



OB

BLS-409

Please keep the slip of paper on your seat.

We are going to be using the OB manikins in three separate groups the 2nd hour. Those sitting in back will go first. Those in front will go last.

Group One #1-5

Group Two #6-10

Group Three #11-14

[OB manikins A-F]

LABOR AND DELIVERY

“The Miracle of Life”



“Want my stork pin,
but afraid of what will have to
do to get it”

Labor & Delivery Complication Rates

- Delivery presentation:
 - Vertex (crown) ~ 96% (19 out of 20)
 - Breech ~ 4% - (1 out of 20)
 - Other – limb presentation, prolapse cord = <1% (rare)
- Other delivery complications:
 - 10% of newborns require some assistance to begin breathing at birth (1 out of 10)-AHA Guidelines 2015 (3-6% need PPV)
 - <1% require extensive resuscitation measures -AHA Guidelines 2015 <1% are preterm 28wk or less (less than 1 out of 100)
 - Nuchal Cord ~15% (3 out of 20) –Sheiner et al. 2006 (up to 30%)
 - Shoulder Dystocia ~0.6-1.4% up to 8.8lbs (1 out of 100)
>8.8 lbs ~5-9% (1 out of 20 & approaching 1 out of 10)
 - Meconium Stained Amniotic Fluid – preterm, term, postterm:
~5% (1 out of 20), ~16.5 (3 out of 20), ~27% (3 out of 10)
[MAS occurs in about 2-10% of infants born through MSAF]

Training Video & Live Birth Footage

- YOUTUBE – live stream, public domain
- EMSAT videos

Disclaimer:

Some procedures shown in the videos may be beyond the scope of practice for pre-hospital providers. They are being shown solely for educational purposes. The procedures and patient care expressed are not necessarily endorsed by the Virginia Office of EMS.

In all cases, please follow local protocols and medical direction first.

There Are No Stupid Questions

- Book says: 'prepare for birth if delivery is imminent'...
 - If you don't have a lot of birthing experience how do you know when delivery is imminent or not?
 - How long do I wait on scene if baby does not deliver immediately?
- Book says: 'Usually you can slip the cord gently over the infant's head. If not, you may need to cut it and unwrap'...
 - OB kit has a sterile scalpel and no scissors, you really want me near a newborns neck with a scalpel? How am I going to get the clamps under a tight cord without tearing the cord?
 - I see lots of home videos where doctors don't cut the nuchal cord – why not?
 - https://www.youtube.com/watch?v=qHkK-m_2EiM

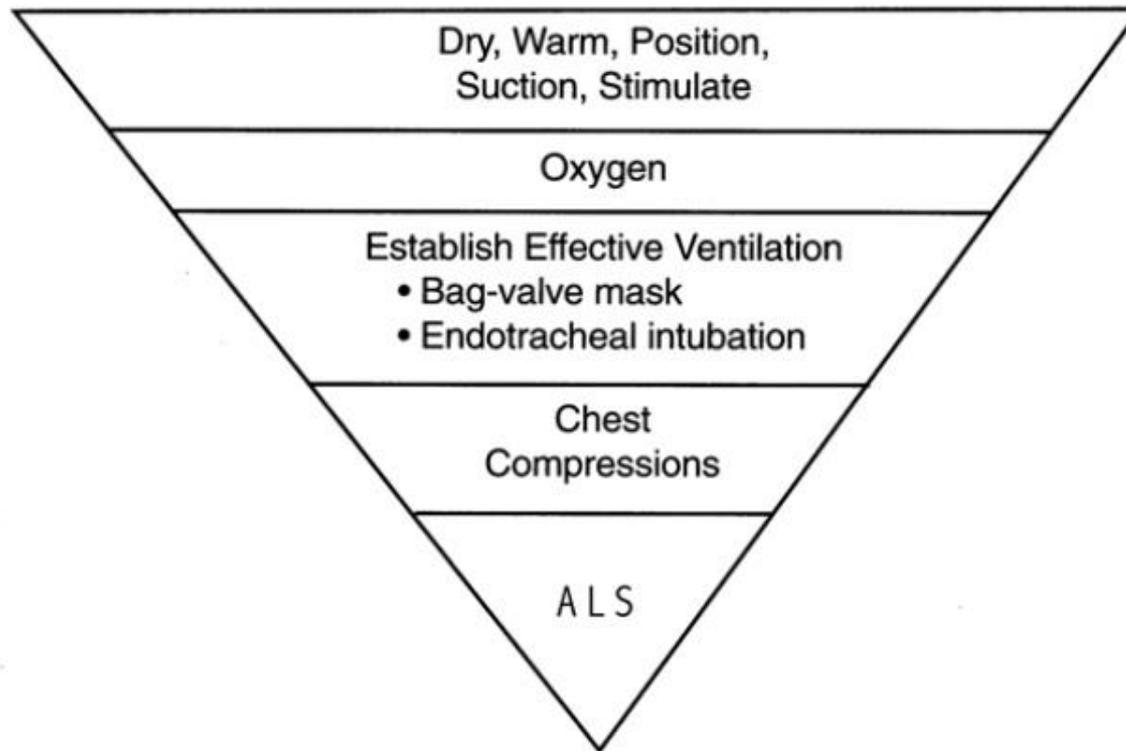
Labor & Delivery:

(Focus on: term baby, imminent delivery)

- Recognition and management of:
 - Normal delivery
 - Abnormal delivery
 - Vaginal bleeding in the pregnant patient
- Anatomy and physiology of normal pregnancy
- Pathophysiology of delivery complications

Newborn Resuscitation

Inverted Pyramid of Newborn Resuscitation



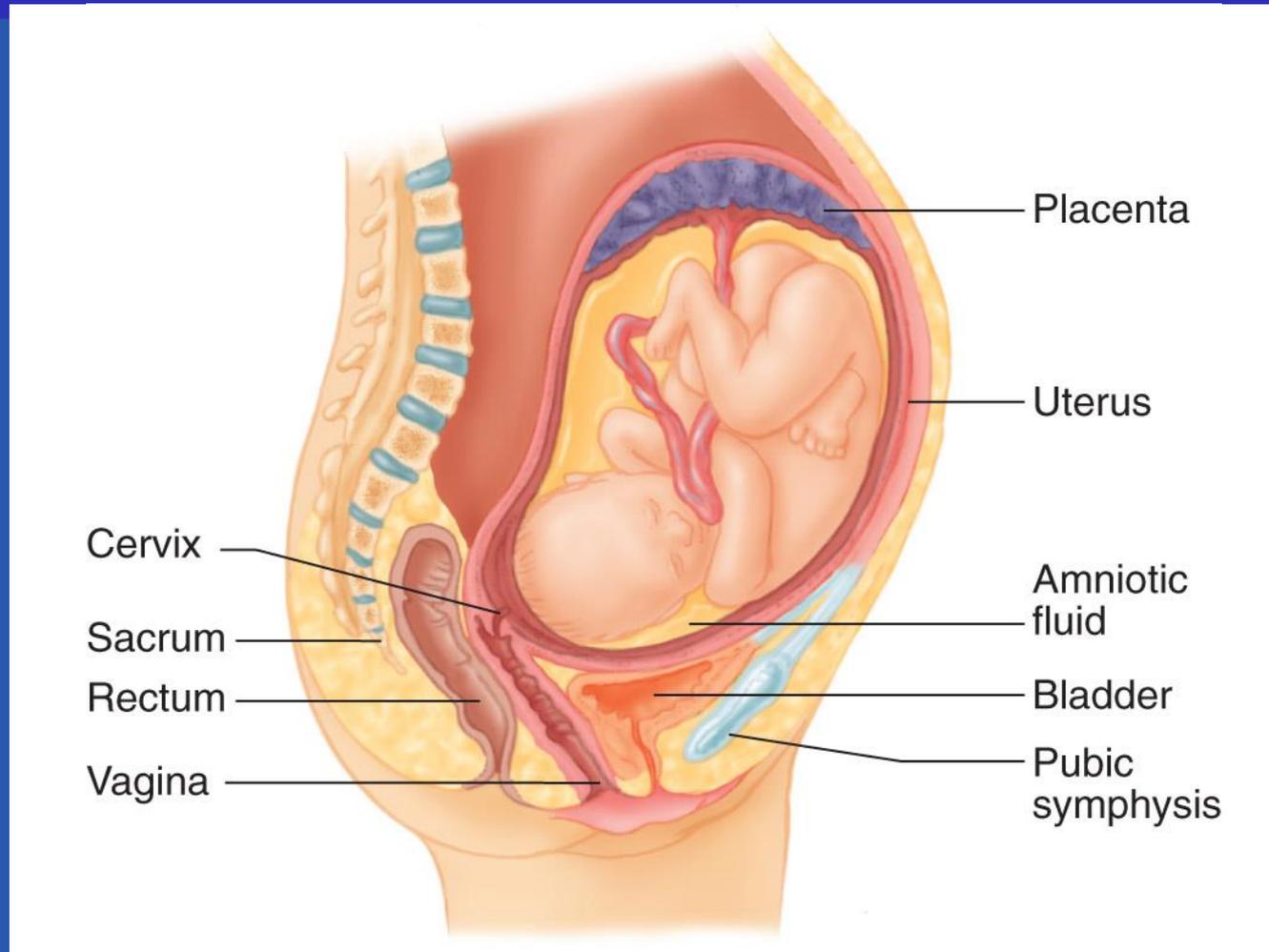
Adult Learning Principles

- HEAR
 - Reading/Lecture (1hr,15min)
- SEE (1hr+)
 - Diagrams, Slides
 - Training video w/ manikins
 - ***Live birth footage (incl. some rare events)
- DO (last 45 min of the day)
 - Hands on 'Normal' delivery simulation
 - 'Normal' delivery w/ assisted ventilations

The Scenario

- You are dispatched to an OB call with 'complications'. Police are on the scene and dispatch advises they say birth appears imminent.
- What goes through your mind on the way to the call?

Anatomy and Physiology of the Female Reproductive System



Patient Assessment

- Dispatch protocols usually include the dispatcher asking simple questions to determine whether birth is imminent.
- Patient assessment steps
 - Scene size-up
 - Primary assessment
 - History taking
 - Secondary assessment
 - Reassessment

Normal Delivery (animation)

- https://www.youtube.com/watch?v=ZDP_ewMDxCo&feature=youtu.be

All YouTube videos utilized are publicly accessible individually or in a YouTube playlist entitled:

- ***Normal OB Deliveries and OB Births w/ Complications***

www.youtube.com/playlist?list=PLlw78cqAxY9NMrWc2MHHQqlt_vfs7OpdV

The playlist is intended for general exposure to OB delivery and OB birthing complications. [*NOT intended for formal training*]

Scene Size-up (1 of 2)

- Scene safety
 - Your safety is a priority.
 - Take standard precautions.
 - Gloves and eye protection are a minimum if delivery is already begun or is complete.
 - If time allows, a mask and gown should also be used.
 - Consider calling for additional resources.

Scene Size-up (2 of 2)

- Mechanism of injury/nature of illness
 - You will encounter pregnant patients who are not in labor, so it is important to determine the MOI or NOI.
