

# Shoulder Dystocia: A primer for successful team response

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## TABLE OF CONTENTS

### SECTION 1

BACKGROUND .....	1
<i>Definition</i> .....	1
<i>Prevalence</i> .....	1
<i>Risk Factors</i> .....	1
<i>Recognition</i> .....	1
<i>Complications</i> .....	2

### SECTION 2

MANAGEMENT .....	3
<i>Initial steps</i> .....	3
<i>Maneuvers</i> .....	4
<i>McRoberts</i> .....	4
<i>Suprapubic pressure</i> .....	4
<i>Episiotomy</i> .....	4
<i>Delivery of the posterior arm</i> .....	4
<i>Rubins</i> .....	5
<i>Woods corkscrew</i> .....	5
<i>Gaskin</i> .....	6
<i>Fracture of clavicle</i> .....	7
<i>Zavanelli</i> .....	7
<i>Abdominal rescue</i> .....	7

### SECTION 3

TEAMWORK & COMMUNICATION .....	8
<i>Simulation training</i> .....	8
<i>Team training</i> .....	8
<i>Debriefing</i> .....	9
<i>Documentation</i> .....	10

### SECTION 4

TEST YOURSELF .....	11
<i>Shoulder Dystocia Crossword Puzzle</i> .....	11
<i>Multiple Choice Questions</i> .....	12

REFERENCES .....	15
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## BACKGROUND

Shoulder dystocia is the nightmare of many obstetric providers and nurses. Shoulder dystocia during a delivery can rapidly change a happy, anxiously awaited event to one of anxiety, fear and concern as it can culminate in injury, death and litigation. Complicating this is the fact that shoulder dystocia is both unpredictable and unpreventable. But the situation is not hopeless. Instead knowledge, communication and team preparation can produce positive outcomes.

- **DEFINITION** – ACOG defines shoulder dystocia as delivery that requires additional obstetric maneuvers following failure of gentle downward traction on the fetal head to effect delivery of the shoulders. Others have defined shoulder dystocia as a head-to-body delivery time exceeding 60 seconds or the need for ancillary obstetric maneuvers. Ultimately the definition is a subjective one and only the delivering provider can make the call.
- **PREVALENCE** – Because of the use of various definitions, it is difficult to be certain as to the exact prevalence of shoulder dystocia. Additionally, severe cases of shoulder dystocia are easily identified but mild cases may be over or under diagnosed. Reported incidence is anywhere between 0.2 to 3.0% of all vaginal deliveries in vertex presentation.
- **RISK FACTORS** – Risk factors exist in the antepartum and intrapartum periods.
  - **Antepartum risk factors** –
    - Diabetes
    - Maternal obesity (>200 lbs. / BMI >30)
    - Excessive weight gain
    - Multiparity
    - Post term gestation
    - Macrosomia
    - History of a previous shoulder dystocia
    - Abnormal pelvic anatomy
    - Short maternal stature (< 5 feet tall)
  - **Intrapartum risk factors** –
    - Prolonged active phase of labor
    - Failure or arrest of descent
    - Midpelvis operative vaginal delivery
    - Precipitous delivery
  - Women without identified risk factors may experience a shoulder dystocia
- **RECOGNITION & DIAGNOSIS** – Despite the list of risk factors, shoulder dystocia is difficult to predict. Scenarios that may foreshadow shoulder dystocia include:
  - Prolonged second stage
  - Difficulty or failure to accomplish external rotation of the head after it has passed the perineum
  - Turtle sign – after its delivery, retraction of the fetal head against the maternal perineum creating the appearance of a double chin.



- Resistance to the delivery of the anterior shoulder with the usual gentle downward traction applied to the fetal head
- COMPLICATIONS - Shoulder dystocia places both the mother and fetus at high risk for birth-related injury
  - Maternal Complications
    - Uterine atony / Postpartum hemorrhage
    - 3<sup>rd</sup> or 4<sup>th</sup> degree laceration / rectovaginal fistula
    - Uterine rupture
  - Fetal Complications – a minority of shoulder dystocia’s result in neonatal injury; reported rates are 4-40%
    - Brachial plexus palsy – may be temporary or permanent
    - Fractured clavicle / humerus
    - Hypoxic ischemic encephalopathy
    - Neonatal death

## MANAGEMENT

Shoulder dystocia is an obstetric emergency. A systematic, step by step approach to the management of a shoulder dystocia is a key primary risk reduction strategy. Further information related to the steps listed below can be found in the subsequent pages.

