

# Helping Mothers Survive **Prolonged & Obstructed Labor**

Provider Guide – Part 2 of 2: Management



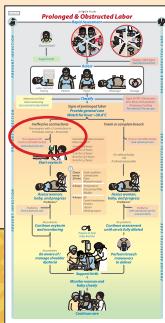


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# Classify

## Ineffective contractions



- ✓ Two contractions or fewer in 10 minutes, each lasting less than 40 seconds
- ✓ Unsatisfactory progress of labor

### Key knowledge

If labor is prolonged because contractions are either not frequent enough or strong enough to dilate the cervix and result in descent of the fetus, augmentation by oxytocin infusion can stimulate contractions and improve progress.

Augmentation of labor with oxytocin can result in fetal distress and uterine rupture due to hyperstimulation of the uterus.

Women whose labor has been augmented with oxytocin are at increased risk for:

- Uterine rupture
- Fetal distress / newborn asphyxia
- Postpartum hemorrhage
- Shoulder dystocia

### Conditions required for augmentation with oxytocin:

At the facility:

- The facility can do cesarean deliveries.
- Betamimetics are available in case of uterine hyperstimulation.
- Oxytocin is kept in cold chain of 2-8 °C during transport and storage.
- The facility has enough staff to closely

monitor the woman and fetus and give continuous supportive care.

- The facility has staff who are competent and comfortable to calculate and control the oxytocin rate and identify and manage complications from augmentation.

### For the woman:

- Ineffective contractions are the most likely cause of poor progress when the cervix is 5 or more cm dilated.
- There are no signs of CPD or obstruction
- A malpresentation/malposition requiring cesarean birth has been ruled-out
- Cephalic presentation
- One fetus
- The facility meets requirements for augmenting labor with oxytocin (see above)

### Cautions to augmentation of labor with oxytocin:

- The woman has had a prior cesarean birth. Uterine rupture is more common in women who have had prior cesarean.

## **Contraindications to augmentation of labor with oxytocin:**

- Signs of CPD or obstruction
- A malpresentation/malposition requiring cesarean birth
- Non-cephalic presentation
- Multiple pregnancy
- The facility does not meet requirements for augmenting labor with oxytocin (see above)

## **Consider performing an amniotomy together with augmentation.**

- However, do not perform an amniotomy if the presenting part is not well applied to the cervix as you may prolapse the cord.
- Perform an amniotomy with caution if the woman has HIV or hepatitis B or C OR if these diseases are common to reduce transmission to the baby.

### ***Advanced Care Note***

- Refer the woman for advanced care if poor progress of labor is most likely due to ineffective contractions and conditions required for augmentation of labor cannot be met.
- Depending on local guidance, refer women with a previous cesarean birth.

## **EXERCISE**

### ***Is augmentation needed?***

#### **SCENARIO 1:**

Ms. W. is a 24 yo G2P1 who arrived at the facility at 02:00 hours with painful contractions. On admission, her cervix was 5 cm dilated, soft, effaced at 80%. Descent: 2/5. She had two contractions in 10 minutes each lasting between 30-40 seconds. The baby is in occiput anterior position. At 06:00 hours, her cervix was 6 cm dilated, soft, and 100% effaced. Descent: 2/5. Ms. W. has no danger signs, she is tolerating contractions, her vital signs are within normal limits, and FHR is 132-146 bpm. There are no signs of CPD or obstruction.

**Is augmentation with oxytocin needed?**

**Why or why not?**

**Is advanced care needed?**

#### **SCENARIO 2:**

Ms. X. is a 22 yo G1P0 who arrived at the facility at 16:00 with painful contractions. On admission, her cervix was 6 cm dilated, soft, and fully effaced. Descent: 2/5. She had two contractions in 10 minutes each lasting between 30-40 seconds. The baby is in right occiput anterior position. At 24:00 h, her cervix was 7 cm dilated, not edematous, the fetal head was well applied to the cervix. Ms. X. is tired but coping. Her BP is 122/78, Pulse 82 bpm Respirations 16 / minute, temperature 37.6°C. FHR is 144-152 bpm.

**Is augmentation with oxytocin needed?**

**Why or why not?**

**Is advanced care needed?**

#### **SCENARIO 3:**

Ms. Y. is a 32 yo G6P4 who arrived at the facility at 20:00 with painful contractions. On admission, her cervix was 6 cm dilated, slightly edematous. Descent: 3/5. She had two contractions in 10 minutes each lasting between 30-40 seconds. The baby is in occiput anterior position. At 00:00 h, her cervix was 6 cm dilated, very edematous. Ms. Y. is exhausted and anxious. Her BP is 108/58, Pulse 102 bpm Respirations 22 / minute, temperature 38.1°C. FHR is 162-182 bpm.

**Is augmentation with oxytocin needed?**

**Why or why not?**

**Is advanced care needed?**

## If ineffective contractions Start oxytocin



- ✓ Add 2.5 units of oxytocin to 500 mL of 5% dextrose or normal saline or RL
- ✓ Begin infusing 2.5 mIU per minute
- ✓ Evaluate the woman and FHR every 30 minutes to make a decision about the infusion rate

### Key knowledge

Explain to the woman why she needs her labor augmented. Tell her what to expect and that her contractions will become stronger. Obtain her consent. Closely monitor the woman, fetus, and labor progress. Act fast if there are signs of fetal distress or hyperstimulation! Continue to provide general labor support and never leave the woman alone!

### Key Actions

As you monitor the woman and her labor, document your findings on the labor record. You will use your assessments to decide if the infusion rate should be maintained, increased, or stopped:

- At least every 30 minutes assess and record:
  - Coping, pulse, contractions, and FHR
  - Amniotic fluid (liquor) if membranes are ruptured
- Every 2 hours:
  - Temperature, descent by abdominal examination, bladder

- Every 4 hours:
  - BP
  - Vaginal examination: cervical dilatation and condition, station, position, molding/caput
- Make sure that when the woman is lying down that she is on her side or in any position of her choice except flat on her back. She may walk and move around if the baby is doing well.
- Provide pain relief as needed.
- Let the woman and her companion know how she and her baby are doing and how her labor is progressing.
- Immediately assess vital signs, contractions, and FHR if the woman appears distressed and respond based on findings.

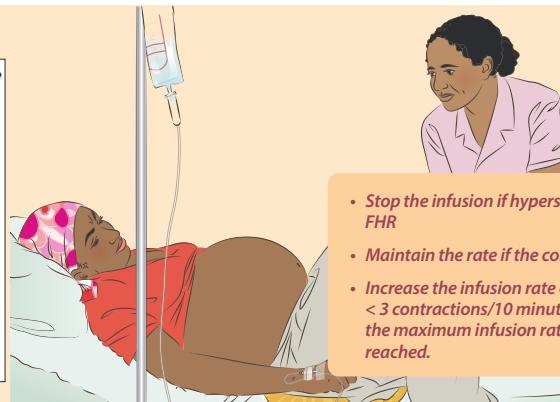
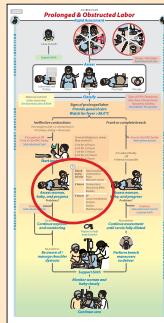
### Advanced Care Note

Based on local protocols, seek advanced care if any of the following apply:

- The baby is distressed and not tolerating augmentation.
- There is hyperstimulation.
- The baby is fetal distress that does not respond to treatment

**If on oxytocin infusion**

# Assess the woman, baby, and progress



- Stop the infusion if hyperstimulation or abnormal FHR
- Maintain the rate if the contraction pattern is good
- Increase the infusion rate every 30 minutes if < 3 contractions/10 minutes, < 40 seconds until the maximum infusion rate of 15 mIU / minute is reached.

## Augmentation of labor with oxytocin

1. Check and record the woman's pulse, contractions, and the FHR.
2. Help her lie comfortably on her left side.
3. Prepare an IV infusion of oxytocin in 500 mL of a chosen IV solution (5% dextrose or Ringer's Lactate or normal saline).
4. Label the bag with the concentration of oxytocin (2.5, 5, or 10 units/500 mL) and the date and time oxytocin was added to the bag.
5. Check the drop factor of the IV giving set.
6. Begin infusing oxytocin using the calculated drip rate.
7. Record oxytocin mIU/minute on the partograph or labor record.
8. Never leave the woman alone.
9. Plan to monitor FHR, uterine contractions, coping, and pulse every 30 minutes.
10. Each time you assess the woman, decide if the rate should be maintained, increased, or if the infusion should be stopped.
  - **Maintain the rate if a good contraction pattern is established** - three contractions in 10 minutes, each lasting more than 40 seconds.
  - Increase the infusion rate every 30 minutes until:

- a good contraction pattern is established OR
  - the maximum rate is reached for each concentration of oxytocin (2.5, 5, or 10 units/500 mL)
- **Stop the oxytocin drip and act fast if:**
- the uterus does not relax between contractions or
  - there are signs of fetal or maternal distress or
  - there are signs of hyperstimulation!

### Advanced Care Note

Based on local protocols and standards, seek advanced care if the maximum dose of oxytocin is reached and a good contraction pattern has not been established:

- Augmentation has failed in **multigravida and women with a previous caesarean birth** if a good contraction pattern has not been established at an infusion rate of 60 gtt / min with a concentration of 5 IU/500 mL
- Augmentation has failed in **primigravida** if a good contraction pattern has not been established at an infusion rate of 60 gtt / min with a concentration of 10 IU/500 mL

## Oxytocin infusion rates for augmentation of labor

WHO: Managing Complications in Pregnancy and Childbirth 2017

Time since oxytocin started (hours)	Oxytocin Concentration	Drip Rate: Drops per Minute	Approximate Dose (mIU/minute)	Volume Infused (mL)	Total Volume Infused (mL)
<b>Note:</b> Check the drop factor (drops per mL) for the giving set being used. If the drop factor is more or less than 20 drops per mL, the drip rates need to be recalculated.					
0.00	2.5 units in 500 mL dextrose or normal saline (5 mIU/mL)	10	3	0	0
0.50	Same	20	5	15	15
1.00	Same	30	8	30	45
1.50	Same	40	10	45	90
2.00	Same	50	13	60	150
2.50	Same	60	15	75	225
3.00	5 units in 500 mL dextrose or normal saline (10 mIU/mL)	30	15	90	315
3.50	Same	40	20	45	360
4.00	Same	50	25	60	420
4.50	Same	60	30	75	495
5.00	10 units in 500 mL dextrose or normal saline (20 mIU/mL)	30	30	90	585
5.50	Same	40	40	45	630
6.00	Same	50	50	60	690
6.50	Same	60	60	75	765
7.00	Same	60	60	90	855
<b>Note:</b> Drip rates are calculated using a drop factor of 20 drops per mL.					

## Calculating oxytocin drip rates based on the drop factor

### 1. Calculate the volume required in mL for the dose

- In the case of oxytocin, there will be 2.5 IU (2,500 mIU), 5 IU (5,000 mIU), or 10 IU (10,000 mIU) in 500 mL
- Calculate the number of mIU/mL
  - If the concentration is 2.5 IU (2,500 mIU)/500 mL, there are 5 mIU / mL
  - $2,500 \text{ mIU} \div 500 \text{ mL} = 5 \text{ mIU} / \text{mL}$
- Calculate the number of mL required for the prescribed dose
  - For a dose of 2.5 mIU with a concentration of 2.5 IU (2,500 mIU) / 500 mL you need:
    - $(5 \text{ mIU} \div 1 \text{ mL}) = (2.5 \text{ mIU} \div X \text{ mL})$
    - $5X = 2.5$
    - $X = (2.5 \div 5) = 0.5 \text{ mL}$  for a dose of 2.5 mIU

### 2. Calculate the number of drops / minute required

- For a dose of 2.5 mIU/min with a drop factor of 20 gtts/mL
  - $(20 \text{ gtts} \div 1 \text{ mL}) = (X \text{ gtts} \div 0.5 \text{ mL})$
  - $X = (20 \times 0.5) = 10 \text{ gtts/min}$
  - Drip rate = 10 gtts/min for a dose of 2.5 mIU

The flow rate is calculated in drops per minute (gtts/min). To calculate this, one must know the administration set drop factor (number of drops contained in 1 milliliter), which is a constant.

Macro drip tubing administers a large drop and may be used for 10 gtts/mL, 15 gtts/mL or 20 gtts/mL.

Macro drip tubing administers 60 gtts/mL

Concentration	mIU / mL	Dose: mIU/min	Drops/minute			
			Drop factor: 10 gtts/mL	Drop factor: 15 gtts/mL	Drop factor: 20 gtts/mL	Drop factor: 60 gtts/mL
2.5 IU / 2,500 mIU per 500 mL	$2,500 \text{ mIU} \div 500 \text{ mL} = 5 \text{ mIU} / \text{mL}$	$2.5 \text{ mIU/min} = 0.5 \text{ mL}$	5 gtts/ min	8 gtts/ min	10 gtts/ min	30 gtts/ min
5 IU / 5,000 mIU per 500 mL	$5,000 \text{ mIU} \div 500 \text{ mL} = 10 \text{ mIU} / \text{mL}$	15 mIU/min = 1.5 mL	15 gtts/ min	23 gtts/ min	30 gtts/ min	90 gtts/ min
		$5 \text{ mIU/min} = 0.5 \text{ mL}$	5 gtts/ min	8 gtts/ min	10 gtts/ min	30 gtts/ min
10 IU / 10,000 mIU per 500 mL	$10,000 \text{ mIU} \div 500 \text{ mL} = 20 \text{ mIU} / \text{mL}$	30 mIU/min = 1.5 mL	15 gtts/ min	23 gtts/ min	30 gtts/ min	90 gtts/ min
		$10 \text{ mIU/min} = 0.5 \text{ mL}$	5 gtts/ min	8 gtts/ min	10 gtts/ min	30 gtts/ min

**Increasing oxytocin infusion when maternal and fetal status is reassuring and there are fewer than three contractions in 10 minutes, each lasting less than 40 seconds**

Add 2.5 units of oxytocin to 500 mL of 5% dextrose or normal saline (i.e. 5 mIU per mL)

- Adjust the infusion rate to 2.5 mIU per minute (0.5 mL per minute or 10 drops per minute if the giving set has a drop factor of 20 drops/mL).