 - Do not maintain tunnel vision during a call.
 - Contractions may be caused by trauma or medical conditions.
 - Use oxygen to treat any heart or lung disease in a pregnant patient.
 - Will not harm the fetus

Primary Assessment

- Form a general impression.
 - The general impression should tell you whether the patient is in active labor or if you have time to assess and address other possible life threats.
 - As you walk into the house the police officer stops you in the kitchen, points to a puddle of light greenish fluid on the floor and tells you that the 'bag of waters' broke a few min ago and that the patient is through there in the living room.

AHA 2015 ECC GUIDELINES: Neonatal Resuscitation

- When Meconium Staining is Present-Updated
 - If the infant is **vigorous** with good respiratory effort and muscle tone, the infant may stay with the mother to receive the initial steps of newborn care. **Gentle clearing of meconium from the mouth and nose with a bulb syringe may be done if necessary.**
 - ***However, if the infant born through meconium-stained amniotic fluid presents with **poor muscle tone and inadequate breathing efforts**, the initial steps of resuscitation ... Routine intubation for tracheal suction in this setting is not suggested, because there is insufficient evidence to continue recommending this practice. Class IIb, LOE C-LD) NEW: OCT 2015***
- (In making this suggested change, greater value has been placed on harm avoidance (ie, delays in providing **bag-mask ventilation**, potential harm of the procedure) over the unknown benefit of the intervention of routine tracheal intubation and suctioning. **Therefore, emphasis should be made on initiating ventilation within the first minute of life in nonbreathing or ineffectively breathing infants.**
- Appropriate intervention to support ventilation and oxygenation should be initiated as indicated for each individual infant. This may include intubation and suction if the airway is obstructed.