### Step 1 – Planning

- Think about shoulder dystocia before every delivery but remember that there is no way to conclusively predict it in a given patient.
- In the setting of suspicion for shoulder dystocia, all team members should be made aware of the possibility. A shared mental model is key to teamwork.
- Nursing staff should assure the presence of one or two step stools in the room.

### Step 2 – Announce the situation

- Obstetric Provider: Announce the presence of a shoulder dystocia
- Nurse: Utilizing the intercom system, inform the BA and charge nurse of the shoulder dystocia
- BA: Make an overhead page of “Shoulder dystocia, Rm \_\_\_\_”.

### Step 3 – Communicate

- The nurse will discontinue Pitocin infusion, if one is infusing. It can be started again following resolution of the dystocia
- The obstetric provider and nurse should calmly communicate the occurrence of the shoulder dystocia to the patient and family
- Instruct the mother **not** to push while maneuvers are implemented

### Step 4 – Maneuvers

- Maneuvers are sometimes referred to as First Line, Second Line and Extraordinary/Desperation Maneuvers
- McRobert’s and suprapubic pressure may be performed by nursing staff at the request of the delivering provider. All other maneuvers are the responsibility of the MD/CNM provider

### Step 5 – Debrief

- Following completion of the delivery, staff should debrief the events of the shoulder dystocia

### Step 6 – Documentation

- It is important that documentation be accurate and comprehensive to demonstrate appropriate standard of care in the event of litigation.

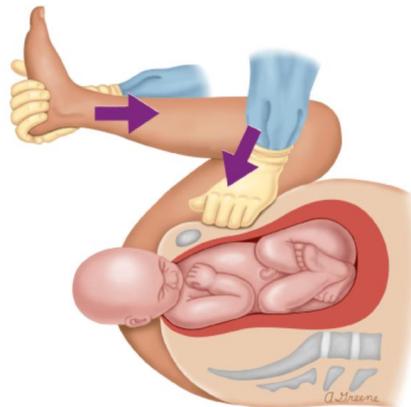
## Maneuvers

Knowledge of the use and application of various obstetric maneuvers is key to the intrapartum management of shoulder dystocia. There are no randomized trials that demonstrate the superiority of some maneuvers over others for resolving shoulder dystocia once it is identified. Both nursing and medical providers should have a basic understanding of all maneuvers and their role in utilizing them.

### First Line Maneuvers:

- McRobert's maneuver – requires 2 assistants sharply flexing the patient's legs against the abdomen. This results in straightening the sacrum relative to the lumbar vertebrae.
- Suprapubic pressure – an assistant applies pressure downward and laterally against the posterior aspect of the anterior shoulder. This is usually done in conjunction with McRobert's. **Do not** apply fundal pressure.

McRoberts maneuver and suprapubic pressure

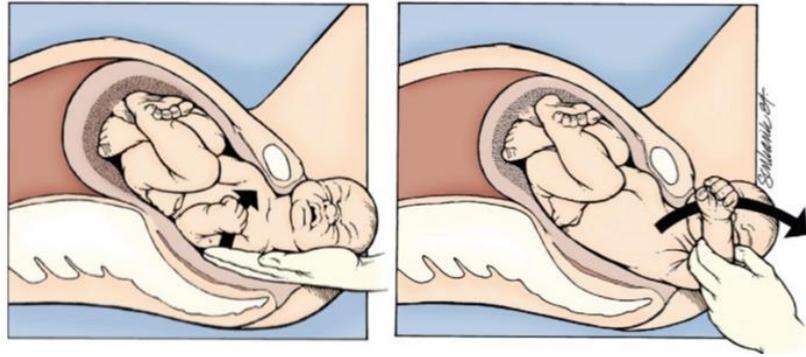


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### Second Line Maneuvers:

- Episiotomy – **does not** help to release the shoulder dystocia but may be helpful in providing room prior to performing the following maneuvers. Episiotomy does increase the incidence of perineal trauma.
- Delivery of the posterior arm – should be considered following McRobert's maneuver and suprapubic pressure as an appropriate next maneuver.
  - Best performed with adequate anesthesia
  - Introduce a hand into the vagina to identify the posterior shoulder and arm
  - If the elbow is flexed, grab the forearm and hand and pull the arm out of the vagina
  - If the elbow is extended, apply pressure to the antecubital fossa, which causes the elbow to flex and proceed as above

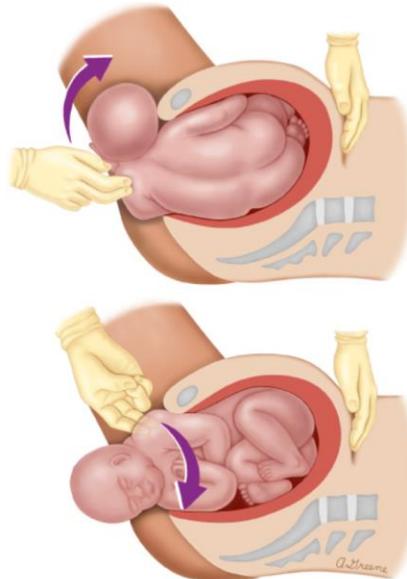
Delivery of the Posterior Arm



Clinical Procedures in Emergency Medicine

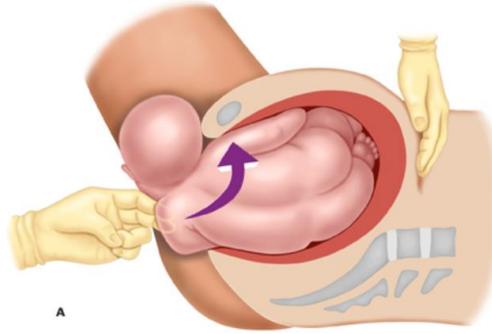
- Rotational maneuvers – may be helpful in facilitating release of the shoulder dystocia
  - Rubin maneuver – insert a hand into the vagina and place it on the back surface of the posterior fetal shoulder and rotate it towards the fetal face

Rubin Maneuver

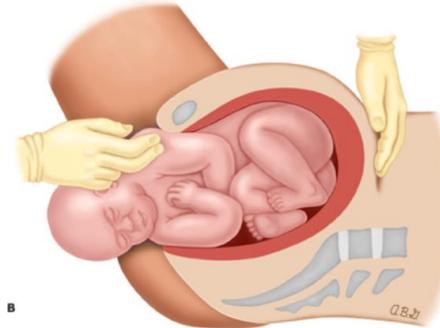


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- Woods corkscrew maneuver – place a hand into the vagina on the anterior, clavicular surface of the posterior shoulder to turn the fetus until the anterior shoulder emerges from behind the maternal symphysis



Woods corkscrew Maneuver



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- Gaskin maneuver – is done by placing the patient in the all fours position allowing further descent of the posterior shoulder past the sacral promontory; this position facilitates rotational maneuvers or delivery of the posterior arm
  - Due to the change in maternal position it is important to re-orient yourself regarding the application of further maneuvers



### Extraordinary / Desperation Maneuvers:

- Intentional fracture of the clavicle- Unintentional fracture of the clavicle is a not uncommon occurrence in the setting of a shoulder dystocia. Intentional fracture of the clavicle has been utilized to enable delivery by collapsing the shoulder girdle and freeing the impacted shoulder.
  - Accomplished by hooking the fingers behind the midpoint of the clavicle and exerting pressure up and out.



- Zavanelli maneuver – cephalic replacement through reversal of the cardinal movements of labor: rotation of the fetal head to pre-restitution position; flexion of the fetal head; application of pressure to return the head into the vagina; followed by cesarean delivery
- Abdominal rescue – vaginal delivery utilizing direct pressure on the fetal shoulder either through an abdominal incision with an intact uterus or through a low transverse uterine incision

## TEAMWORK AND COMMUNICATION

Recognition of a shoulder dystocia and facilitating proper interventions and timely delivery of the infant are the goals of the care delivery team. Communicating effectively as interdisciplinary teams is essential to meeting these goals. Strategies to develop teamwork and communication include: simulation training and team training.