Increase by 10 gtt / minute every 30 minutes  
Maximum dose: 60 gtt / minute

Add 5 units of oxytocin to 500 mL of 5% dextrose or normal saline (i.e. 10 mIU per mL) – Always use a new bag of IV fluid

- Adjust the infusion rate to 15 mIU per minute (1.5 mL per minute or 30 drops per minute if the giving set has a drop factor of 20 drops/mL).

Increase by 10 gtt / minute every 30 minutes  
Maximum dose: 60 gtt / minute

**Only if a primigrada,**  
add 10 units of oxytocin to 500 mL of 5% dextrose or normal saline (i.e. 20 mIU per mL) – Always use a new bag of IV fluid

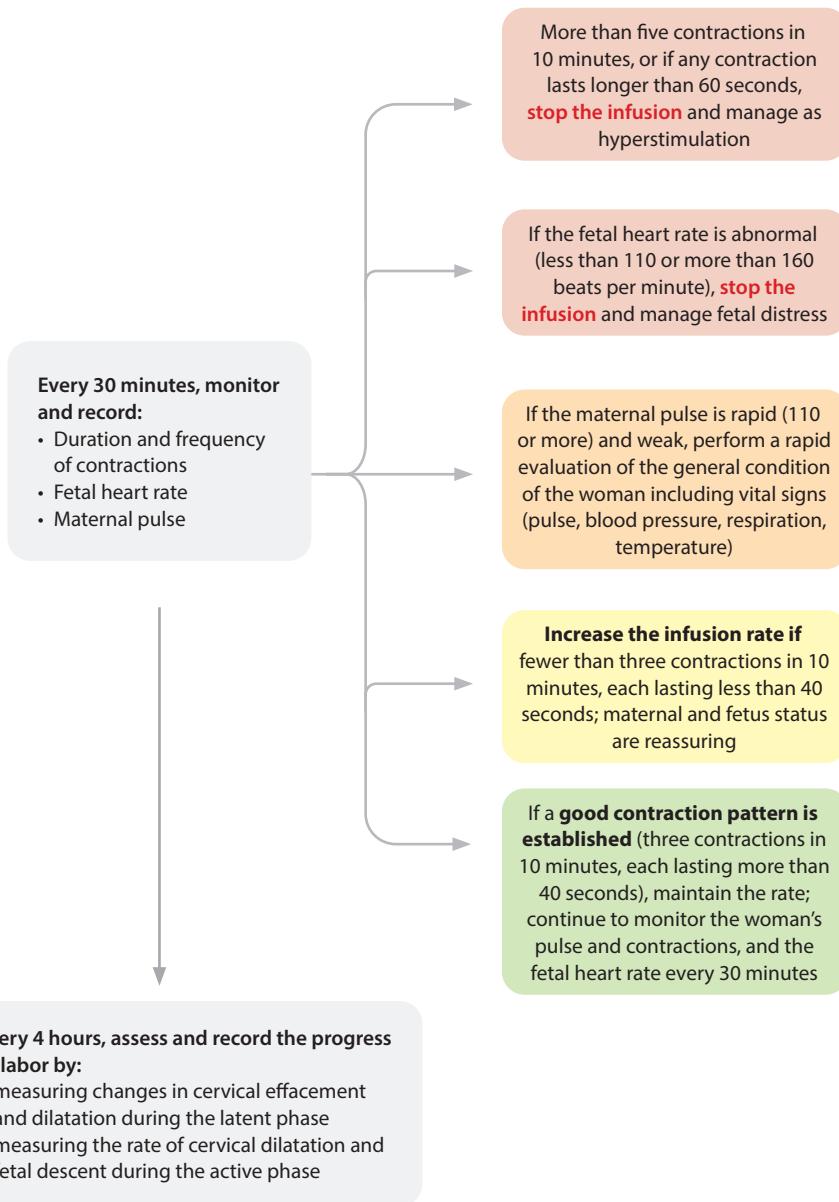
- Adjust the infusion rate to 30 mIU per minute (1.5 mL per minute or 30 drops per minute if the giving set has a drop factor of 20 drops/mL).

Augmentation has failed in multigravida and women with a previous caesarean birth if a good contraction pattern has not been established at an infusion rate of 60 gtt / min with a concentration of 5 IU/500 mL

Increase by 10 gtt / minute every 30 minutes  
Maximum dose: 60 gtt / minute

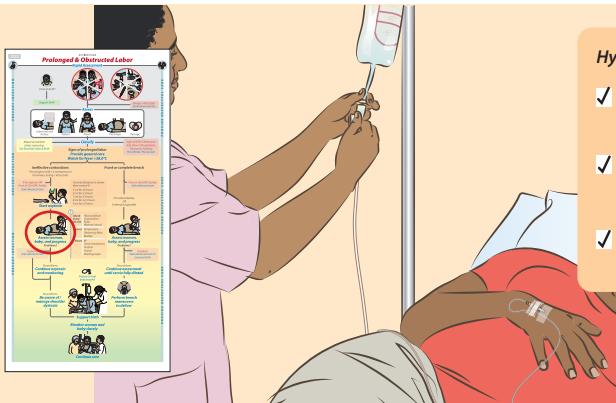
Augmentation has failed in primigravida if a good contraction pattern has not been established at an infusion rate of 60 gtt / min with a concentration of 10 IU/500 mL

## Monitoring and decision-making during augmentation with oxytocin



## If ineffective contractions

# Manage hyperstimulation



### Hyperstimulation

- More than five contractions in 10 minutes  
OR
- Any contraction lasts longer than 60 seconds  
OR
- The uterus does not relax between contractions

## Key knowledge

Hyperstimulation may occur with or without FHR changes. If not corrected, it may lead to fetal hypoxia and uterine rupture.

Make sure the woman has adequate pain relief – hyperstimulation is very painful! If there is fetal distress, use non-pharmacologic means to provide emotional support and pain relief.

## Key Actions

### Never leave the woman alone!

1. Stop the oxytocin infusion as you explain what is happening and what you need to do.
2. Ask her to roll onto her left side.
3. Call for help.

**NOTE:** Guidance should be adapted based on local protocols.

4. Assess the FHR:
  - If the FHR is normal:
    - Observe for decreased contractions and continue to monitor the FHR.
    - If normal uterine activity is not established within 20 minutes, relax the uterus using betamimetics.

- If the FHR is not normal:
  - Manage fetal distress - change maternal position, give IV or oral fluids and oxygen.
  - Relax the uterus using betamimetics.
  - Observe for decreased contractions and continue to monitor the FHR.
  - Consider the need for cesarean if fetal distress persists despite treatment.
- 5. If the FHR returns to normal and normal uterine activity is established for a period of at least 30 minutes, cautiously restart oxytocin infusion if you are in an advanced care facility. Otherwise, seek advanced care.

## Betamimetics

**Terbutaline** 250 mcg added to 9 mL of sodium chloride 0.9 % - give slowly by 50 mcg IV boluses up to 250 mcg in total OR 250 mcg by subcutaneous injection

**Side effects:** transient maternal tachycardia, tremor, headache, nervousness, palpitation, muscle cramps

## EXERCISE

### Manage oxytocin infusion (1)

**Contraindications:** Antepartum hemorrhage

**Precautions:** Medical history of maternal thyrotoxicosis or diabetes or maternal pulse is >120 beats per minute

**Note: Stop administration if maternal pulse > 140**

OR

**Salbutamol** 10 mg in 1 L IV fluids (normal saline or Ringer's lactate) at 10 drops per minute.

**Side effects:** Fetal and maternal tachycardia, maternal hypotension, pulmonary edema, hypoxia

**Contraindications:** Cardiac disease, hypertension, hyperthyroidism

**Precautions:** Diabetes

**Note: Stop administration if maternal pulse > 140**

#### SCENARIO 1:

Ms. E. is a 19 y/o G1P0 woman who arrived at 09:00 hours:

- 09:00 hours - Cervix 7 cm, 3 uterine contractions in 10 minutes lasting 20-30 seconds.
- 13:00 hours - Cervix 7 cm, and she had 2 contractions in 10 minutes each lasting 30-40 seconds. CPD and obstruction have been ruled out. FHR was 152 bpm. Labor was augmented at 13:00 hours and an oxytocin drip was started with a concentration of 2.5 units in 500 mL of Ringer's Lactate, perfusing 2.5 mIU per minute.
- At 13:30 she is having 2 contractions in 10 minutes each lasting 30-40 seconds; FHR is 138 bpm.

**How will you manage the oxytocin infusion?**

**How you will care for the woman?**

#### SCENARIO 2:

Ms. F. is a 32 y/o G6P5 woman who arrived at 17:00 hours with a cervical dilatation of 5 cm and had 2 uterine contractions in 10 minutes each lasting 30-40 seconds.

- At 21:00, her cervical dilatation was still 5 cm, and no change in frequency and length of contractions.
- At 01:00 hours her cervix was 6 cm dilated and she had 2 contractions in 10 minutes each lasting 30-40 seconds. CPD and obstruction have been ruled out. FHR was 136 bpm. Labor was augmented at 01:00 hours and an oxytocin drip was started with a concentration of 2.5 units in 500 mL of Ringer's Lactate, perfusing 2.5 mIU per minute.
- At 03:00 hours, she had been on oxytocin augmentation for 2 hours. She is having 6 contractions in 10 minutes each lasting 70-80 seconds; FHR is 172 bpm.

**How will you manage the oxytocin infusion?**

**How you will care for the woman?**

## **EXERCISE**

### **Exercise: Manage oxytocin infusion (2)**

#### **SCENARIO 1:**

Ms. G. is a 21 y/o G1P0 who arrived with findings

- **04:00:** Cervix 5 cm; 3 contractions in 10 minutes lasting 20-30 seconds; FHR 144 bpm
- **08:00:** Cervix 6 cm; 2 contractions in 10 minutes lasting 30-40 seconds; FHR 132 bpm.
  - CPD and obstruction have been ruled out.
  - Augmentation started: oxytocin 2.5 units in 500 mL of Ringer's Lactate (RL), starting at 2.5 mIU per minute.
- **11:00:** 2 contractions in 10 minutes lasting 30-40 seconds; FHR is 146 bpm
  - Oxytocin concentration increased to 5 IU oxytocin / 500 mL of RL starting at 15 mIU/min.
- **12:00:** Cervix 6 cm; 2 contractions in 10 min. lasting 30-40 sec; FHR is 138 bpm
  - Oxytocin drip rate: 25 mIU/minute of 5 IU oxytocin/500 mL of RL
- **13:00:** 2 contractions in 10 min. lasting 30-40 sec; FHR 142 bpm
  - Oxytocin augmentation for 5 hours. Current drip rate is 30 mIU/minute for the last 30 minutes with a concentration of 5 units of oxytocin in 500 mL.

**How will you manage the oxytocin infusion?**

**How you will care for the woman?**

#### **SCENARIO 2:**

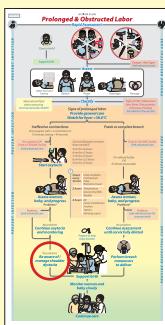
Ms. H. is a 30 y/o G5P3 who arrived with findings:

- **20:00:** Cervix 5 cm; 2 contractions in 10 min. lasting 30-40 sec; FHR 132 bpm
- **00:00:** Cervix 6 cm; 2 contractions in 10 minutes lasting 30-40 seconds; FHR 136 bpm
  - CPD and obstruction have been ruled out.
  - Augmentation started: 2.5 units oxytocin in 500 mL of RL, starting at 2.5 mIU per minute.
- **03:00:** 2 contractions in 10 minutes lasting 30-40 seconds; FHR 142 bpm
  - Oxytocin concentration increased to 5 IU oxytocin / 500 mL of RL starting at 15 mIU/min.
- **04:00:** Cervix 7 cm, 2-3 contractions/10 minutes lasting 20-30 seconds; FHT 140
- **05:00:** 3 contractions in 10 min. lasting 30-40 sec; HR 156 bpm
  - Oxytocin augmentation for 5 hours. Current drip rate is 30 mIU/minute for the last 30 minutes with a concentration of 5 units of oxytocin in 500 mL

**How will you manage the oxytocin infusion?**

**How you will care for the woman?**

# Be aware of shoulder dystocia (turtle sign)



## Signs of shoulder dystocia

- ✓ The fetal head is born but remains tightly applied to the vulva.
- ✓ The chin retracts and depresses the perineum.
- ✓ Traction on the head fails to deliver the shoulder, which is caught behind the symphysis pubis.

## Key knowledge

Women who have had their labors augmented are at increased risk of shoulder dystocia, however any women can experience shoulder dystocia.

### Shoulder dystocia cannot be predicted.

Be prepared for and look out for signs of shoulder dystocia at all births.

### Risk of shoulder dystocia is increased with:

- shoulder dystocia in a prior birth
- large baby
- diabetes
- prolonged 1st or 2nd stage of labor
- vacuum or forceps birth

Cesarean birth should not be done only because a woman may be at higher risk of shoulder dystocia if her labor is progressing well.

Shoulder dystocia is an emergency. You have about five minutes to deliver the baby's body before asphyxia and permanent damage can occur. There are specific, important steps you can take to save the baby.

### Signs of shoulder dystocia;

- The head delivers but remains tightly against the vulva
- The chin retracts and depresses the perineum.
- Traction on the head fails to deliver the shoulder, which is caught behind the symphysis pubis.

If you see these signs, Act Fast! Call for several people to help!

When a woman is having labor augmented, be sure you have help in case of shoulder dystocia or if the newborn needs resuscitation.

Shoulder dystocia increases the risk for uterine rupture. Signs of rupture include intra-abdominal and/or vaginal bleeding, severe abdominal pain which may decrease after rupture, rapid maternal pulse, signs of shock, abnormal uterine contour, tender abdomen, easily palpable fetal parts, absent fetal heart.

## If on oxytocin infusion Support birth



### Key knowledge

Provide essential care for all women during birth and immediately postpartum.