Primary Assessment

- Form a general impression.
 - You perform a rapid scan. The mother is awake, breathing, moaning, her skin is diaphoretic and she says “I need help to go to the bathroom.”
 - For a term baby with mother having contractions or if water broken you need to visualize -looking for crowning or prolapse cord
 - When trauma or other medical problems present, evaluate these first. The police officer says he’s just the next door neighbor and was just called over by the husband for help.

Stay or Go?

- While most infants are delivered in a hospital occasionally the birth process moves faster than the mother expects. {Visualized-No Crown}
- You must then decide whether to:
 - Stay on the scene and deliver the infant
 - Transport the patient to the hospital
- “How far apart are your contractions?” Mom says there’s only about a minute in between.
 - Length between start of contractions (2min,10 sec)
 - Duration of contractions (70sec)

Terminology

- Gravida - number of pregnancies
- Para - number of pregnancies carried to viability and delivered
- Primigravida - pregnant for first time
- Multigravida - pregnant more than once
- Nulliparous - never carried a pregnancy to viability
- Multiparous - has had two or more deliveries that were carried to viability

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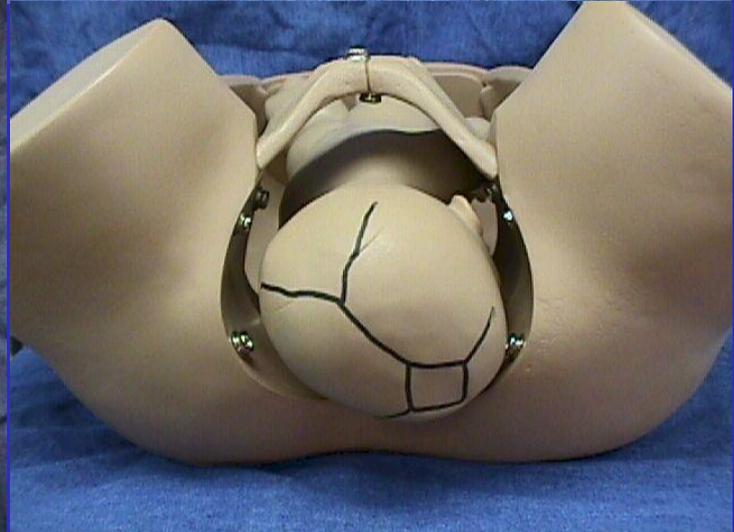
Urgent Maternal History

- “Is this your first baby?” **3rd** -Labor is generally much shorter in a woman who has delivered before.
- “When is Due date? **next week**/ “How many weeks pregnant are you?” **39** -Is the baby more than four weeks early? (i.e. <37wk)
- “Has your water broken?” If yes, was the fluid brownish or greenish (yellow) in color? **Yes, greenish**
- Does the doctor expect complications? **no**
(Verify has had prenatal care)
- Are multiple births expected? **no**
- Does the mother have any known health problems – **no**
HTN? Gestational or Chronic (>140/90mm Hg)
Diabetic?(was it well controlled during pregnancy?)
- Has the mother used any narcotic drugs recently? **no**

Normal Delivery (live birth footage)

