22-year-old primigravid woman is at 40 weeks 3 days gestation and in active labor upon EMS arrival. She is 5 feet (60 inches) tall and weighs 187 pounds (85 kg) with a BMI of 36.5. States she has the urge to push, the baby feels like it is right there, but will not come out. Upon inspection of the perineum, the head is on the pelvic floor. The time is 1001.**



# Trainer's Form

## Maternal 911 in Action

### Case Scenario Shoulder Dystocia

#### Supplies:

- Printed cases (with answers) for the trainer.
- Print copies of the shoulder dystocia maneuvers at the end of this document to distribute to the team (each person learns and remembers differently, so options are available to improve recall)
- Pelvic model if available
- Fetal doll
- Vacuum extractor or Forceps (optional)
- Consents for participants to sign regarding confidentiality (from legal/risk)
- Consider printing the shoulder dystocia algorithm (page 10) and the maneuvers (page 11) for each participant
- Consider printing the Simulation Based Training Analysis Template (page 12) for your documentation of needed changes
- Please have the QR code available for participants to scan once the simulation is complete (page 13)

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**Dee, a 22-year-old primigravid woman is at 40 weeks 3 days gestation and in active labor upon EMS arrival. She is 5 feet (60 inches) tall and weighs 187 pounds (85 kg) with a BMI of 36.5. States she has the urge to push, the baby feels like it is “right there, but will not come out”. Upon inspection of the perineum, the head is on the pelvic floor. The time is 1001.**



**Family member: “Why did the head do that? Why isn’t the baby coming? Is it stuck? What are you going to do? GET THE BABY OUT!”**

Ask the following paragraphs in the left column and more prompts in right column.

911 in Action	Discussion
<p>You recognize the possibility of a shoulder dystocia. Inform the staff with you of this physical exam finding. What is the next action?</p>	<p>Upon recognition of shoulder dystocia, you realize any delay in delivery could result in fetal asphyxia.</p>
<p>Ask the woman to stop her pushing efforts.</p>	<p>It is important to immediately ask the woman to stop her pushing efforts until maneuvers to relieve the impacted shoulder are carried out. The shoulder may further impact with her continued pushing.</p>
<p>McRoberts maneuver is initiated: hyperflexion of the maternal thighs onto her abdomen.</p>	<p>Steps to be demonstrated by the team.  <b>Observe:</b>            No pulling on the fetal head.            No pushing on the maternal abdomen (no fundal pressure). Suprapubic pressure is appropriate but never fundal pressure.            Coordinated team approach. All focused on the common purpose of relieving the impacted shoulder</p>
<p>The emergency service provider should apply suprapubic pressure to help resolve anterior fetal shoulder impaction.</p>	<p>Suprapubic pressure is applied with the heel of clasped hand from the posterior aspect of the anterior shoulder towards the fetal nose to cave the fetal shoulder girdle, this will help to dislodge the shoulder (Mazzanti maneuver). Apply steady pressure first and if unsuccessful, apply rocking pressure.            Do NOT use fundal pressure.</p>

**1003 The shoulders remain impacted.**



**Family member: “Push on her belly or reach your hand up in there and get this baby out. Do something or the baby is going to die!! Why aren’t you doing anything? MAKE HER PUSH!”**

911 in Action	Discussion
Reposition her in a lateral position or on her hands and knees.	Changing position may resolve the impacted shoulder. She may need to be repositioned several times.

**1005 Dee is crying and asks why her baby is not born. The shoulders are still not delivered.**

**Family member: “GET THIS BABY OUT OR YOU’RE GOING TO KILL HER TOO!”**

911 in Action	Discussion
Medical personnel communicate to Dee and have her focus while they explain what is happening.	Ask the participants how they would handle this situation and what would they say to the couple?
Reposition her again in the supine position, bring the legs back into McRoberts position, and again apply suprapubic pressure.	Team members demonstrates or describes the techniques.