- Provide special care for women whose labors are augmented.
- Continue IV oxytocin infusion and monitoring for adverse reactions to oxytocin during second stage.
- Augmentation increases the risk for newborn asphyxia, uterine rupture and PPH.

#### **Act fast if there you suspect any problem!**

- Women with prolonged labor and women who are having labor augmented need closer monitoring during second stage.

#### **They are at risk for:**

- Fetal distress and uterine rupture from oxytocin
- CPD / obstruction – Carefully monitor descent with each contraction!
- Shoulder dystocia

The length of the second stage varies from one woman to another. In first labors, second stage will usually not last more than 3 hours, while in subsequent labors, second stage will usually not last more than 2 hours.

**If the second stage of labor is not progressing normally, do a quick check, verify vital signs and FHR, and assess the 4 Ps to determine the cause and manage any problems.**

In most cases, second stage will progress

normally once prolonged first stage has been managed. Promote the concept of "keeping normal, normal" during labor and birth. Only use medical interventions if there is a clear indication.

**Whenever possible and even if she has an IV oxytocin infusion, encourage and help the woman choose the position at birth that she prefers, including upright positions.**

Make sure that you have an assistant available to help in case of shoulder dystocia or if the newborn needs resuscitation.

Alert the operating theater that the woman is now in second stage so they are ready in case an emergency cesarean is needed.

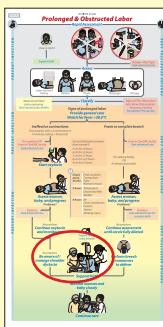
After checking for a second baby, offer a uterotonic to all women including those whose labors are being augmented, to actively manage the third stage of labor (AMTSL).

In addition to the uterotonic given for AMTSL, give the equivalent of 10 IU of oxytocin over 3.5 hours to keep the uterus contracted. If her bleeding is normal, you can stop the IV oxytocin after this.

**Be especially alert to the woman's uterine tone and vaginal bleeding.** She is at greater risk for PPH. Teach her to monitor her bleeding and uterus and to massage her uterus if it is soft. Tell the woman and her companion to call you immediately if her uterus is soft or she feels her bleeding has increased.

# Manage shoulder dystocia

## Get ready



### Key knowledge

If you see signs of shoulder dystocia, you will need at least two people to help.

#### Act fast but carefully!

#### Avoid the 4 P's! Do NOT Panic, Do NOT Pull, Do NOT Push, Do NOT Pivot

Shoulder dystocia can cause:

- Injury to the baby's shoulders, arms, or hands.
- Asphyxia, which can lead to brain damage or death. If the cord is cut too early, this stops the flow of oxygen to the baby and increases the risk of asphyxia, cerebral palsy and death during shoulder dystocia.
- Injury to the woman such as tearing of her cervix, rectum, uterus, or vagina, which may lead to hemorrhage.

Do NOT perform routine episiotomy. Cut an episiotomy only if needed to allow space for maneuvers.

#### Keep the cord intact as long as possible.

Cutting a nuchal cord stops the flow of oxygen to the baby and increases the risk of asphyxia, cerebral palsy and death during shoulder dystocia.

Do not jerk or pull on the head or use strong downward traction until the shoulder is freed from the pubic bone. This may cause permanent damage to the brachial plexus nerve (Erb's palsy). These nerves provide feeling and movement in the shoulder, arm and hand.

### Key Actions

1. SHOUT FOR HELP! Mobilize all available help.
2. Ask a team member to prepare for newborn resuscitation (personnel and equipment).
3. Notify the theater to prepare for cesarean in case attempts to dislodge the shoulders are unsuccessful.
4. Quickly explain to the woman what is happening. Ask her to listen closely and to stop pushing.
5. Ensure the bladder is empty.
6. Announce the maneuver you will try.
7. Assign roles to team members:
  - One assistant to keep time to let others know the amount of time passed as they proceed from one maneuver to the next
  - Two assistants to assist with maneuvers
  - After birth, one of the assistants to care for the newborn

**NOTE:** Attempt each maneuver quickly and then proceed to the next. Repeat the maneuvers if birth has not occurred after trying all the maneuvers once. Proceed to Zavanelli's maneuver and cesarean birth if birth has not occurred after trying all the maneuvers twice.

## ***Hyperflex both legs and apply suprapubic pressure***

### ***Key knowledge***

Once you have called for help, move quickly from one maneuver to the next. Be ready for a baby that may need help to breathe.

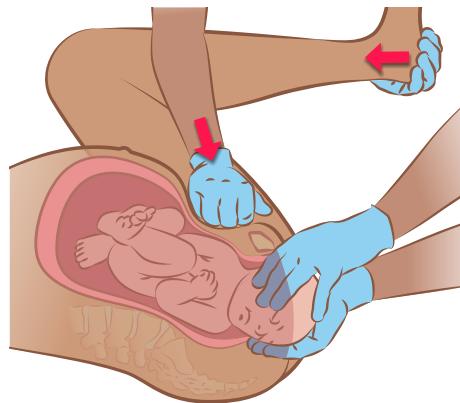
When helpers arrive, they should wash hands and put on sterile gloves and other PPE before assisting.

NEVER apply fundal pressure. This will make the shoulder more stuck and can result in uterine rupture.

Having the woman's knees flexed to her chest increases space in the pelvis and applying suprapubic pressure helps dislodge the stuck shoulder (McRoberts maneuver).

### ***Key Actions***

1. Tell everyone that you will start by hyperflexing both legs and applying suprapubic pressure. Assign roles to team members, including a time keeper to tell you to move on to the next maneuver after 60 seconds.
2. With the woman on her back, ask her to bring her knees as far up as possible towards her chest.
3. Ask two assistants to push her flexed knees firmly up onto her chest.
4. Have one helper who is pushing her flexed knee to apply suprapubic pressure downwards to help the shoulder dip below the pubic bone.



5. Consider episiotomy only if space is needed to perform internal maneuvers.
6. Apply firm, continuous traction downwards on the fetal head to deliver the anterior shoulder. Avoid excessive traction on the head as this may result in Erb's palsy!
7. If the shoulder is born, proceed with birth. If the shoulder still is not born, tell your team that you will move to the next maneuver.

## ***Internal rotation maneuvers***

### ***Key knowledge***

When the first maneuver has not resulted in birth after 60 seconds, you need to move to internal rotation maneuvers.

#### **There are two internal rotation maneuvers:**

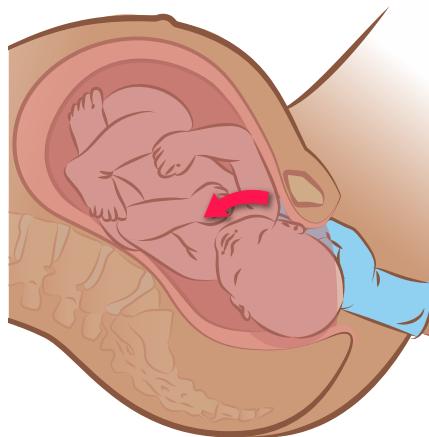
- Apply internal pressure to the shoulder that is anterior (Rubin II maneuver) – this will reduce the diameter of the shoulder girdle.
- Place a hand behind the non-stuck shoulder and rotating the shoulder in a corkscrew maneuver until the impacted shoulder is released (Woods corkscrew maneuver).
- The McRoberts maneuver also can be applied during the Rubin maneuver and may facilitate its success.
- An episiotomy may be required to allow room for the provider's hands.

### ***Key Actions***

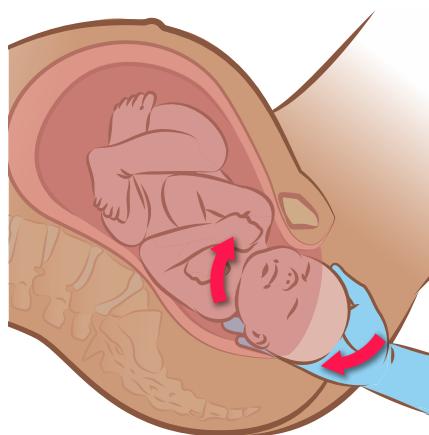
#### **Rubin II maneuver**

1. Tell your team you will now apply pressure to the anterior shoulder. Assign roles to team members.
2. Remind a helper to tell you when 60 seconds have passed and when it is time to proceed to the next maneuver.
3. Wearing a sterile glove, insert a hand into the vagina along the baby's back.

4. Apply pressure to the anterior shoulder in the direction of the baby's sternum to rotate the shoulder.



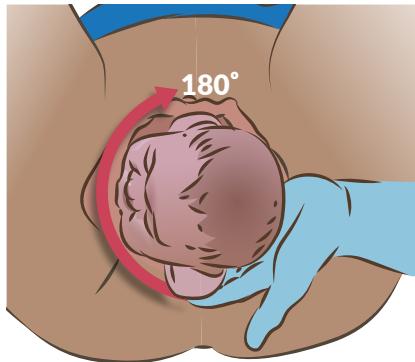
5. If needed, apply pressure to the shoulder that is posterior in the direction of the sternum



6. **If the shoulder is born**, proceed with birth. **If the shoulder is not born**, tell your team that you will move on to the next maneuver.

### **Woods corkscrew maneuver**

1. Remind a helper to tell you when 60 seconds have passed so you can try the next maneuver.
2. Wearing a sterile glove, insert a hand into the vagina along the baby's back.



3. Place at least two fingers (index and middle) on the anterior aspect of the posterior shoulder.
4. Apply pressure to the posterior shoulder and rotate the body 180°.
5. After 90° you may need to switch hands to complete the full 180° turn.
6. **If the shoulder is born**, proceed with birth. **If the shoulder is not born**, tell your team that you will move on to deliver the posterior arm.

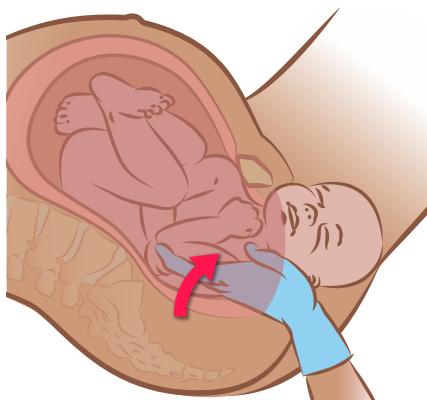
## ***Deliver the posterior arm***

### ***Key knowledge***

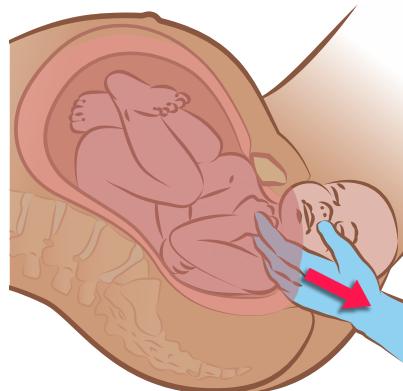
When internal rotation maneuvers have not resulted in birth, you need to deliver the posterior arm (Mazantte maneuver). Care must be taken to grasp the arm as directed. If the upper arm is grasped and pulled directly, this may result in a fracture of the humerus. Often, the baby will spontaneously rotate in a corkscrew manner as the arm is delivered. The anterior shoulder will then slip under the pubic bone.

### ***Key Actions***

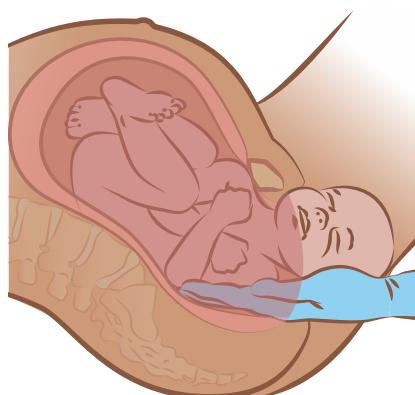
1. Tell your team that you will now deliver the posterior arm. Assign roles.
2. Remind a helper to tell you when 60 seconds have passed so you can try the next maneuver.
3. Consider episiotomy if space is needed to perform internal maneuvers.
4. With sterile gloves on, insert a hand into the vagina.



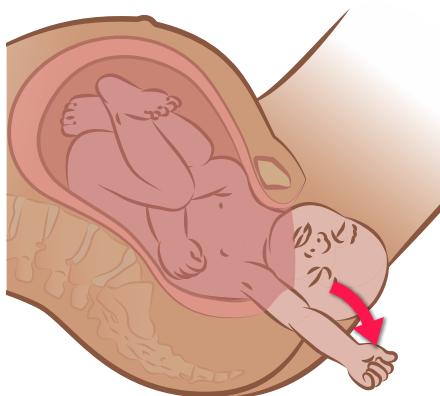
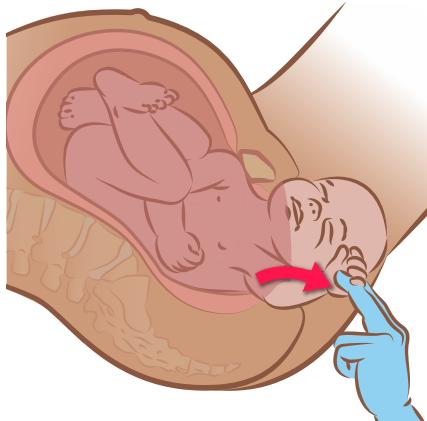
5. Identify the posterior arm and follow it to the elbow.



6. If the elbow is flexed, grasp the forearm and hand and pull out the arm. If it is extended, apply pressure to the antecubital space to flex the arm.



7. Grasp the forearm or hand and then pull the arm out of the vagina. This will also deliver the posterior shoulder.



8. **If the shoulder is born**, proceed with birth. If the shoulder still is not born despite the above measures, tell your team that you will try the next maneuver.

## **Get on hands and knees**

### **Key knowledge**

Rolling the woman onto her hands and knees, known as the all-fours or Gaskin maneuver, is a safe, rapid, and effective technique for managing shoulder dystocia. When a laboring woman changes from semi-reclining to hands and knees, the room in the pelvis expands. The obstetric conjugate increases by as much as 10 mm, and the sagittal measurement of the pelvic outlet increases by up to 20 mm.