- **Simulation Training** – a recreation of real world situations that allow for learning in an interactive manner without exposing caregivers or patients to harm; utilized to develop effective communication, within and between teams
  - Simulation and shoulder dystocia in the literature
    - Crofts et al. (2015) – 0 cases of brachial plexus injury lasting >12 months in 562 cases of shoulder dystocia one decade after simulation training introduced
    - Deering, Weeks & Benedetti (2011) – gender, body habitus and provider experience were not predictive of how much force a provider applies on the fetal head during a simulated shoulder dystocia
    - Crofts et al. (2006) – training with mannequins improved the management of shoulder dystocia; training on high-fidelity mannequins including force monitoring, offered additional benefits
    - Goffman, Heo, Pardani, Merkatz & Bernstein (2008) - Shoulder dystocia simulation training improved communication skills among resident and attending physicians
  
- **Team Training** – a comprehensive program that includes strategies and tools to facilitate teamwork behaviors.
  - Key Principles:
    - Team structure – “The ratio of We’s to I’s is the best indicator of the development of a team”, Lewis B. Ergen
      - Clearly defined team
      - Infrastructure for decision-making, care delivery & communication
      - Identification of Team roles during a shoulder dystocia:
        1. Delivery provider – Team leader; identify the situation; focused on performing delivery maneuvers
        2. Delivery nurse – Vigilance; alerts the team and mobilizes resources; assigns roles to other team members
        3. Recorder – Maintains situational awareness for the team; documents team actions and time of action; timekeeper – call out time intervals to maintain situational awareness of team
        4. Anesthesia personnel – Appropriate pain control to allow maneuvers
        5. Neonatal personnel –Stabilization and assessment of the newborn; resuscitation as required
    - Leadership – “Leadership: the art of getting someone else to do something you want done because he wants to do it.,” Dwight D. Eisenhower
      - Effective leaders create the climate that allows teamwork to flourish

- Empowers team members to speak up and challenge decisions when appropriate
- Establish shared mental model
- Situation monitoring – “Attention to detail is one of the most important details”, Author Unknown
  - The process of actively scanning and assessing elements of the situation to maintain an accurate understanding of the situation in which the team functions
  - Tools
    - Cross checking
    - STAR
- Mutual support – “A chain is only as strong as its weakest link;”, Author Unknown
  - Types of mutual support
    - Task assistance
    - Timely feedback
    - Advocacy & assertion
      - Stop the Line
      - Validate & verify
- Communication – “Communication is the response you get from the message you sent regardless of its intent”, Author Unknown
  - Standardized communication is key to effective teamwork
  - Effective communication is:
    - Complete
    - Clear
    - Brief
    - Timely
  - Tools
    - SBAR
    - Repeat Backs / Read Backs
    - Clarifying questions

## Debriefing

Debriefing is an information-sharing and event-processing session held following specific events. Debriefing, done immediately following an event, provides the opportunity for the team to learn while memories are fresh. In the case of shoulder dystocia, this offers the opportunity to confirm timing of the events and maneuvers so that documentation is consistent from one member of the team to another. Debriefings also provide an opportunity for the team to talk about their feelings related to the event. One useful model of debriefing involves four sections: defusing, debriefing, deepening and a summary.

1. Defusing – How do staff feel about the event? This allows team to vent their feelings and emotions concerning the event.
2. Debriefing – What was done well? What are areas for improvement? This allows the team to reflect on the event and allows them to be an active part of the solution.
3. Deepening – How can these lessons be used to improve performance in future events? This allows the team to connect the experience to actual practice.
4. Summary – What are the take away points? This allows for agreement on actions moving forward.