**1006 a baby is born. After stimulation and suctioning he begins to cry vigorously. Apgar scores 9<sup>a</sup> and 9<sup>s</sup>**



**After shoulder dystocia is resolved and infant is delivered, trainer will ask the following:**

1. What are the risk factors for shoulder dystocia? What is the process to communicate the risks to other team members?
  - History of delivering another child with shoulder dystocia; about 10% will have recurrence
  - History of prior macrosomia newborn or suspected macrosomia in current pregnancy
  - Diabetes
  - Short stature
  - Maternal obesity
  - Multiparity
  - Advanced maternal age
  - Maternal pelvic shape/size
  - Excessive maternal weight gain
  - Male fetus
  - Dysfunctional labor pattern
  - Fetal malposition
  - Operative vaginal delivery
  - Labor induction
  - Epidural analgesia
  
2. What will occur next?
  - a. Inspect the perineum for lacerations/trauma
  - b. Inspect the newborn for trauma.
    - i. Fracture of the clavicle or humerus
    - ii. Erb's palsy
    - iii. Cervical spine injury
  
3. Discuss the importance of documenting the time of:
  - a. Head delivery
  - b. Body delivery
  - c. Identification of the anterior shoulder, fetal right or left
  - d. Discuss with the patient and her family
  - e. Documentation of the event with details of times with body parts (a-c)



**After the Maternal 911 in Action drill, trainer leads team through the debriefing process:**

1. What went well for the team?
2. What did we learn through this drill?
3. What would we do differently in a real-life situation?
4. Did we have any issues; equipment, processes, communication, understanding?
5. Who is going to follow-up to resolve the problems and/or contact those who need to assist in making changes?
6. What time frame will be allowed for completion of this project?
7. How will changes be communicated to the team?

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# MATERNAL 911

**SHOULDER DYSTOIA IS RECOGNIZED - CALL FOR HELP**

- Instruct patient to STOP pushing - continued pushing may worsen the impaction
- Consider an episiotomy - will not relieve the obstruction, but can make access for maneuvers easier

**McRobert's Maneuver**  
(knees to nipples)  
Success rate of 90% & even higher when combined with Suprapubic Pressure

**Suprapubic Pressure**  
With routine axial traction [keeping fetal head in align with fetal spine] avoiding lateral and downward traction

Try either maneuver first depending on clinical circumstances and operator experience

Call consultant Obstetrician

**Extreme Maneuvers**  
-Fetal clavicular fracture  
-Symphysiotomy  
-Zavanelli (returning fetal head into the pelvis for cesarean delivery)

**Post Delivery:**  
-Actively manage third stage (due to increased PPH risk)  
-Debrief the delivery person and birth partner  
-Have neonate examined for brachial plexus injury

**DOCUMENT**

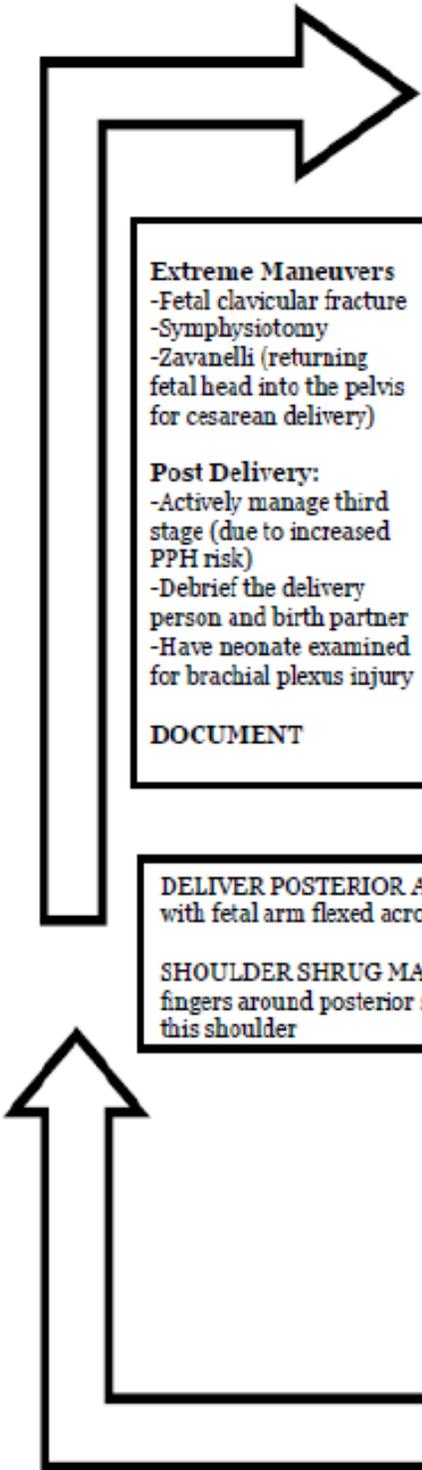
**DELIVER POSTERIOR ARM** (swimmers move with fetal arm flexed across fetal chest)