### **Key Actions**

1. Tell your team you will now try the Gaskin maneuver. Assign roles to team members.
2. Remind a helper to tell you when 60 seconds have passed so you can try the next maneuver.
3. Help the woman into hands and knees position. Have the woman arch her back to help widen the pelvis.

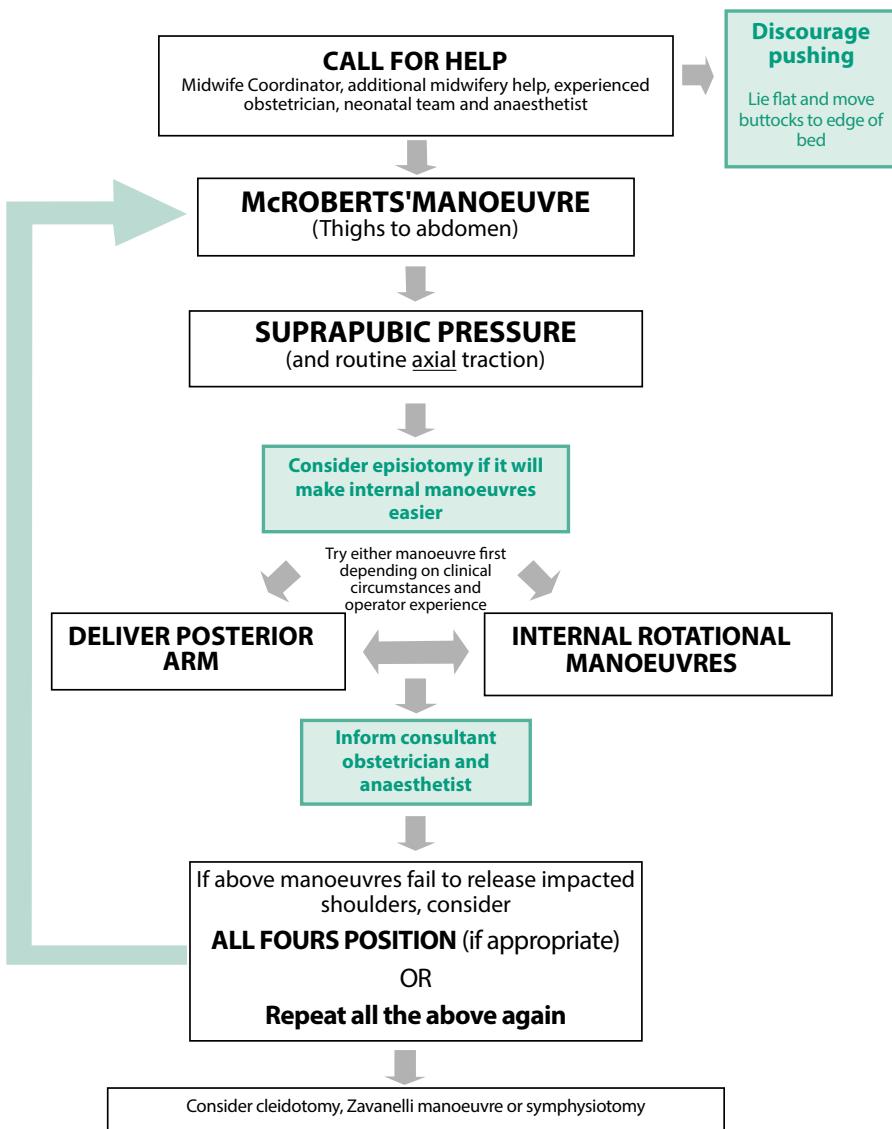


4. Apply gentle traction on the head towards the floor to deliver the posterior shoulder.
5. If needed, apply pressure to the shoulder that is posterior in the direction of the sternum.
6. Once the shoulder is born, proceed with birth. If the shoulder still is not born, tell your team that you will begin maneuvers again starting with hyperflexion of the legs and suprapubic pressure.

If the baby is still not born *after attempting all of the maneuvers once*, begin again with hyperflexion of the legs and suprapubic pressure. Have someone alert the theater that the first round of maneuvers has failed and an emergency cesarean birth may be needed.

If the baby is still not born *after attempting all of the maneuvers twice*, perform the Zavanelli maneuver and prepare the woman for cesarean birth.

## Algorithm for the management of Shoulder Dystocia



Baby to be reviewed by neonatologist after birth and referred for Consultant Neonatal review if any concerns

DOCUMENT ALL ACTIONS ON PROFORMA AND COMPLETE CLINICAL INCIDENT REPORTING FORM.

## HELPERR mnemonic: Actions and rationale

Action		Rationale
<b>H</b>	Call for help	You will need assistance for the maneuvers and the newborn.
<b>E</b>	<b>E</b> nd pushing  Evaluate for episiotomy (Before performing episiotomy, remember: <b>Most cases of shoulder dystocia can be relieved with the McRoberts maneuver and suprapubic pressure.</b> )	Continuing to push will further impact the shoulder.  Shoulder dystocia is a bony impaction, so episiotomy alone will not release the shoulder. However, <b><i>consider performing an episiotomy to provide additional room to carry out internal maneuvers.</i></b>
<b>L</b>	<b>L</b> egs (the McRoberts' maneuver)  • Flex and abduct the maternal hips, positioning the maternal thighs up onto the maternal abdomen	This will increase the functional size of the pelvis, decrease the bisacromial diameter (the distance between the outermost parts of the fetal shoulders) and change the direction of the maternal force to be perpendicular to the plane of the inlet.
<b>P</b>	Suprapubic <b>p</b> ressure (also known as Rubin 1)  • The hand of an assistant should be placed suprapubically over the fetal anterior shoulder, applying pressure in a cardiopulmonary resuscitation style with a downward and lateral motion on the posterior aspect of the fetal shoulder. • Initially, pressure should be continuous. If unsuccessful, a rocking motion may be used to dislodge the shoulder from behind the symphysis pubis	Pressure applied to the posterior aspect of the anterior shoulder in a downward lateral direction should cause the shoulders to adduct (reduce the bisacromial diameter) and rotate under the symphysis pubis.
<b>E</b>	<b>E</b> nter maneuvers (internal rotation)  • Rubin II: Insert fingers of the right hand into the vagina (at 5 o'clock position) and apply anticlockwise pressure to the posterior aspect of the anterior shoulder. External suprapubic pressure can also be applied by an assistant to provide additional force • Woods' screw: While maintaining the position of the right hand, insert the fingers of the left hand into the vagina (at 7 o'clock position) and apply anticlockwise pressure to the anterior aspect of the posterior shoulder. Both hands should be used to apply anticlockwise pressure simultaneously. External suprapubic pressure can also be applied by an assistant	These maneuvers attempt to rotate the anterior shoulder into an oblique plane to dip under the symphysis pubis.
<b>E</b>	<b>E</b> nter maneuvers (internal rotation)  • Reverse Woods' screw: Remove the left hand from the vagina (last hand in, first hand out). Keep the right hand in the vagina and slide the fingers down from the posterior aspect of the anterior shoulder to the posterior aspect of the posterior shoulder, and apply clockwise pressure. Do not apply external suprapubic pressure.	
<b>R</b>	<b>R</b> emove the posterior arm  • The elbow then should be flexed and the forearm delivered in a sweeping motion over the fetal anterior chest wall.	Removing the posterior arm from the birth canal shortens the bisacromial diameter, allowing the fetus to drop into the sacral hollow, freeing the impaction.
<b>R</b>	<b>R</b> oll the woman on her hands and knees  • The woman rolls from her existing position to the all-fours position.	Often, the shoulder will dislodge during the act of turning, so that this movement alone may be sufficient to dislodge the shoulder.  Room in the pelvis increases when a woman moves from lying down to hands and knees.  In addition, once the position change is completed, gravitational forces may aid in the delivery of the shoulders.

Gobbo R, Baxley EG. Shoulder dystocia. In: ALSO: advanced life support in obstetrics provider course syllabus. Leawood, Kan.: American Academy of Family Physicians, 2000.

## Zavanelli maneuver

### Key knowledge

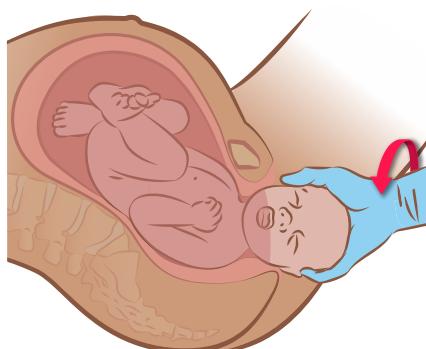
Zavanelli maneuver is difficult and used only when all other attempts to resolve shoulder dystocia have failed.

It involves reversing all the cardinal movements of labor: flexing the fetal head and replacing it back into the maternal pelvis, then performing an emergency cesarean section as quickly as possible to deliver the baby.

Risks of the maneuver to the woman include soft tissue damage and sepsis and risks to the newborn include injury and asphyxia.

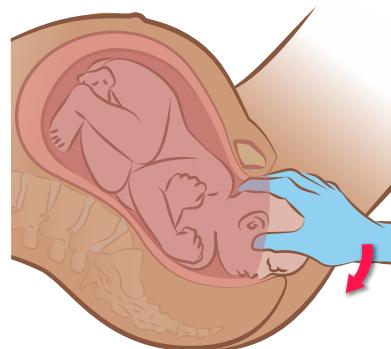
### Key Actions

1. If possible, give tocolytic medications to relax the uterus:
  - Terbutaline OR salbutamol (see pages 10-11)  
OR
  - Nifedipine: Give one dose of 20 mg by mouth
2. **Step 1: Reverse restitution:**  
With the woman's legs flexed, turn the head to direct OA or OP position if the head has rotated from either position.



3. **Step 2: Manually flex the head:**

Push the fetal head towards the baby's head to flex the head. If needed, apply pressure on the chin towards the baby's head to flex the head.

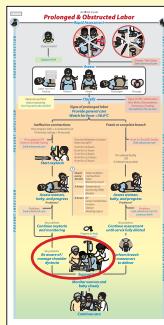


4. **Step 3: Push the head back into the vagina:**

Apply upward pressure on the head to replace the head in the vagina. Hold the head in position and proceed with emergency cesarean.

## **Immediately after birth with shoulder dystocia**

# **Provide care and record**



## **Key knowledge**

Provide immediate care for the woman and newborn, including resuscitation if needed. As with every birth, use active management of the third stage of labor, keep the woman and her baby in skin-to-skin contact for at least one hour, and encourage the baby to breastfeed within one hour of birth.

### **Newborn:**

- The baby may be asphyxiated. Begin resuscitation immediately if the baby does not breathe at birth. Asphyxia can cause brain injury or death.
- Immediately examine the newborn for any injuries from managing shoulder dystocia (Erb's palsy, broken clavicle, broken humerus).

### **Woman:**

- Shoulder dystocia increases the risk for postpartum hemorrhage due to atony. Be prepared!
- Examine the woman carefully for injuries. Deep genital tears may result from shoulder dystocia and cause hemorrhage. The woman may need surgery if the tears are beyond your scope to repair.
- Shoulder dystocia increases the risk for uterine rupture (intra-abdominal and/or

vaginal bleeding, rapid maternal pulse, signs of shock, abnormal uterine contour, tender abdomen).

If the woman or her baby are not stable, stabilize, then refer them immediately for advanced care.

## **Key Actions**

### **Newborn examination**

These steps should be part of the normal newborn examination:

1. Look at how the baby is spontaneously moving her arms: A lack of movement, or weaker movement in one arm compared to the other may indicate Erb's palsy or a broken humerus or clavicle.
2. Look at how the baby is holding her arms: If one arm is bent at the elbow and held against the body, this may indicate Erb's palsy or a broken humerus.
3. Look at how the arms move when the baby is rolled from side to side: An arm that flops when the baby is rolled from side to side may indicate Erb's palsy.
4. Check the moro or startle reflex: A baby with Erb's palsy will likely have an absent or poor Moro reflex on one side.
5. Check the grasp reflex in both hands:

- A baby with Erb's palsy will likely have an absent or poor grasp reflex on one side.
6. Check if the baby is fussy or cries with movement of the affected arm or when lifting her under the arms: This may indicate a broken clavicle or humerus.
  7. Feel the collarbones for crepitus, which may mean a fracture to the collarbone or arm.
  8. Document all findings.
  9. Refer the baby for more advanced diagnostic tests (ultrasound, X-ray, or MRI) and care, as needed.

#### **Documentation after shoulder dystocia**

In addition to routine documentation, document the following:

- The time of birth of the head
- Time at diagnosis of shoulder dystocia
- Maneuvers performed, the timing and sequence
- The baby's position and which shoulder was impacted (right or left)
- The time of delivery of the body and placenta
- Staff in attendance
- The condition of the baby at birth: Apgar scores, resuscitation efforts, evidence of injury, birth weight
- Episiotomy type and repair
- Lacerations and repair
- Counseling and information provided to the woman and family.

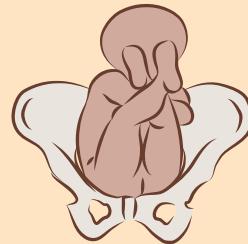
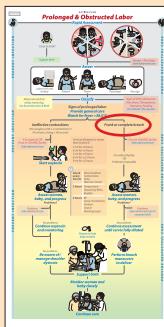
#### **Advanced Care Note**

Based on local protocols and standards, seek advanced care immediately if:

- The baby needs an ultrasound, X-ray, or MRI to diagnose the problem.
- The baby has problems your facility cannot manage.
- The woman has third- or fourth-degree tears

# Classify

## Frank or complete breech



Frank breech



Complete breech

### Key knowledge

Breech presentations are associated with higher risk of injury and death of the newborn.

A baby in breech presentation is more likely to have a congenital malformation, be premature and be at greater risk of trauma or asphyxia during birth.

**Have a senior provider confirm the presentation. If possible, confirm by ultrasound.**

Ideally, every breech birth should take place in a hospital with the ability to perform an emergency cesarean.

