**Purpose of the tool:** This tool describes the key perinatal safety elements related to the safe management of a delivery complicated by a shoulder dystocia. The key elements are presented within the framework of the Comprehensive Unit-based Safety Program (CUSP).

**Who should use this tool:** Nurses, physicians, midwives, and other labor and delivery (L&D) staff responsible for managing a delivery complicated by shoulder dystocia.

**How to use this tool:** Review the key perinatal safety elements with L&D leadership and unit staff to determine how elements will be implemented on your L&D unit. Consider any existing facility policies or processes related to shoulder dystocia. Consider using standing orders, preprinted checklists, and staff simulation training to support implementation. A sample of how some of these key perinatal safety elements can be incorporated into a unit approach to shoulder dystocia is provided in the Appendix of this tool.

# Key Perinatal Safety Elements

***Standardize When Possible (CUSP Science of Safety)***

| **Key Perinatal Safety Elements** | **Examples** |
| --- | --- |
| Use a predetermined approach to management of a shoulder dystocia approved by unit leadership. | * Unit uses an established approach to managing and documenting episodes of shoulder dystocia. This approach can include—
	+ Care provider clearly stating the concern for shoulder dystocia
	+ Communication to others for assistance to put plan for safe delivery into place
	+ Role designation of staff (e.g. recorder, patient/family communicator)
	+ Clinical maneuvers and directed maternal pushing[1](#_ENREF_1),[2](#_ENREF_2)
	+ Recording time of dystocia identification, and time of maneuvers as performed
	+ Episode documentation elements[3](#_ENREF_3)
 |

***Standardize When Possible (CUSP Science of Safety) (continued)***

| **Key Perinatal Safety Elements** | **Examples** |
| --- | --- |
| Standardize communication of information during episode. | * Care provider calls out concern for or diagnosis of shoulder dystocia, reducing error through an anticipated and coordinated approach.
* Team members—
	+ Use callouts with fetal condition per National Institute for Child Health and Human Development electronic fetal monitoring nomenclature at standard intervals[4](#_ENREF_4)
	+ Use callouts as each clinical maneuver is attempted
	+ Use callouts for number of minutes that have passed since diagnosis
 |

***Create Independent Checks (CUSP Element)***

| **Key Perinatal Safety Elements** | **Examples** |
| --- | --- |
| Use cognitive aids such as checklists, algorithms, or protocols to guide a systematic approach to management and documentation of shoulder dystocia. | * Cognitive aids such as checklists, algorithms, or protocols may improve clinical team response and management of shoulder dystocia. Such aids can provide clinical teams with an independent check on steps for facilitating a safe delivery by offering logic and a clear focus during what can often be a chaotic event.
	+ Several examples of checklists or protocols are available. The evidence does not support one specific checklist, algorithm, or protocol over any other; the important aspect is that teams have a shared mental model regarding the unit-established approach and are skilled at efficiently using it to support clinical care and documentation during an episode of shoulder dystocia.[3](#_ENREF_3),[5-8](#_ENREF_5)
	+ A sample checklist that operationalizes key safety elements is provided in the Appendix of this tool. This sample is an example, and units can modify it to as needed based on unit preferences.
 |

***Learn From Defects (CUSP Element)***

| **Key Perinatal Safety Elements** | **Examples** |
| --- | --- |
| Debrief and analyze near misses and adverse events related to shoulder dystocia. | * A unit can decide its approach to debriefing events based on seriousness of event, expertise available, and data monitoring and tracking capabilities.
	+ Informal debriefings by clinical team immediately following event using an approach that does not shame or blame individuals. This allows for understanding of what went well, what could have gone better, and what could be done differently next time.
	+ A regular forum with a multidisciplinary team to learn from defects and sensemaking:
		- Discovery form
		- Root cause analysis
		- Eindhoven model
		- Failure mode and effects analysis
		- Probabilistic risk assessment
		- Causal tree worksheet
		- Interdisciplinary case reviews
 |
| Have a process in place to review severe maternal or neonatal morbidity and mortality events.  | * Unit can decide its approach to reviewing cases of severe maternal or neonatal morbidity or mortality. This might include an existing medical peer review process or review by a perinatal safety or quality committee.
* A sample process and forms for a committee review are available at the Council on Patient Safety in Women’s Health Care.
	+ Main Web site: [www.safehealthcareforeverywoman.org](http://www.safehealthcareforeverywoman.org)
	+ Resource name: *Process for Reviewing Severe Maternal Morbidity Event*
	+ Select: “Get SMM Form” menu
 |
| Share outcomes or process improvements from the informal (debriefing) and formal analysis with staff to achieve transparency and organizational learning. | * Sites can decide how often, how much, and with whom this information will be shared and whether this is specified in a unit policy or is handled more informally.
 |