**SHOULDER SHRUG MANEUVER** by looping fingers around posterior shoulder and 'shrug' this shoulder

**INTERNAL ROTATION MANEUVERS**  
-Rotate the posterior shoulder (always towards the fetal nose)  
-Rotate the anterior shoulder (towards the fetal nose)

If appropriate:  
-ALL FOURS POSITION (Gaskin's maneuver)  
-RUNNING START (maternal foot forward by hand from the all fours position)

Repeat all maneuvers starting at the top.  
Consider the episiotomy if not already performed



## Maternal 911 in Action

HELP! A shoulder dystocia is occurring! Following are maneuvers to assist in resolution of a shoulder dystocia.

### Call for help & STOP maternal pushing

Call for help so others can assist with tasks to resolve the shoulder dystocia. If a surgery team is not readily available at your facility, call them to arrive ASAP. Further maternal pushing may worsen the impaction.

- 1 Flex the hips (McRoberts maneuver)**  
Flexing the hips onto the abdomen can shift the pelvis and allow the fetal shoulder to dis-impact. Hips typically remain flexed with each maneuver.


- 2 Suprapubic pressure**  
Pushing at the suprapubic area, towards the fetal nose, can help rotate the fetal shoulders and release the impacted fetal shoulder. This can be repeated with each maneuver.
- 3 Delivery of the poster arm**  
This can release an impacted anterior fetal shoulder. Often called the swimmer's move. To deliver, the arm should be abducted across the fetal abdomen. If time allows, a Foley catheter could be fed under the fetal axilla, then with gentle traction across the fetal chest to deliver this posterior arm.
- 4 Evaluate for an episiotomy**  
The episiotomy alone would not resolve the impaction, but if more room is needed to perform the maneuvers it may be warranted.


- 5 Rotate the posterior shoulder**  
Applying pressure to the posterior fetal shoulder, caving in the shoulder girth, can rotate the fetus enough to dis-impact the anterior fetal shoulder
- 6 Rotate the anterior shoulder**  
The anterior fetal shoulder can have pressure applied to help rotate it out from under the pubic symphysis. Typically rotating towards the fetal nose has the best results, but the opposite pressure has also helped, just not as common. During this emergency, if one doesn't work, try the other.
- 7 Shoulder shrug maneuver**  
The shoulder shrug technique involves shrugging the posterior shoulder and rotating the head-shoulder unit 180 degrees to resolve the shoulder dystocia.


- 8 All fours (Gaskin's maneuver)**  
Moving the mother into all fours position may shift the pelvis and fetus allowing the shoulder dystocia to be resolved and the delivery to be accomplished.
- 9 Running start maneuver**  
From the all fours position, move the maternal foot that is along the 'back' of the fetus to the maternal hand; much like runner's do on a track to start a race.


- 10 Extreme maneuvers that are very rarely used**

  - Cleidotomy, fracture of the fetal clavicle
  - Symphysiotomy, cutting the pubic symphysis
  - Zavanelli; placing the fetal head back into the pelvis and performing an immediate emergency cesarean delivery.



# SIMULATION-BASED TRAINING ANALYSIS TEMPLATE

[Blank space for additional information]

**Topic of SBT:** [Blank space]

**Date(s) of training:** [Blank space]

**Number of trainees:** *This section can be broken down by discipline or job title if this is relevant to the findings*

## 1. METRICS

METRIC	FINDING	COMMENTS
(Example) Time Anesthesiologist called to time in room	(Example) 6 minutes	(Example) Anesthesiologist needs pager that works in the OR to decrease response time to OB

## 2. SYSTEMS ISSUES AND PROCESSES UNCOVERED

ISSUE OR PROCESS	REPORTED TO	SUGGESTION FOR IMPROVEMENT
(Example) Instrument labeled incorrectly	(Example) Unit manager and sterile supply dept	(Example) Inform OB surgical staff of incorrect label, have 2 sets in case one is incorrect



To help the Maternal 911 team improve simulations please have your team scan the QR code to complete a post simulation survey.