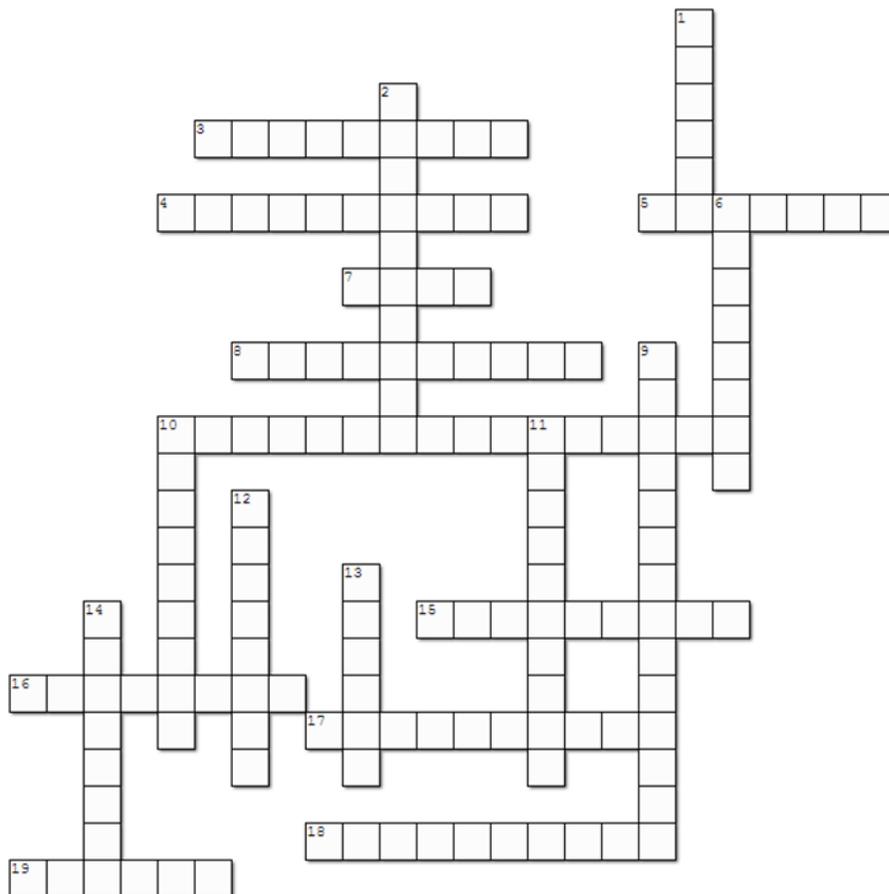
## **Documentation**

Shoulder dystocia leading to brachial plexus injuries is among the top reasons for litigation in obstetric events. ACOG has a Patient Safety Checklist concerning documenting shoulder dystocia that is an excellent guide to critical elements of both antepartum and intrapartum documentation for shoulder dystocia. All of these elements are also found within the Epic electronic medical record. Deering, Tobler & Cypher (2010) concluded that use of a standard checklist for shoulder dystocia in the delivery note resulted in a significant improvement in the documentation of several critical elements.

Name: \_\_\_\_\_

## Shoulder Dystocia

Complete the crossword below



Created with TheTeachersCorner.net [Crossword Maker](#)

### Across

- maneuver in which the maternal legs are sharply flexed against the abdomen
- Rubin and Woods corkscrew are these types of maneuvers
- following a shoulder dystocia, a meeting of the team to analyze their actions
- brachial plexus injury involving C5-6 resulting in adduction and internal rotation of the upper arm with extension of the forearm
- downward and lateral pressure exerted over the area of the anterior fetal shoulder by an assistant
- obstetric emergency reported to occur in 0.2 - 3.0% of all vaginal deliveries
- cephalic replacement
- fetal bone that may be intentionally fractured to facilitate delivery of a shoulder dystocia
- term that means a large fetus
- perineal incision that may provide room for maneuvers during a shoulder dystocia but is associated with increased incidence of maternal trauma
- midwife who promoted the all fours position for delivery of a shoulder dystocia

### Down

- sign associated with the appearance of a fetal double chin
- maternal complication of shoulder dystocia
- shoulder plexus most often damaged during shoulder dystocia
- fetal complication of shoulder dystocia characterized by a syndrome of overall brain dysfunction
- maternal body part behind which the anterior shoulder may become impacted resulting in shoulder dystocia
- type of training used to assist teams in developing effective communication during shoulder dystocia
- maneuvers to estimate fetal weight utilizing palpation
- pressure that is contraindicated in the presence of shoulder dystocia
- maternal medical condition that is an antepartum risk factor for shoulder dystocia