- <https://www.youtube.com/watch?v=zD8j2JG2y3A>

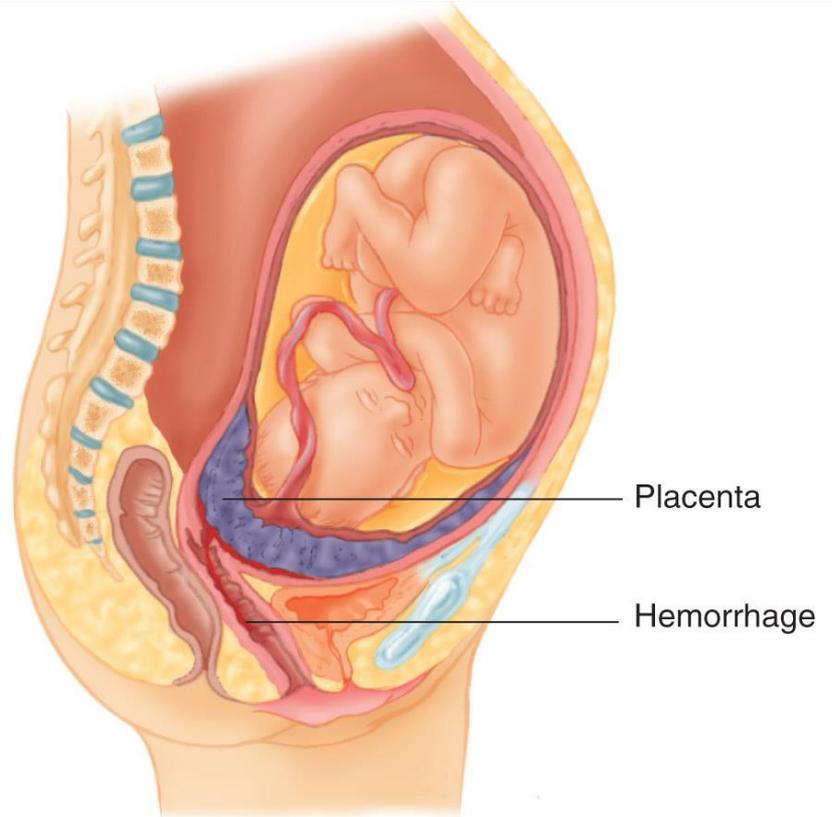
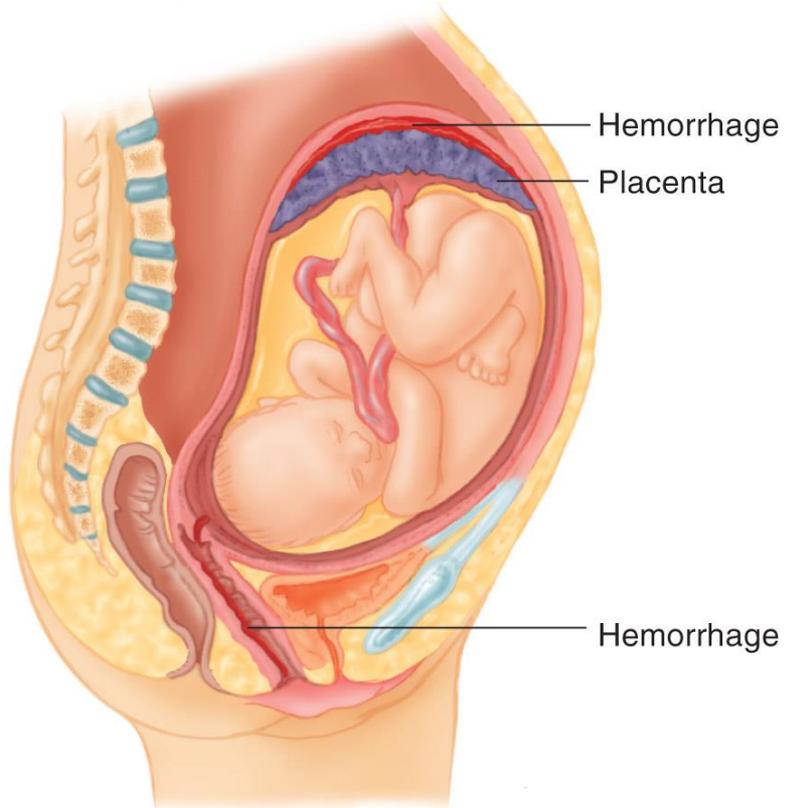
Anterior and Posterior Fontanelles



Primary Assessment (con't)

- Transport decision (cont'd)
 - Provide rapid transport for pregnant patients who:
 - Have significant bleeding and/or pain (placenta previa or abruptio placenta)
 - Are hypertensive (possible pre-eclampsia) (mild 140/90mm Hg, severe 160/110mm Hg)
 - Are having a seizure (Eclampsia)
 - Have an altered mental status
 - Transport in left lateral recumbent

Bleeding



Stages of Labor

Hospital

- 1st Stage – Thinning and dilation of the cervix
 - Regular contractions
 - Ends when cervix fully dilated
- 2nd Stage: Birth canal passage
 - Ends with delivery of the infant
- 3rd Stage:
 - Delivery of the placenta

EMS

- End of 1st Stage:
 - begins to crown
(when can see head in birth canal)
- End of 2nd Stage:
 - Delivery of the Infant
- End of 3rd Stage:
 - Delivery of the placenta

False Labor and Premature Rupture

Table 31-1 False Labor Versus True Labor

False Labor or Braxton-Hicks Contractions	True Labor
Contractions are not regular and do not increase in intensity or frequency. Contractions come and go.	Contractions, once started, consistently get stronger and closer together. Change in position does not relieve contractions.
Pain is in the lower abdomen. Contractions start and stay in the lower abdomen.	Pains and contractions start in the lower back and “wrap around” to the lower abdomen.
Activity or changing position will alleviate the pain and contractions.	Activity may intensify the contractions. Pain and contractions are consistent in any position.
If there is any bloody show, it is brownish.	The bloody show will be pink or red and generally accompanied by mucus.
There may be some leakage of fluid, but it is usually urine and will be in small amounts and smell of ammonia.	The amniotic sac may have broken just before the contractions started or during contractions. A moderate amount of fluid will be present and may smell sweet, and fluid will continue to leak.