If a woman presents in latent phase of labor with breech presentation, offer external cephalic version (ECV) if: 37 weeks or more; vaginal birth is possible; facilities for emergency cesarean are available; membranes are intact, amniotic fluid is adequate AND someone is trained to do ECV.

- Breech birth should only occur in facilities with:
  - A clinician trained, experienced, and competent in conducting breech birth
  - An ultrasound to confirm position
  - An operating theater to perform an emergency cesarean
  - Facilities and providers to care for an asphyxiated baby with birth injuries.

**NOTE:** Women who present too late for transfer, must be managed where they are.

- Maternal conditions needed to attempt breech birth: No history of cesarean for CPD/obstruction
- Fetal conditions needed to attempt breech birth:
  - Frank or complete breech
  - Head is flexed – ideally confirmed by ultrasound
  - Estimated size does not seem large so <4kg
  - The baby is neither premature nor growth restricted. These babies are at higher risk for entrapment of the head.

**NOTE:** If you have doubts about the size of the pelvis, have someone who is trained to do clinical pelvimetry to assess the pelvis or seek advanced care.

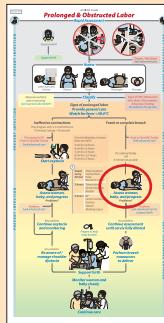
### Advanced Care Note

Based on local protocols and standards, seek advanced care immediately if:

- You suspect a contracted pelvis **OR**
- There is a large baby (>4000 g) **OR**
- The baby is growth restricted (<2000 g) or premature **OR**
- The neck is hyperextended or you cannot confirm flexion of the head **OR**
- The woman had a previous cesarean birth **OR**
- The facility does not have:
  - A clinician trained and experienced to conduct breech vaginal birth.
  - An ultrasound to confirm position.
  - Capacity to perform an emergency cesarean and care for an asphyxiated baby with birth injuries.

**If frank breech or complete breech**

# Assess the woman, baby and progress



## Key knowledge

Monitor and record maternal and fetal status and labor progress, as you would with any birth. However, ensure the woman has an IV line.

- If you suspect poor progress in a breech labor:
  - Do not augment labor.
  - Transfer her if at all possible, if you are not in an advanced care facility.
  - Ask a senior provider to help manage her labor.
- Prolapsed cord is a risk for breech labors. If FHR is slower than 110 bpm, do a vaginal exam to check for prolapsed cord.
- If her membranes rupture, check her cervix immediately for a prolapsed cord!
- Be prepared to act promptly in the rare circumstance of a trapped after-coming head or irreducible nuchal arms.

NOTE: meconium is common with breech labor and is not a sign of fetal distress if the FHR is normal.

## Key Actions

### Manage prolapsed cord in the first stage of labor:

- Call for help!
- Explain to the woman and her companion what is happening and what you need to do.
- Give oxygen at 4–6 L per minute by mask or nasal cannula.
- Check if the cord is pulsating to know if the baby is alive or not.
- Confirm first or second stage of labor by an immediate vaginal examination.

### If the cord is pulsating and the woman is in the first stage of labor:

- Call the operating theater for an emergency cesarean birth.
- Wearing sterile gloves, insert a hand into the vagina.
- Push the presenting part up to decrease pressure on the cord and dislodge the presenting part from the pelvis.
- Place the other hand on the abdomen in the suprapubic region to keep the presenting part out of the pelvis.
- Once the presenting part is firmly held above the pelvic brim, remove the other hand from the vagina.
- Keep the hand on the abdomen until a cesarean operation can be performed.
- If available, give tocolytics to reduce contractions.
- Perform an immediate caesarean operation.

### If the cord is pulsating and the woman is in the second stage of labor:

- Perform breech extraction and apply Piper or long forceps to the after-coming head
- Prepare for resuscitation of the newborn if the cord is NOT pulsating, proceed with birth of the baby in the manner that is safest for the woman. Provide emotional care to the woman and her companion and prepare for birth of a stillborn baby.

**If spontaneous breech birth  
Do not push until the cervix is fully dilated**

## **Perform breech maneuvers to deliver**



### **Key knowledge**

In most cases, the baby will deliver spontaneously.

Once birth begins, the most important principles are to gently support the body and avoid pulling on the baby unless there is absolutely no progress over several minutes of maternal pushing.

Pulling on the baby causes the neck to extend making it impossible to lift the body and deliver the head by flexion.

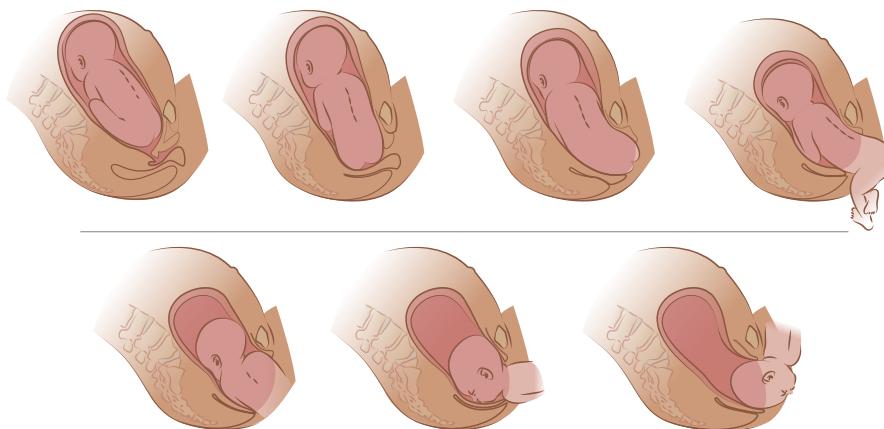
6. If the buttocks have not entered the vagina, encourage the woman not to push if she has the urge, but have her pant to avoid pushing.  
Once the buttocks have entered the vagina, have her follow her urge to push in the position of her choice. Breech maneuvers can be safely performed in any position.
7. Allow natural descent of fetal buttocks – keep your hands off the baby!!!!
8. If there is an obstruction from lesions or scars in the perineum, decide if you need to perform an episiotomy; consider waiting until the fetal anus is visible at the opening.
9. “Minimize handling” the baby.
10. Let the buttocks deliver until you can see the lower back and the shoulder blades. Make sure the fetal spine rotates anteriorly during delivery. The baby should be looking toward the woman’s tailbone.
11. Gently hold the buttocks in one hand, but do not pull on the baby’s body or

### **Key Actions**

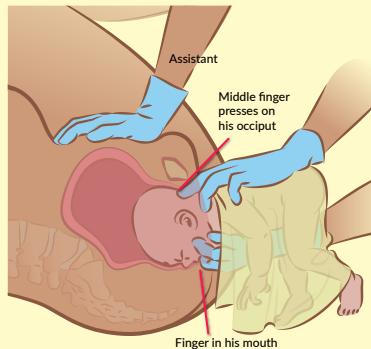
1. Perform vaginal examination to confirm fully dilated cervix and position of breech.
2. Call for assistance.
3. Confirm IV access.
4. Provide emotional support and encouragement.
5. Use a pudendal block if you are trained and it is necessary to help her relax.

- legs. The baby's flexed legs usually deliver on their own.
12. Hold the baby by the hips. Do not hold the baby by the flanks or abdomen as this may cause kidney or liver damage.
  13. Allow the arms to disengage spontaneously one by one. Only assist if necessary.
  14. After spontaneous delivery of the first arm, lift the buttocks towards the mother's abdomen to enable the second arm to deliver spontaneously.
  15. Cover the baby's body with a clean, dry cloth. Allow the baby to hang until the nuchal line is visible.
  16. Lay the baby face down with the length of her body over your dominant hand and arm.
  17. Keep the baby's body at or below the horizontal plane or axis of the birth canal to avoid hyperextending the baby's spine.
  18. Only when the baby's nose and mouth are visible at the introitus, bring the body up.
  19. Slowly let the head deliver. Try not to let the head "pop" out of the birth canal.

### Mechanism of Labor in Breech Birth



If frank breech or complete breech  
**Support breech birth**  
**Deliver the aftercoming head**



## Key knowledge

The head may deliver spontaneously or with assistance using the Mauriceau-Smellie-Voit (MSV) maneuver.

- With MSV, the combined neck flexion, traction on the fetus toward the hip/pelvis, and the suprapubic pressure keeps the head of a breech baby well flexed.

## Key Actions

- Support the baby's body over your dominant hand and arm.
- Place the first and third fingers of this hand on the baby's cheekbones and place the second finger in the baby's mouth to pull the jaw down and flex the head.  
**NOTE: Alternately, you may assist birth of the head without placing a finger in the baby's mouth.**
- Use the other hand to grasp the baby's shoulders.
- With fingers of the first hand, gently flex the baby's head towards the chest while continuing to pull on the jaw to bring the baby's head down until the hairline is visible.
- Pull gently to deliver the head.  
**Note:** Ask an assistant to push above the

woman's pubic bone as the head delivers. This helps to keep the baby's head flexed.

- Raise the baby, still astride your arm, until the mouth and nose are free.
- Place the baby on the woman's abdomen, immediately dry the baby and assess the baby's breathing, remove the wet cloth, and cover the baby with a dry cloth and a cap.
- Actively manage the third stage of labor.
- Clamp and cut the cord 1-3 minutes after birth.
- Provide essential care for the woman and baby.

## **If legs do not deliver spontaneously, deliver buttocks and legs**

### **Key knowledge**

The buttocks and legs should deliver spontaneously. If the legs do not deliver spontaneously, you can use Pinard's maneuver.

### **Key Actions**

If the legs do not deliver spontaneously, deliver one leg at a time, using **Pinard's maneuver**:

1. Push behind the knee to bend the leg.



2. Grasp the ankle and deliver the foot and leg.



3. Repeat for the other leg.
4. Gently hold the baby by the hips, but do not pull. Do not hold the baby by the flanks or abdomen as this may cause kidney or liver damage.



Do not pull the baby while the legs are being delivered. It may cause the neck to extend making it impossible to lift the body and deliver the head by flexion. This makes birth of the head more difficult and dangerous.

## ***If the arm does not spontaneously, deliver arms***

### ***Key knowledge***

The arms usually deliver spontaneously. However, sometimes the shoulders can become stuck when the arms are raised as the shoulders try to pass through the mother's pelvis.

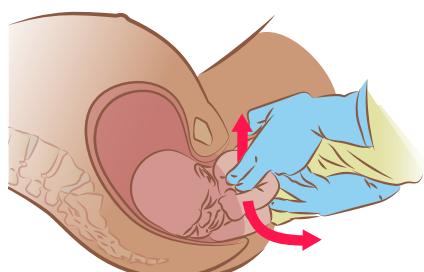
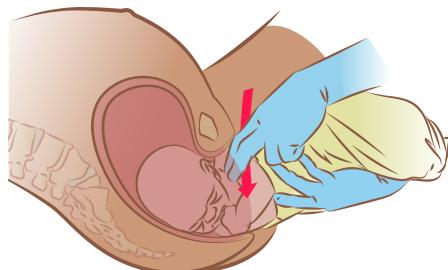
There are 3 methods for lowering the arms so that the shoulders can descend:

- If the arms are felt on the chest, place one or two fingers in the elbow and bend the arm, bringing the hand down over the baby's face.
- If the arms are extended above the head or folded around the neck, use Lovset's maneuver
- If you cannot turn the baby's body, deliver the posterior shoulder first.

### ***Key Actions***

#### ***If the arms are felt on the chest:***

1. Place one or two fingers in the elbow and bend the arm, bringing the hand down over the baby's face

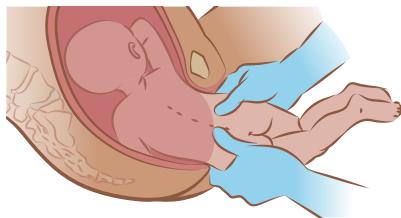


2. After spontaneous delivery of the first arm, lift the buttocks towards the mother's abdomen to enable the second arm to deliver spontaneously.

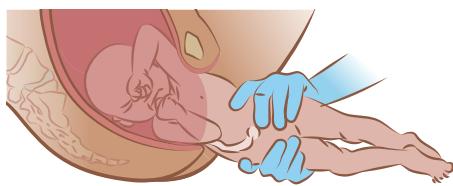
**If the arms do not deliver spontaneously and they are stretched above the head or folded around the neck.**

#### **Use the Lovset's Maneuver**

1. Hold the baby by the hips and turn the body half a circle, keeping the back uppermost and applying downward traction at the same time, so that the arm that was posterior becomes anterior and can be delivered under the pubic arch.



2. Assist delivery of the arm by placing one or two fingers on the upper part of the arm. Bring the arm down over the chest as the elbow is flexed with the hand sweeping over the face.

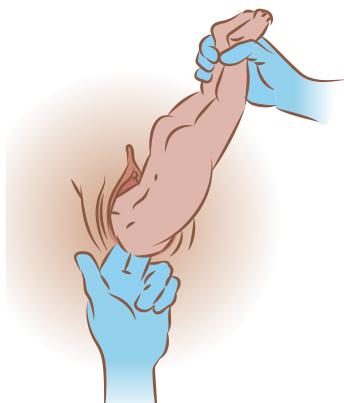


3. To deliver the second arm, turn the baby back half a circle, keeping the back uppermost and applying downward traction, and deliver the second arm in the same way under the pubic arch.



**If the arms do not deliver spontaneously and you cannot turn the baby's body:  
Start with the posterior shoulder**

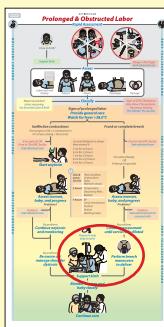
1. Hold and lift the baby up by the ankles.
2. Move the baby's chest towards the woman's inner leg. The shoulder that is posterior should deliver.



3. Deliver the posterior arm.
4. Lay the baby back down by the ankles. The shoulder that is anterior should now deliver.
5. Deliver the anterior arm.

If you cannot deliver the head and it is trapped, call for help from a senior, experienced provider who can use forceps or other advanced procedures and alert the operating theater.