***Simulation (SPPC Program Pillar)***

| **Key Perinatal Safety Elements** | **Examples/Customizable Components** |
| --- | --- |
| Sample scenario:* Shoulder dystocia
 | * Shoulder dystocia training can be effective at reducing adverse outcomes.[6](#_ENREF_6),[9](#_ENREF_9),[10](#_ENREF_10)
* A sample scenario available through the AHRQ Safety Program for Perinatal Care (SPPC) can be used to train teams on the key perinatal safety elements related to a team approach to shoulder dystocia management. This scenario reinforces teamwork and communication related to—
	+ situational awareness,
	+ ability to get additional help quickly,
	+ use of cognitive aids (e.g., checklists, protocols) for guiding clinical management and documentation,
	+ communication with rapid responders,
	+ communication with patient/family, and
	+ use of briefings, huddles, and debriefings.
* Several professional organizations, initiatives, or commercial entities also offer sample simulations scenarios or “drills” related to shoulder dystocia; many of these focus on technical/clinical skills of performing maneuvers and may require a mannequin or high-fidelity birthing simulator. Several commercially available birthing simulators are available including:
	+ CAEFidelis™ 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>
 |

***Teamwork Training (TeamSTEPPS®)***

| **Key Perinatal Safety Elements** | **Examples** |
| --- | --- |
| Have situational awareness.  | Situational awareness refers to all staff caring for the patient—* knowing what the patient’s plan is through briefings and team management,
* being aware of what is going on and what is likely to happen next,
* verifying and checking back on information, and
* providing ongoing updates.

In the context of shoulder dystocia, this includes risk awareness for all patients, timely recognition of a shoulder dystocia diagnosis, awareness and monitoring of time since diagnosis, and discussing next steps if sequential maneuvers are not successful. |
| Use SBAR (**S**ituation, **B**ackground, **A**ssessment, and **R**ecommendation), callouts, huddles, and closed-loop communication techniques. | * Use SBAR, callouts, huddles, and closed-loop communication among team members. In the context of shoulder dystocia, these techniques are particularly useful—
	+ for communicating a sense of urgency when requesting other unit personnel and provider for help responding to an identified shoulder dystocia,
	+ for communicating changes in maternal or fetal status,
	+ when giving and receiving new orders to manage the dystocia,
	+ when briefing new care team members who arrive to support a rapid response, and
	+ when regrouping to discuss plan of care if primary maneuvers fail to relieve the dystocia.
 |
| Communicate during transitions of care. | Use of transition communication techniques assures a shared mental model of plan of care and patient risks between shifts or between units.  |
| Have high-reliability teams:* Anyone can sound an alarm, request help, or challenge the status quo.
* Hierarchy is minimized.
* Communication is continuous, valued, and expected.
 | Team members protect each other from work overload and place requests or offers for assistance in the context of patient safety. It is expected that assistance will be actively sought and offered. |

***Teamwork Training (TeamSTEPPS®) (cont’d)***

| **Key Perinatal Safety Elements** | **Examples** |
| --- | --- |
| Have high-reliability teams (continued) | * Team members will advocate for the patient when one person’s viewpoint does not coincide with another using team communication techniques:
	+ Assert a corrective action in a firm and respectful manner.
	+ Use CUS language: “I am **c**oncerned. I am **u**ncomfortable. This is a **s**afety issue.”
	+ Use the "two-challenge" rule, repeating concern, and asking whether you have been heard.
	+ Use a predetermined “stop the line” phrase.
* Team members manage conflict using a constructive positive approach to emphasize “what is right, not who is right”:
	+ **D:** Describe the specific behavior or situation.
	+ **E:** Express how the situation makes you feel or concerns you.
	+ **S:** Suggest other alternatives.
	+ **C:** Consequences stated in terms of team goals, not punishment.
 |