## Multiple Choice Shoulder Dystocia Questions

1. A shoulder dystocia becomes evident
  - A. When the patient “crowns”
  - B. With upward traction on the fetal head
  - C. At the beginning of second stage
  - D. Following failure of normal downward traction on the fetal head to effect delivery
2. The term shoulder dystocia indicates that
  - A. Anterior shoulder is obstructed behind the coccyx
  - B. Anterior shoulder is obstructed behind the symphysis
  - C. Posterior shoulder is obstructed behind the symphysis
  - D. The fetus is in OP position
3. Indicators of a shoulder dystocia are
  - A. Postdates and labor induction
  - B. Fetal macrosomia and prolonged second stage of labor
  - C. Prolonged first stage of labor and early SROM
  - D. Prolonged second stage of labor and a turtle sign
4. Patients are at higher risk for shoulder dystocia in the presence of the following
  - A. Diabetes
  - B. Macrosomia
  - C. Hypertension
  - D. All of the above
  - E. A & B
5. Maternal complications following a shoulder dystocia include all of the following except
  - A. Dysuria and constipation
  - B. Suprapubic pain
  - C. Postpartum hemorrhage
  - D. Uterine rupture
6. The Zavanelli maneuver is also referred to as
  - A. Cephalic rotation
  - B. Fundal pressure
  - C. Cephalic replacement
  - D. Suprapubic pressure

7. It is within nursing scope of practice to perform the following maneuvers if necessary
  - A. Suprapubic pressure and McRobert's maneuver
  - B. Fundal pressure and McRobert's maneuver
  - C. Wood's corkscrew and Ruben's maneuver
  - D. Delivery of the posterior arm
  
8. An episiotomy is performed during a shoulder dystocia to
  - A. Relieve the obstruction to the posterior shoulder
  - B. Relieve umbilical cord compression
  - C. Allow more room to perform other maneuvers
  - D. Allow suctioning of the infant's mouth
  
9. Forceful traction on the fetal head is not helpful to effect delivery during a shoulder dystocia because
  - A. The anterior shoulder is obstructed by soft tissue
  - B. The anterior shoulder is obstructed behind the symphysis
  - C. The infant most likely has a nuchal cord
  - D. It will serve to further impact the shoulder
  
10. Following a shoulder dystocia which actions should occur
  - A. The events of the delivery are explained to the patient and her family
  - B. The care team should refrain from talking about the delivery with the patient and family
  - C. The care team should debrief the events of the delivery
  - D. A & C
  - E. B & C
  
11. During a shoulder dystocia, someone should be assigned the role of recorder
  - A. To maintain situational awareness for the team
  - B. To record the maneuvers applied and the time of the application
  - C. To announce time since delivery of the head at designated intervals
  - D. All of the above
  - E. None of the above

Consider the following scenario:

Rebecca is a primip at 41+1 weeks gestation. She has gained 50 lbs during this pregnancy and her fetus has an EFW 6.5 lbs. An epidural is placed during the first stage of labor. After pushing for 3 hours, the head of her male infant is delivered from an OA position and a tight nuchal cord is clamped and cut. The fetal head retracts against the perineum and no further progress is noted. The nurse initiates McRobert's maneuver and applies suprapubic pressure at the direction of the delivering provider. The infant's Apgar scores are 6 at 1 minute and 9 at 5 minutes. The infant is noted to have a right fractured clavicle. The mother experiences a postpartum hemorrhage.

12. The least likely cause of the postpartum hemorrhage is
- A. Cervical lacerations
  - B. Uterine rupture
  - C. Atonic uterus
  - D. Rectal trauma
13. Risk factors for shoulder dystocia in this scenario include
- A. Excessive maternal weight gain
  - B. Epidural anesthesia
  - C. Prolonged labor
  - D. None of the above
14. Besides the fractured clavicle, additional fetal complications of shoulder dystocia include
- A. Hypoxic ischemic encephalopathy
  - B. Fetal hypoglycemia
  - C. Brachial plexus injury
  - D. A & C
  - E. B & C
15. In documenting the events of Rebecca's delivery all of the following should be included except
- A. Time interval between delivery of the head and the body
  - B. That an event report will be filed
  - C. Names of all staff present
  - D. Which was the involved shoulder
  - E. Maneuvers utilized and the sequence in which they were applied
  - F. Condition of the newborn at birth

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