## If frank or complete breech Support birth



### Key knowledge

Continue monitoring the woman, fetus, and labor progress during second stage. Act fast if there are problems.

Be sure you have an assistant to help with the birth and to be ready if the newborn needs resuscitation. In most cases, breech birth will occur spontaneously. It is important to promote the sense that the birth is normal and only use medical interventions if there is a clear need.

**Whenever possible, encourage and help the woman choose the position at birth that she prefers, including upright positions.**

Alert the operating theater that you have a woman with breech fetal position in second stage so they are ready if needed.

Once the baby is born, ensure the newborn is breathing well and provide active management of the third stage of labor.

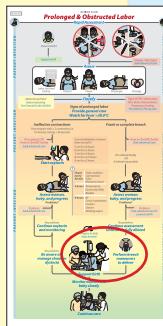
### Act quickly if there are problems!

Breech presentation increases the risk of:

- Fetal distress
- Fetopelvic disproportion/obstruction
- Cord prolapse especially with complete breech
- Fetal head entrapment
- Rapid descent of fetal head which may cause intracranial hemorrhage
- Cervical spine injuries from hyperextension of the head
- Delayed birth of the head which can lead to asphyxia from cord compression or separation of the placenta
- Traumatic injuries to the baby including fractures of the humerus, femur or clavicle; dislocation of the hips
- Erb's palsy
- Traumatic injuries to the woman

## *Immediately after breech birth*

# Provide care and record



### Advanced Care Note

Based on local protocols and standards, refer the following for advanced care:

- Women with suspected obstetric fistula.
- Women with third or fourth degree tears.
- Newborns with injuries or complications.

## Key knowledge

Provide immediate care for the woman and newborn, including resuscitation if needed. If either the woman or her newborn are not doing well, stabilize then refer immediately for advanced care.

### Examine the woman carefully

- Repair any tears to the cervix or vagina.
- Repair episiotomy if one was done.

### Examine the baby carefully

- Intracranial hemorrhage – result of rapid compression of the head during birth
- Spinal cord injury
- Dislocation of the hips
- Fractures of the humerus, femur or clavicle
- Erb's palsy
- Babies in frank breech position may continue to hold their legs in this position for several days after birth.
- Due to the pressure during labor and birth, it is normal for the baby's hip to be bruised and genitalia to be swollen.

## Key actions

### In addition to checking for injuries related to breech birth, check the following:

1. Check for signs of intracranial hemorrhage: Lethargy, neonatal seizures, apnea, feeding problems, irritability, bulging fontanelle, shallow or strained breathing, abnormal tone, altered level of consciousness.
2. Look at how the baby is moving her legs: A lack of movement or restricted motion in one leg may indicate hip dislocation or a broken femur. Restricted abduction (when the femur moves

outward to the side), may indicate hip dislocation. Restricted movement in both arms or legs may indicate a spinal cord injury.

Babies in frank breech position may continue to hold their legs in breech position for some days after birth.

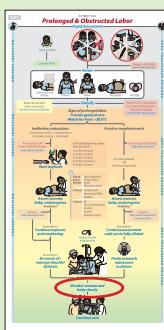
3. Look for symmetry in thigh and gluteal folds, and limb length: Asymmetrical thigh or gluteal folds, or difference in limb length, may indicate hip dislocation. If both hips are dislocated, symmetry will remain.
4. Look at the buttocks and genitals for bruising or injuries. Due to pressure during labor and birth, it is normal for the baby's hip to be bruised and genitalia to be swollen.
5. Document all findings.
6. Refer the baby for more advanced diagnostic tests (ultrasound, X-ray, or MRI) and care, as needed.

## Document after breech birth

In addition to routine documentation, document the following:

- Type of breech
- Time at diagnosis
- Maneuvers performed, timing and sequence
- The time of birth and delivery of the placenta
- Name of staff in attendance
- Condition of the baby at birth: Apgar scores, resuscitation efforts, evidence of injury, birth weight, GA
- Presence of any congenital anomalies
- Episiotomy type and repair
- Lacerations and repair
- Information and counseling provided to the woman and family

# **Monitor woman and baby closely Continue care**



Monitor woman and baby Check every 15 min for 2 hrs	
Woman	Uterus Bleeding BP Pulse
Baby	Breathing Color Pulse
Both	Temperature, repeat if not normal

## **Key knowledge**

If a woman had complications during labor or birth, she and her baby need closer monitoring.

A woman with complications during labor may be at a higher risk of infection due to interventions such as IV and IM injections, catheterization, cesarean or instrumental birth.

Women who had augmentation of labor are at higher risk for PPH. In addition to the standard uterotonic for prevention at all births, give the equivalent of 10 IU of oxytocin over 3.5 hours to keep the uterus contracted. Then discontinue if she is not bleeding.

A woman who had prolonged labor may be at an increased risk for obstetric fistula. Ask if she is having urinary or fecal incontinence. Refer her for specialist care if you suspect a fistula.

Women with uterine infection during labor are at risk for:

- Postpartum uterine infection
- Sepsis as are their newborns
- PPH
- Blood clots in the lungs and pelvis

Even after the immediate postpartum period, women who have experienced prolonged labor or uterine infection and their babies continue to be at higher risk for problems.

## **Key Actions**

### **If the woman was started on antibiotics during labor:**

- Continue antibiotics after birth for 24-48 hours after the last clinical signs and symptoms - temperature  $>38^{\circ}\text{C}$ , uterine tenderness, foul-smelling discharge - have ended.
- Monitor the newborn carefully for signs of infection and sepsis and act quickly if there are problems!
- Treat the newborn with prophylactic antibiotics (IM or IV) for at least two days: ampicillin 50 mg per kg every 12 hours and gentamicin 5 mg per kg every 24 hours if the baby is at term / 4 mg per kg every 24 hours if the baby is premature.

### **Advanced Care Note**

Based on local protocols and standards, refer the following for advanced care:

- Women with suspected obstetric fistula
- Women with third or fourth degree tears
- Newborns with injuries or complications and your facility is unable to manage it

### **In addition to routine care:**

- Keep the woman and baby in the facility until you are sure they are stable, there are no signs of infection, and the woman has no signs of fistula.
- Keep the woman and her baby together 24 hours a day. Do not separate them unless they need critical care. If the baby is in a special care nursery, make sure the woman has access to her baby and has help to feed the baby – either breastfeeding or expressing her milk for feeding.

### **Care for the woman:**

- Watch closely for signs of PPH, infection, and fistula. Explain to her that she is at increased risk.
- Watch for signs of fistula and let her know what to watch for.
- Women with complications may be at a higher risk for postpartum depression. Give emotional support and tell her and her family what to watch for.

### **If the woman was started on antibiotics during labor and the infection is not getting better:**

- Make sure that dosages of antibiotics are adequate
- Re-evaluate the woman for other sources of infection, and
- Consider changing the antibiotic.

### **Care for the baby:**

- Watch closely for signs of infection and explain to the parents that the baby is at increased risk.
- Continue to watch for signs of trauma and seek advanced care if the baby is not getting better or seems to be getting worse.
- Help the woman breastfeed. The baby may have problems with breastfeeding or the woman may be tired and have more difficulty.
- Seek advanced care for any of the following in the newborn:
  - Birth weight <1500 g
  - Labored breathing
  - Unstable temperature (normal axillary temperature: 36.5–37.5°C)
  - Cyanosis or pallor
  - Intermittent apnea, seizures, poor responsiveness, poor feeding, persistent alterations of muscle tone
  - Weight loss greater than 10% to 12% of birth weight.
- Examine the woman and newborn before leaving the delivery room, at 6 hours, and before discharge from a facility.
- Counsel her on postpartum care, hygiene, nutrition, care of the newborn and when to return. Ensure she has a family planning method of her choice. Help the woman and her family develop a complication readiness plan.

## ***Team Action Plan – to improve care for labor and birth***

To do/Action	S.M.A.R.T Goals	Person responsible	Timeframe
	S .....	.....	.....
	M .....	.....	.....
	A .....	.....	.....
	R .....	.....	.....
	T .....	.....	.....
	S .....	.....	.....
	M .....	.....	.....
	A .....	.....	.....
	R .....	.....	.....
	T .....	.....	.....
	S .....	.....	.....
	M .....	.....	.....
	A .....	.....	.....
	R .....	.....	.....
	T .....	.....	.....

## ***PEER PRACTICE: Instructions for practice and quality improvement activities after training***

### **What is “continued practice” and why is it important?**

Training alone is not enough to improve care. We need to add regular practice and other activities to reinforce new knowledge and skills. Practice also develops skills and improves teamwork and clinical decision-making.

### **Who helps you practice?**

One or two people from your facility will be asked to coordinate practice sessions. The coordinator will remind you to practice and will guide the sessions. She/he is a colleague who has learned how to support these activities. Remember though, you and your peers can practice without a coordinator if you do not have one or they are not available.

### **Skills practice objectives**

The objectives of each session link to key learning objectives. Skills practice will help you refine your skills, especially for skills that are not used often. During all sessions, demonstrate respectful care, good teamwork, and communication.

### **Session preparation**

Each session plan includes preparation and a list of items needed. Please review the session plans and answers on page 50 in advance. ***Invite all staff who are on duty the day of the session to participate even if they did not join P&OL training.***

The answer section includes additional important facilitation guidance. Practice coordinators are responsible for ensuring that everything is ready. Session plans also include instruction about how to run the session. You will need at least two copies of each Provider's Guide (PG) for reference and

the Action Plans. Coordinators will coach as needed in a friendly, helpful manner.

### **Simulating care with skills practice, role plays, and drills**

To help practice skills and clinical decision making, skills practice, role plays and drills are used. When conducting these activities, coordinators will:

- Establish a safe learning environment
- Run the activity
- Conduct organized debrief
- Support discussion to improve learning
- Identify and explore gaps
- Help providers transfer what they learned into clinical practice

### **Debrief**

During debrief, coordinators guide providers to analyze how they performed individually and as a team. This gives everyone the chance to learn by carefully reviewing what happened. Coordinators and providers should be constructive and avoid embarrassing each other. The goal is self-reflection and team improvement.

## LDHF ACTIVITIES

### Session 1: Revisiting Taking Action!

20 minutes

#### Preparation:

- Review the team's Taking Action! goals.
- Remember for all sessions, invite all staff who are on duty the day of the session to participate, even if they did not join the original training.

#### Materials:

- Marker/pens/paper
- Taking Action! Plan

#### Read objectives aloud:

- Review personal commitments and team SMART goals made at the end of the training activities.
- Update commitments and goals.

#### Activity:

20 minutes

Begin by asking staff who were at the P&OL training to recall the closing activity. During that activity, each person chose one thing they would do differently after training. Ask them to take a moment to remember the personal commitment they made. These do not need to be shared with the group, however, if anyone wants to share their commitment and any progress they made, this is a great opportunity for recognition and motivation! Then ask, ***"Do you remember which SMART goals we agreed to work together to improve?"***

- Share the completed Taking Action! Plan and ask a volunteer to review it with the group. Say, ***"Please turn to page 40 in Provider's Guide 2 and write each SMART goal as we review it."*** Pause after each objective and ask:
- ***"Do we need any additional resources or support to achieve this goal? If so, how can we get these resources?"***
  - ***"What activities or tasks do we need to do to reach this goal? Who will be responsible for moving it forward?"***
  - ***"Do we need to adjust this goal?"***

Update the action plan and be sure everyone has a role. Tell providers that you will come together in 6 weeks to review progress.

### Session 2: Strengthening referral processes

Preparation: 30 minutes

Activity: 30 – 60 minutes

#### Preparation:

- Prior to this activity, PCs should be clear on the referral pathway and locate the facility's referral protocol. If this is a referral facility, the emphasis should be on communication with facilities that refer patients; if the facility refers to a higher-level facility, the emphasis should be on communication with facilities where they refer patients.
- Engage facility and maternity In-charges. Talk to them about referrals for complicated cases. Do they have any observations, or suggestions for changes they would like to see? Are they supportive of facilitating a conversation between the referring and receiving facilities to promote effective communication and problem solving? If so, proceed with the next step.
- Set up a conversation –either virtually (by WhatsApp or other) or in person (face-to-face is best) between several members of the referring team and the receiving team. Teams may choose to invite colleagues to a standing team/staff meeting at either facility, include a discussion about referrals in a scheduled supportive supervision visit, or utilize other already scheduled opportunities. PCs and facility leadership will likely know who is the right person to lead the discussion.

#### Materials:

- Written referral procedure
- Sample referral slip

#### Read objective aloud:

- Strengthen communication and teamwork between referring and receiving providers to improve client outcomes.

**Activity:****Selected facilitator should:**

- Warmly welcome colleagues to the meeting, and read the objective above. Emphasize the shared objective – everyone being on the same team is in the best interest of the client and the providers – how, TOGETHER, can we strengthen referrals?
- Make introductions – does everyone know each other already? If not, give some time to this – these relationships are the basis for effective communication and trust in emergencies. Use a culturally appropriate ice-breaker to help participants in the meeting get to know each other.
- Encourage all providers to first share what they think is going well with the referral process between the two facilities. Acknowledge and recognize successes.
- Ask, ***"Is there anything we can do to make referrals more efficient and smoother?"***  
Encourage self-reflection from referring and receiving facilities.
- Reference the referral protocol and referral slip, as appropriate – is there anything that needs to be changed or updated?
- Clear and prompt communication is the key to successful referrals. Can everyone agree on the best mode of communication and essential documentation/ information that should accompany clients? What documentation should be sent back to the referring facility?
- Have teams:
  - Develop S.M.A.R.T. goals for strengthening referrals and communication to improve outcomes for women and newborns.
  - Develop an action plan and a timeline to review and update the action plan. Allow for creative, context-appropriate solutions.
  - Share personal mobile numbers, or create closed WhatsApp groups to support effective referrals.
- Close with gratitude for everyone's time and commitment, and agree to a follow up check in – either in-person or virtual – in 1 to 2 months to assess progress.