***Patient and Family Engagement (CUSP Module)***

| **Key Perinatal Safety Elements** | **Examples** |
| --- | --- |
| Communicate with patient and family during episode.  | * Patient and family are part of the team.
	+ Ensure a shared mental model with patient and family as well as the clinical team.
	+ Provider/RN speaks to patient and partner or delegates staff to do so regarding the urgency of the dystocia and what they need the patient to do as different maneuvers are done.
	+ Provide reassurance continuously.
 |
| Disclose any unintended outcomes. | Unit-established process for disclosing unintended outcomes. This may include the following:* Prompt, compassionate, and honest communication with the patient and family
* Investigation
* Ongoing communication with the patient and family
 |
| Disclose any unintended outcomes (cont'd) | * Apology and remediation
* System and process improvement
* Measurement and evaluation
* Education and training
 |

# References

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Appendix

*Every effort was made to ensure the accuracy and completeness of these resources. However, the U.S. Department of Health and Human Services makes no warranties regarding errors or omissions and assumes no responsibility or liability for loss or damage resulting from the use of information contained within.*

Sample Process for Shoulder Dystocia Management

[ ]  Step 1. Identify shoulder dystocia

[ ]  Failure to deliver the infant with gentle traction

[ ]  The “turtle sign” with retraction of the fetal chin and head to the maternal perineum

[ ]  Failure of restitution

[ ]  ***Call out time of identification of shoulder dystocia (hh:mm:ss) \_\_\_\_:\_\_\_\_:\_\_\_\_***

[ ]  Step 2. Call for help/activate emergency response

[ ]  Call for additional nurses, maternity care provider, and anesthesiology

[ ]  Call for pediatric provider at delivery (if not already present)

[ ]  Assign staff responsible for communication with patient and family

[ ]  Assign staff responsible for recording

[ ]  Step 3. Maneuver patient’s buttocks to edge of the birthing bed

*[Call time] (hh:mm:ss) \_\_\_\_:\_\_\_\_:\_\_\_\_*

[ ]  Step 4. McRoberts maneuver used concurrently with suprapubic pressure

*[Call time] (hh:mm:ss) \_\_\_\_:\_\_\_\_:\_\_\_\_*

[ ]  Step 5. Primary maneuvers [Call time for each maneuver]

Move sequentially through the primary maneuvers (rotational procedures, posterior arm delivery, all fours) in an efficient manner. No more than 30 seconds should be used with an individual maneuver before attempting the next one. Discuss the plan for delivery if primary maneuvers do not work.

[ ]  *Episiotomy (if needed)*

***[Call time] (hh:mm:ss) \_\_\_\_:\_\_\_\_:\_\_\_\_***

Rotational maneuvers

[ ]  Anterior shoulder

***[Call time] (hh:mm:ss) \_\_\_\_:\_\_\_\_:\_\_\_\_***

[ ]  Posterior shoulder

***[Call time] (hh:mm:ss) \_\_\_\_:\_\_\_\_:\_\_\_\_***

[ ]  *Delivery of posterior arm*

***[Call time] (hh:mm:ss) \_\_\_\_:\_\_\_\_:\_\_\_\_***

[ ]  All fours (also known as the Gaskin maneuver)

***[Call time] (hh:mm:ss) \_\_\_\_:\_\_\_\_:\_\_\_\_***

[ ]  Step 6. Secondary maneuvers – ONLY IF ABOVE FAIL *[Call time for each]*

[ ]  Purposeful clavicular fracture

***[Call time] (hh:mm:ss) \_\_\_\_:\_\_\_\_:\_\_\_\_***

[ ]  Cephalic replacement with cesarean section (also known as Zavanelli maneuver)

***[Call time] (hh:mm:ss)\_\_\_\_:\_\_\_\_:\_\_\_\_***

[ ]  Symphysiotomy ***[Call time] (hh:mm:ss) \_\_\_\_:\_\_\_\_:\_\_\_\_***

[ ]  Summary of delivery and documentation of sequence of maneuvers

Head delivered: (hh:mm:ss) \_\_\_\_:\_\_\_\_:\_\_\_\_

Shoulders delivered (hh:mm:ss) \_\_\_\_:\_\_\_\_:\_\_\_\_

Head to body delivery interval (seconds) \_\_\_\_\_\_\_\_\_\_

Time of birth (hh:mm:ss) \_\_\_\_:\_\_\_\_:\_\_\_\_

Anterior shoulder (left/right) Occiput left/occiput right

[ ]  McRoberts maneuver Maneuver #\_\_\_ Time spent\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Suprapubic pressure Maneuver #\_\_\_ Time spent\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Episiotomy Maneuver #\_\_\_ Time spent\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Rotational maneuvers