**Session 3: Assessment**

60 minutes

**Read objectives aloud:**

- Improve assessment of women with suspected prolonged labor.
- Correctly interpret findings on assessment.
- Make a plan of care based on findings.

**Preparation:**

- Invite all staff who are on duty!

**Materials:**

- Case studies

**Activity:**

- Divide participants into groups of 3-4 and assign one case study to each group. Ask participants to read the scenario, record findings on the labor record used at their facility, and answer the questions. Tell learners to prepare an SBAR communication if the woman needs advanced care. Refer them to the guidance on pages 17-18 of PG 1.
- Circulate and offer supportive feedback as needed. Answers are on page 50 of this PG.
- Give participants 20 minutes to complete their case study.
- After they have completed the work, give each group 10 minutes to present their case to the group.
- Facilitate a discussion on:
  - How the woman, fetus, and labor progress were monitored
  - How care was documented
  - If providers responded appropriately to findings.
- Facilitate a discussion on how to improve monitoring, documentation, and identification of and response to complications.

**SCENARIO 1:**

Ms. B. is a 28 yo G5P3 at 39 weeks who was admitted at 21:00 hours. You are taking over her care at 05:00 hours. Her mother is with her.

**Rapid assessment at 05:00 hours:**

- Ms. B. has no danger signs.
- She appears to tolerate the contractions and is able to talk during them. She is mostly lying down but is able to walk around without help.
- Vital signs: T 37.9°C, Pulse 80 beats/minute and regular, BP 124/82, Respiratory rate 16 breaths/minute.
- FHR: 148/minute between contractions.
- Her conjunctivae are pink.
- Her mouth is moist and skin turgor good.

**Review of labor record:** You note the following about her care before 05:00 hours from her labor record:

- Vital signs: at 21:00 hours – BP 128/78, pulse 88 bpm, temperature 38.0°.
- Contractions: at 21:00 hours, 2/10 minutes lasting 30 seconds.
- FHR: At 21:00 hours – 136 bpm; 01:00 hours - 148 bpm
- Descent: at 21:00 hours, 3/5
- Presentation: Cephalic
- Membranes: No information on time of rupture. At 21:00 hours and at 01:00 hours, "C" is documented.
- Cervical dilatation: at 21:00 hours, 3 cm; at 01:00 hours, 5 cm.
- Position, caput, molding: Not documented
- No treatments beyond labor support documented.

**History:**

She had 4 ANC visits and no identified complications. She is negative for HIV, syphilis, and hepatitis B; blood group is O+. Hemoglobin at last ANC at 34 weeks was 10.4 g/dL. She was using condoms for FP and has no history of gynecological surgery. Her past medical history was unremarkable. She is married, living with her husband and children. She has no family history of chronic disease and no history of smoking, alcohol, or drug use. She had one spontaneous abortion at 12 weeks; has 2 living children; and one child who died at 7 days old

from an unknown cause. She had 3 previous uncomplicated vaginal births.

**At 05:00 hours:**

- Her uterus is not tender on palpation. The bladder is not distended.
- Contractions 2/10 minutes lasting 30 seconds.
- Level of engagement: 3/5.
- FHR: 148/minute between contractions.
- Membranes are ruptured, liquor is clear.
- Cervical dilatation: 7 cm
- Presentation / Position: occiput anterior.
- Caput 0, molding 0.

**"What is the most likely diagnosis?"**

**"Does Ms. B need advanced care?"**

**"If she needs advanced care, how will you communicate with the providers to whom you will refer her?"**

**SCENARIO 2:**

Ms. C. is a 38 yo G8P5 at 40 weeks who was admitted in labor at 22:00 hours. Fundal height is 37 cm. You are taking over her care at 02:00 hours. Her sister is with her.

Rapid assessment at 02:00 hours:

- Ms. C. has no danger signs.
- She appears to tolerate the contractions but is not able to talk during them.
- She is mostly lying down and appears exhausted. Her eyes are sunken, her mouth is dry and the skin of her forearm went back slowly when pinched.
- Vital signs: T 37.4°C, Pulse 110 beats/minute and regular, BP 82/52, Respiratory rate 32 breaths/minute.
- Her conjunctivae are pale.
- FHR: 90-100 bpm between 3 contractions.

**You note the following about her care before 02:00 hours from her labor record:**

- Vital signs: at 22:00 hours – BP 102/58, pulse 102 bpm, temperature 37.5°.
- FHR: 126-158 bpm (recorded irregularly)

- Descent: at 22:00 hours: 2/5
- Presentation: Cephalic
- Contractions: at 22:00 hours: 4/10 minutes lasting 50-60 seconds.
- Membranes: No information on time of rupture. At 22:00 hours, "C" is documented.
- Cervical dilatation: at 22:00 hours: 5 cm; at 02:00 hours: 7 cm.
- Position, caput, molding: Not documented
- No treatments beyond labor support documented.

### **History**

She had 2 ANC visits and no identified complications. She is seronegative for HIV, syphilis, and hepatitis B. Blood group is AB+. Hemoglobin at her 1st ANC at 22 weeks was 9.2 g/dL. She was using combined contraceptive pills for FP and has no history of gynecological surgery. Her past medical history was unremarkable. She is married, living with her husband. She has no family history of chronic disease and no history of smoking, alcohol, or drug use. She had one spontaneous abortion at 12 weeks and one at 8 weeks; and has 4 living children; one child died at 18 months after severe diarrhea. She had 5 previous apparently uncomplicated vaginal births.

### **At 02:00 hours:**

- Her uterus is not tender on palpation. The lower portion of the uterus is bulging and there is the presence of a constriction ring / band that remained after catheterization of 300 mL of hematuria because she was unable to pass urine.
- Contractions 5/10 minutes lasting 50-60 seconds.
- Level of engagement: 2/5.
- Vaginal exam: cervix dilated at 7 cm, soft and swollen.
- Membranes are ruptured, there is greenish, meconium-stained amniotic fluid (liquor).
- Presentation/Position: left occiput anterior.
- Caput +++, molding +++.

**"What is the most likely diagnosis?"**

**"Does Ms. C need advanced care?"**

**"If she needs advanced care, how will you communicate with the providers to whom you will refer her?"**

### **Session 4: Absent fetal heart rate**

**60 minutes**

#### **Read objectives aloud:**

- Confirm intrauterine fetal demise.
- Provide counseling and care at the time of the diagnosis, immediately after birth, and postpartum.

#### **Preparation:**

Review how providers manage intrauterine fetal demise and stillbirths. Review facility protocols for intrauterine fetal demise and stillbirths. Compare what you found with what was taught in the class. Facilitate discussions with appropriate personnel to update protocols as needed.

#### **Materials:**

Facility protocols for intrauterine fetal demise and stillbirths.

#### **Activity:**

Read the following scenario:

***Mrs. O. is a G1P0 18 year old woman who came to the facility after laboring for more than 20 hours at home. On admission, you cannot hear the fetal heart rate. You confirmed fetal death using ultrasound. After birth, you find the umbilical cord is tightly wound three times around the baby's neck, there are no congenital anomalies, and the placenta is normal.***

- Divide participants into groups of 3 and assign each group one specific time for counseling: at the time of diagnosis, at birth, and postpartum. They should refer to page 11 of PG1.
- Give each group 15 minutes to prepare a

role play on counseling and providing care for a woman with intrauterine fetal demise. One participant will play the role of “provider”, one the role of the “woman”, and one the role of the “companion”.

- Circulate and offer supportive feedback as needed.
- After 15 minutes, give each group 5 minutes to present their role play. After each role play ask:
  - What was done well?
  - How could counseling and care be improved?
- Facilitate a discussion on how care can be improved when there is intrapartum fetal demise and stillbirth.

### Session 5: Maternal fever in labor

30 minutes

#### Read objectives aloud:

- Diagnose the cause of fever in labor.
- Demonstrate care for women in labor with a uterine infection.

#### Preparation:

- Review facility protocols for management of uterine infection in labor and compare with what was taught in the class. Facilitate discussions with appropriate personnel to update protocols as needed.

#### Materials:

- Mock ampicillin, gentamycin, paracetamol
- IV fluids, IV giving set
- Cloths to bathe the woman's face
- BP machine, stethoscope, fetoscope, gloves, clock with a second hand

#### Activity:

Introduce the session by asking:

***“What are potential causes of fever in labor?”***

***“What are signs/symptoms of uterine infection?”***

***“How will you diagnose shock?”***

***“How will you diagnose dehydration?”***

Read the following scenario to participants:

***Mrs. O. is a G2P1 23 year old woman. On admission, you find her T is 39.8°C and after a focused history and physical examination you find her uterus is tender and she has foul-smelling liquor. She is not in shock and she is not dehydrated. What is her most likely diagnosis?***

- Ask for four volunteers to demonstrate managing uterine infection. Two participants will act as providers, one will be the woman, and one the companion. Have them follow key actions on pages 42-43 in PG1.
- As the volunteers demonstrate. Participants observing should give feedback to ensure all steps are taken.
- After the demonstration ask:
  - What was done well?
  - What could be improved?
- Facilitate a discussion on how to improve timely diagnosis of uterine infection and correct management after diagnosis.

### Session 6: Augmentation in labor

60 minutes

#### Read objectives aloud:

- Assess women whose labor is not progressing normally.
- Identify women whose labor need augmentation.
- Prepare the IV oxytocin solution.
- Make decisions about how to manage the oxytocin infusion.

#### Preparation:

- Review facility protocols for augmentation in labor and compare with what was taught in the class. Facilitate discussions with appropriate personnel to update protocols as needed.

#### Materials:

- Watch video  [“Using oxytocin to treat prolonged labor”](#)

- Labor monitoring tools, pens/pencils
- BP machine and stethoscope
- Mock oxytocin, IV fluids, IV giving set, clock with a second hand
- Labels for the IV bag/bottle

#### **Activity:**

- Divide participants into groups of 2-3. Give one labor monitoring tool and a pen to each group. Ask participants to complete the monitoring tool as you read the information below – make sure all participants have documented the information before moving on.

#### **The woman was admitted in active labor at 10:00 with:**

- T 37°C, Pulse 82 bpm, Respirations 18 breaths/min, BP 124/72; FHR: 142 bpm
- fetal head 5/5 palpable
- two contractions in 10 minutes, each lasting less than 20 seconds
- cervix dilated 5 cm
- presentation/position: OA
- membranes not ruptured

#### **At 14:00:**

- T 37.6°C, Pulse 88 bpm, Respirations 18 breaths/min, BP 118/68; FHR: 136 bpm
- fetal head 5/5 palpable
- one in 10 minutes, each lasting 20-40 seconds
- cervix dilated 6 cm
- presentation/position: OA
- membranes not ruptured

#### **At 18:00:**

- T 37.8°C, Pulse 82 bpm, Respirations 18 breaths/min, BP 116/64; FHR: 132 bpm
- fetal head 5/5 palpable
- two contractions in 10 minutes, each lasting less than 20 seconds
- cervix dilated 6 cm
- presentation/position: OA
- membranes not ruptured

#### **At 21:00:**

- T 38°C, Pulse 92 bpm, Respirations 20 breaths/min, BP 106/56; FHR 92 per minute
- fetal head still 5/5 palpable
- two contractions in 10 minutes, each lasting less than 20 seconds
- cervix dilated 6 cm
- presentation/position: OA
- membranes ruptured - amniotic fluid stained with meconium
- first degree molding and caput

- When all groups have completed the labor monitoring tool, ask:

*"What information is missing that could help you manage the woman's labor?"*

*"What could you have done at 10:00 when she was admitted with two contractions in 10 minutes, each lasting less than seconds?"*

*"Was labor managed appropriately?"*

*"Why or why not?"*

*"When should the diagnosis of prolonged labor have been made?"*

*"At what time should labor have been augmented?"*

*"What findings must be present to ensure safe, appropriate use of augmentation?"*

- If possible, re-watch the video  [Using oxytocin to treat prolonged labor](#)

- Remind participants that augmentation will start with an oxytocin concentration of 2.5 units in 500 mL of 5% dextrose or normal saline or RL. Ask for a volunteer to prepare the oxytocin infusion, write the label to attach to the IV bottle / bag, and demonstrate adjusting the drip rate. Other participants may provide feedback.

- Ask participants to refer to the job aids on pages 6-10 in PG2 and ask:

*"What will you monitor every 30 minutes when a woman is receiving an oxytocin infusion?"*

*"What findings must be present to increase the IV drip rate?"*

*"What findings will lead you to a decision to*

**stop the IV drip rate?"**

**"What is the maximum dose if the concentration is 2.5 units/500 mL?"**

**"Which women should NOT receive an oxytocin infusion of 10 units/500 mL?"**

- Facilitate a discussion on how to improve care for women when ineffective contractions are found to be the cause of prolonged labor.

## Session 7: Oxytocin perfusion

45 minutes

### Read objectives aloud:

- Safely administer an IV oxytocin perfusion.
- Monitor a woman during augmentation.
- Identify and manage hyperstimulation.

### Preparation:

- Review facility protocols for management of hyperstimulation and compare with what was taught in the class. Facilitate discussions with appropriate personnel to update protocols as needed.
- Identify tocolytics available in the facility.

### Materials:

- Childbirth simulator
- BP measuring device, stethoscope, fetoscope, gloves, clock with a second hand
- Labor monitoring tool
- Mock oxytocin, IV fluids, IV giving set, betamimetics

### Activity:

Ask for two volunteers: one who will act as the woman and one who will act as provider. Read the scenario:

- **Ms. O is a G2P1 21 year old woman. A decision to augment labor with oxytocin was made at 10:00 am. Please demonstrate starting the oxytocin infusion.**
- **It is now 12:00 and you find: FHR is 142 bpm, pulse is 82 bpm, and there are 2 contractions / 10 minutes each lasting 30 seconds. Please demonstrate how you will**

**manage Ms. O's care.**

- **It is now 15:00 and you find: FHR is 142 bpm, pulse is 82 bpm, and there are 4 contractions / 10 minutes each lasting 70 seconds. Please demonstrate how you will manage Ms. O's care.**

Ask:

**"When would you consider giving betamimetics to relax the uterus?"**

**"When would you consider restarting the oxytocin infusion after stopping it for hyperstimulation?"**

- Facilitate a discussion on how to improve identification and management of hyperstimulation in your facility.