[ ]  Anterior shoulder Maneuver #\_\_\_ Time spent\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Posterior shoulder Maneuver #\_\_\_ Time spent\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Delivery of posterior arm Maneuver #\_\_\_ Time spent\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  All-fours position Maneuver #\_\_\_ Time spent\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Purposeful clavicular fracture Maneuver #\_\_\_ Time spent\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Cephalic replacement with C/S Maneuver #\_\_\_ Time spent\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Symphysiotomy Maneuver #\_\_\_ Time spent\_\_\_\_\_\_\_\_\_\_\_\_\_

[ ]  Providers present (include all)

Maternity care providers\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Nursing staff

Anesthesiology provider

Pediatric provider

Other

[ ]  Neonatal status

Birth weight (grams)

Outcome: [ ]  Deceased [ ]  Live birth

Apgars: (1 min/5 min/10 min, if applicable)

Moving both arms after delivery: [ ]  Yes [ ]  No

Evidence of clavicular fracture: [ ]  Yes [ ]  No

Evidence of humerus fracture: [ ]  Yes [ ]  No

Blood gases: [ ]  Not sent [ ]  Sent

Arterial: pH: Base deficit:

Venous: pH: Base deficit:

Infant location after birth: [ ]  In room with mother
 [ ]  Neonatal intensive care unit
 [ ]  Newborn nursery for observation

[ ]  Maternal status

Other comments:

Description of Procedures for Shoulder Dystocia Management

# Primary Procedures

**McRoberts maneuver:** Mother’s legs hyperflexed back onto abdomen

**Suprapubic pressure:** Using a closed fist over pubic bone, push in an inward and downward motion.

### Rotational Procedures

If McRoberts and suprapubic pressure fail to relieve the obstruction, the clinician should try intravaginal procedures. Episiotomy may be necessary to allow for placement of the clinician’s hand but is not necessary if hand placement is possible. Each of the rotational maneuvers has an eponymous name; however, several authors emphasize the importance of learning the procedure and not the name.

***Anterior shoulder:*** The clinician’s entire hand is placed on the posterior surface of the fetal anterior shoulder, and pressure is applied toward the infant’s anterior chest to adduct and flex the anterior shoulder.

***Posterior shoulder:***The clinician’s entire other hand is placed on the anterior surface of the posterior shoulder and pressure placed that is meant to abduct and extend the posterior shoulder.

### Posterior Arm Delivery

Delivery of the posterior arm can be considered before or after rotational steps. The ideal approach is for the clinician to put pressure in the antecubital fossa of the posterior arm, flexing the arm and sweeping the hand and arm over the anterior fetal chest and delivering the hand through the vagina. This will flex and adduct the shoulders and should disengage the anterior shoulder to allow the body to deliver.

### All Fours (also known as the Gaskin maneuver)

In a patient who is relatively mobile, the all-fours maneuver or rotating the woman to knee-hands position can help to dislodge the shoulder. This can be disorienting for the clinicians, but a systematic approach can assist in an orderly use of the previously attempted steps.

# Secondary Procedures (also considered procedures of last resort)

**Clavicular Fracture**

Clavicular fracture is not uncommon in neonates after shoulder dystocia. Separate from this, however, is the deliberate fracture of the clavicle as a technique to relieve the shoulder dystocia by reducing the bisacromial diameter. This procedure is considered a heroic measure due to the significant risk of brachial plexus injury associated with this procedure. It is performed by applying upward (in a cephalic direction) digital pressure on the fetal clavicle, against the maternal pubic ramus.

**Cephalic Replacement With Cesarean Section (also known as the Zavanelli procedure)**

If the above procedures have failed to achieve a vaginal birth despite several attempts at sequential procedures and there is still a live baby with significant time passage, one could attempt a cephalic replacement procedure by applying firm, steady pressure on the flexed fetal head and then proceeding to cesarean section.

**Symphysiotomy:**This procedure is relatively common in patients in developing countries when safe cesarean section is not available. It involves dividing the symphysis pubis under local anesthesia.

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