## Session 8: Shoulder dystocia

60 minutes

### Read objectives aloud:

- Prepare for shoulder dystocia.
- Identify shoulder dystocia.
- Perform all maneuvers to successfully manage shoulder dystocia.

### Preparation:

- Review facility protocols for management of shoulder dystocia and compare with what was taught in the class. Facilitate discussions with appropriate personnel to update protocols as needed.

### Materials:

- Video: [Stuck shoulders](#)
- Childbirth simulator
- BP measuring device, stethoscope, fetoscope, gloves, clock with a second hand
- Delivery kit

### Activity:

- Watch the video [Stuck shoulders](#)
- Ask participants to refer to page 24 in PG2 and review the HELPER mnemonic.
- Ask:

**"What are signs of shoulder dystocia?"**

**"What will you need help with when manag-**

**“What is shoulder dystocia?”**

**“How will you prepare the woman?”**

**“Who do you need to notify when you first identify shoulder dystocia?”**

**“How will you let your team know what maneuvers you will try?”**

- For each scenario, ask for a volunteer to act as the woman and another to be the provider. All participants should come to help when the provider calls for help. Be prepared to provide constructive feedback.
- After each scenario, ask providers to reflect on what went well, what could be improved, and how they might change their practice.

**Scenario 1:** Tell the woman to hold onto the baby until she gets on hands-and-knees.

**Scenario 2:** Tell the woman to let the baby be born after hyperflexion and suprapubic pressure.

- Facilitate a discussion on how to improve identification and management of shoulder dystocia.

## Session 9: Breech birth

60 minutes

### Read objectives aloud:

- Identify maternal and fetal conditions needed to attempt breech vaginal birth.
- Manage spontaneous breech birth.
- Deliver buttocks and legs if legs do not deliver spontaneously
- Deliver arms if they do not deliver spontaneously

### Preparation:

- Remember to invite all staff who are on duty!

### Materials:

- Childbirth simulator
- BP measuring device, stethoscope, fetoscope, gloves, clock with a second hand
- IV giving set and IV fluids

### Activity:

- If possible, re-watch the video [“The breech birth”](#).

- Ask participants to refer to pages 30-36 in PG2.

- Ask:

**“What maternal conditions should be present before attempting a breech vaginal birth?”**

**“What fetal conditions should be present before attempting a breech vaginal birth?”**

**“In which facilities should a vaginal breech birth not be attempted if the woman arrives in first stage of labor?”**

- For each scenario, ask for a volunteer to act as the woman and another to be the provider. All participants should come to help when the provider calls for help. Be prepared to provide constructive feedback.

- After each scenario, ask providers to reflect on what went well, what could be improved, and how they might change their practice.

**Scenario 1:** Tell the woman to allow for a spontaneous breech birth.

**Scenario 2:** Tell the provider to demonstrate how to deliver the buttocks and legs when they don't deliver spontaneously.

**Scenario 3:** Tell the provider to demonstrate how to deliver the arms if they are stretched above the head.

- Ask:

**What breech presentation are most likely to result in vaginal birth?**

**How do we identify those presentations?**

- Facilitate a discussion on how to best manage vaginal breech birth in your facility.

## SESSION ANSWERS

Note that Sessions 1 and 2 are facility-based discussions and there are no "answers". Session 4 is to practice counseling skills and so there are no "answers".

### Session 3: Assessment answers

#### SCENARIO 1:

##### **"What is the most likely diagnosis?"**

- While contractions are less than 3/10m, lasting less than 40 seconds, the cervix has dilated 2 cm in 4 hours and the maternal and newborn status is reassuring.

##### **"Does Ms. B need advanced care?"**

- Not at this time.

##### **"If she needs advanced care, how will you communicate with the providers to whom you will refer her?"**

- N/A

#### SCENARIO 2:

##### **"What is the most likely diagnosis?"**

- Obstructed labor
- Maternal distress
- Fetal distress
- Shock

##### **"Does Ms. C need advanced care?"**

- Yes!

##### **"If she needs advanced care, how will you communicate with the providers to whom you will refer her?"**

#### Example for completing the SBAR tool:

- **S = Situation.** Say, "I am (name) from the labor ward of (facility) caring for Ms. C who is hospitalized on the labor and whom I think may have obstructed labor."
- **B = Background.** Say, "Ms. C. a 38 yo G8P5 woman, was admitted to the labor 4 hours ago, at 10 pm. Her gestational age is 40 cm by LMP. Her cervix on admission was 5 cm and at 2 am is 7 cm. At 2 am, we noted a Bandl's ring that remained after

we catheterized her for 300 mL of hematuria because she could not pass urine. On admission her vital signs and FHR were within normal limits; at 2 am her vital signs are: T 37.4°C, Pulse 110 beats/minute and regular, BP 82/52, Respiratory rate 32 breaths/minute, and FHR was 90-100 bpm between 3 contractions. Contractions have been 5/10 minutes each lasting 50-60 seconds; fetal descent at 8pm and 2am was 2/5. We are not sure when membranes ruptured; but amniotic fluid (liquor) is greenish and meconium-stained. Her obstetric and medical history are unremarkable, aside from a hemoglobin of 9.2 g/dL at 22 week's gestation. We have started an IV with normal saline at 1L in 1 hour but she has received no other medical treatment."

- **A = Assessment:** Say, "I think she has obstructed labor because her cervical dilatation has only increased by 2 cm in 2 hours, there are signs of fetal and maternal distress, and I noted a Bandl's ring and hematuria."
- **R = Recommendation:** Say, "I think Ms. C. needs a cesarean birth. Is there anything you would like me to do until you arrive?"

### Session 5: Maternal fever in labor answers

#### **"What are potential causes of fever in labor?"**

- Non-obstetrical infection (e.g. malaria, urinary tract, respiratory tract)
- Overheated woman / room or maternal dehydration
- Uterine infection
- Epidural has been in place for four or more hours

#### **"What are signs/symptoms of uterine infection?"**

Uterine infection is presumed if you find:

- Temperature >38°C PLUS
- Fundal tenderness AND/OR
- Foul-smelling vaginal discharge.

### ***"How will you diagnose shock?"***

Signs of shock:

- Fast pulse (110 beats per minute or more) OR
- Low blood pressure (systolic less than 90 mmHg)

A woman with shock may also have:

- Rapid breathing - over 30 breaths per minute or more
- Pale skin, especially around the inner eyelids, mouth, or palms
- Sweating, or cold and clammy skin
- Changes in mental state: anxiety, confusion, or unconsciousness
- Scanty urine output - less than 30 mL per hour.

### ***"How will you diagnose dehydration?"***

- Dry skin and mouth, dry lips, swollen tongue, dizziness, thirst, lethargy
- The skin returns very slowly when pinched
- Decreased urine output
- Low BP/orthostatic hypotension
- Acetone/ketones ++ or more

On the following scenario read to participants:

***Mrs. O. is a G2P1 23 year old woman. On admission, you find her T is 39.8°C and after a focused history and physical examination you find her uterus is tender and she has foul-smelling liquor. She is not in shock and she is not dehydrated."***

You asked, ***"What is her most likely diagnosis?"***

- Uterine infection.

### ***Session 6: Augmentation in labor answers***

When all groups complete the labor monitoring tool, you asked:

***"What information is missing that could help you manage the woman's labor?"***

- Power: Condition of the cervix (effacement, if oedematous), application of the fetal presenting part to the cervix"

- Patient: Position (lying down, walking, sitting), hydration, coping, presence of a companion
- Passenger: Caput/moulding, GA, estimated fetal weight
- Passage: Adequacy of pelvis

### ***"What could you have done at 10:00 when she was admitted with two contractions in 10 minutes, each lasting less than seconds?"***

- Encourage mobility and provide general labor support including pain management, labor companion, hydration/nutrition, management of anxiety/fear, and treatment for dehydration (if present) that may improve contractions.

### ***"Was labor managed appropriately? Why or why not?"***

- The labor monitoring tool was not adequately filled out and this scenario demonstrates inappropriate management of prolonged labor.

### ***"When should the diagnosis of prolonged labor have been made?"***

- The diagnosis of prolonged labor was evident at 14:00.

### ***"At what time should labor have been augmented?"***

- Labor should have been augmented with oxytocin at 14:00.

### ***"What findings must be present to ensure safe, appropriate use of augmentation?"***

- Ineffective contractions are the most likely cause of poor progress when the cervix is 5 or more cm dilated OR during second stage of labor AND
- The facility can manage maternal and fetal complications of augmentation, perform cesarean birth, has oxytocin kept in cold chain of 2-8 °C for distribution and storage, and has staff who can titrate the infusion and can closely monitor the woman, fetus,

- and labor AND
- There are no signs of CPD or obstruction AND
  - The presentation is cephalic and a mal-presentation/malposition requiring cesarean birth has been ruled-out AND
  - There is only one fetus.
  - Use caution when augmenting labor with oxytocin if the woman has had a prior cesarean birth OR do not augment depending on local guidance.

You asked participants to refer to the job aids on pages 6-10 in PG2 to answer the following questions:

***"What will you monitor every 30 minutes when a woman is receiving an oxytocin infusion?"***

Every 30 minutes, monitor and record:

- Duration and frequency of contractions
- Fetal heart rate
- Maternal pulse

***"What findings must be present to increase the IV drip rate?"***

Fewer than three contractions in 10 minutes, each lasting less than 40 seconds; maternal and fetus status are reassuring

***"What findings will lead you to turn off the augmentation?"***

- More than five contractions in 10 minutes, or if any contraction lasts longer than 60 seconds
- Fetal heart rate is abnormal (less than 110 or more than 160 beats per minute)

***"What is the maximum dose if the concentration is 2.5 units/500 mL?"***

Maximum dose: 60 gtt / minute – 15 mIU / minute

***"Which women should NOT receive an oxytocin infusion of 10 units/500 mL?"***

Multigravida and women with a previous caesarean birth

### Session 7: Oxytocin infusion answers

You read the following scenario:

***Ms. O. is a G2P1 21 year old woman. A decision to augment labor with oxytocin was made at 10:00 am. Please demonstrate starting the oxytocin infusion.***

Participants should:

1. Check and record the woman's pulse, contractions, and the FHR.
2. Help her lie down comfortably on her left side.
3. Prepare the IV infusion of oxytocin in 500 mL of a chosen IV solution (5% dextrose or Ringer's Lactate or normal saline).
4. Label the bag with the concentration of oxytocin (2.5 units/500 mL) and the date and time oxytocin was added to the bag.
5. Check the drop factor of the IV giving set.
6. Begin infusing oxytocin using the calculated drip rate (10 gtt/min if using a drop factor of 20 gtt/mL).
7. Record oxytocin mIU/minute on the partograph or labor record.
8. Never leave the woman alone

You said, ***"It is now 12:00 and you find: FHR is 142 bpm, pulse is 82 bpm, and there are 2 contractions / 10 minutes each lasting 30 seconds."*** Participants should:

Increase the infusion rate to 50 gtt/min if using a drop factor of 20 gtt/mL (approximately 13 mIU/min)

You said, ***"It is now 15:00 and you find: FHR is 142 bpm, pulse is 82 bpm, and there are 4 contractions / 10 minutes each lasting 70 seconds."*** Participants should:

1. Explain what is happening to the woman and how you will manage the problem.
2. Stop the oxytocin infusion.
3. Position the woman on her left side.
4. Notify an obstetric specialist for consultation or prepare the woman for referral to a facility that can provide betamimetics, perform a cesarean operation and care for a baby with problems.

**NOTE:** Guidance should be adapted based on local protocols and standards.

You asked:

***"When would you consider giving betamimetics to relax the uterus?"***

- If the FHR is normal and normal uterine activity is not established within 20 minutes, relax the uterus using betamimetics.
- If the FHR is abnormal, relax the uterus using betamimetics.

***"When would you consider restarting the oxytocin infusion after stopping it for hyperstimulation?"***

If the FHR becomes reassuring or normal and normal uterine activity is established for a period of at least 30 minutes, cautiously restart oxytocin infusion if you are in an advanced care facility. Otherwise, seek advanced care.

### **Session 8: Shoulder dystocia answers**

You asked:

***"What are signs of shoulder dystocia?"***

- The head delivers but remains tightly against the vulva.
- The chin retracts and depresses the perineum.
- Traction on the head fails to deliver the shoulder, which is caught behind the symphysis pubis.

***"What will you need help with when managing shoulder dystocia?"***

- To:1) Keep time 2) Push the flexed knees firmly up onto her chest; 3) Apply suprapubic pressure; 4) Care for the newborn.

***"How will you prepare the woman?"***

- Quickly explain to the woman what is happening.
- Ask her to listen closely and to stop pushing.
- Ensure her bladder is empty.

***"Who do you need to notify when you first identify shoulder dystocia?"***

- SHOUT FOR HELP!
- Notify the theater to prepare for cesarean in case attempts to dislodge the anterior shoulder are unsuccessful.
- Ask someone to prepare for newborn resuscitation (personnel and equipment).

***"How will you let team members know what maneuvers you are attempting?"***

- Announce that you will start by flexing both legs to the woman's chest and applying suprapubic pressure.
- Assign roles to team members

### **Session 9: Breech birth answers**

You asked:

***"What maternal conditions should be present before attempting a breech vaginal birth?"***

- No history of cesarean for CPD/obstruction

***"What fetal conditions should be present before attempting a breech vaginal birth?"***

- Frank or complete breech
- Head is flexed – ideally confirmed by ultrasound
- Estimated size does not seem large meaning an estimated weight of <4kg
- The baby is neither premature nor growth restricted. These babies are at higher risk for the head to be trapped.

***"In which facilities should a vaginal breech birth not be attempted if the woman arrives in first stage of labor?"***

The facility does not have:

- A clinician trained and experienced to conduct breech vaginal birth.
- An ultrasound to confirm position.
- Capacity to perform an emergency cesarean and care for an asphyxiated baby with birth injuries.