- Some women experience a premature rupture of the amniotic sac. The fetus is not ready to be born.
 - Provide supportive care and transport.

Stay or Go?

- ‘Transport, unless delivery is imminent’?
- How do you know whether or not delivery can wait for transport to hospital?
- Sometimes it is obvious...
- <https://www.youtube.com/watch?v=0c524HWLfjM>

Clues for Imminent Delivery

- (Mucus Plug, Bloody Show, Water may/may not have broken)
- Visual inspection for Crowning (prolapse cord)
- She feels the need to push
- “The baby is coming!”
 - Multigravida – or history of precipitous delivery
- Feels as if she is having a bowel movement with increasing pressure in the vaginal area – “I have to go to the bathroom”
 - Precaution: Do not let the mother sit on the toilet
- Contractions 2 or less min apart (length & duration)

Length and Duration of Contractions

	1 st Stage	2 nd Stage
Duration of Stage (primigravida)	10-14 hrs	50-60 min
Duration of Stage (multipara)	6-8hr or less	20-30 min or less
Length between contractions (early)	10-20 min	2-3 min
Length between contractions (late)	3-5 min	
Duration of contraction (early)	20 sec	50-100 sec
Duration of contraction (late)	40-80 sec	
Uterine Quality (early)	Uterus can be dented (poor quality)	
Uterine Quality (late)	Uterus is hard (good quality)	
Fetal Heart Rate	120-160 BPM	Want >100 BPM

Is this 'crowning'?



Is the head going back in after each contraction called 'Crowning?'

- The perineum will bulge significantly, and the top of the infant's head will appear at the vaginal opening (and may go back in after each contraction.)
- The head is said to be 'crowned' when it distends the vaginal opening, without retracting inside the vagina after the episode of pain is over.

'Crowning' – conflicting definitions

- “the appearance of the fetal scalp at the vaginal orifice in childbirth.”

Miller-Keane Encyclopedia and Dictionary of Medicine, Nursing, and Allied Health, Seventh Edition. © 2003 by Saunders, an imprint of Elsevier, Inc. All rights reserved.

- **crow-n-ing**(krown'ing), *Avoid the jargonistic use of this word to refer to mere visibility of the fetal head during a uterine contraction*

“That stage of childbirth when the fetal head has negotiated the pelvic outlet and the largest diameter of the head is encircled by the vulvar ring.

Farlex Partner Medical Dictionary © Farlex 2012

- **Crowning** Etymology: L, *corona*

“(in obstetrics) the phase at the end of labor in which the fetal head is seen at the introitus of the vagina.

The labia are stretched in a crown around the head just before birth.”

Mosby's Medical Dictionary, 8th edition. © 2009, Elsevier.

1st Baby

- ‘Transport, unless delivery is imminent’?
- How do you know whether or not delivery can wait for transport to hospital?
- Look for crowning (*this is where the definition is important)
- 2nd stage in primigravida (1st baby) may last 50-60 min, but we don’t know when or even if 2nd stage has started for sure until we see head (not necessarily crowning, although the term is used)
 - Clip from EMSAT: ‘Midwives and OB’
1st Baby (pace of delivery is slower vs. multipara)

EMSAT

- Clip from EMSAT: Midwives and OB 1st Baby (pace of delivery is slower vs. multipara)
- EMSAT video recordings are available for FREE CE to Virginia EMS Providers on CentreLearn.
- More information available at:
- <https://www.vdh.virginia.gov/OEMS/Training/EMSAT/>

Preparing for Delivery



Preparing for Delivery (2 of 5)

- Get OB Kit ready
- Once labor has begun, there is no way it can be slowed or stopped.
 - Never attempt to hold the patient's legs together.
 - Do not let her go to the bathroom.
- Remember, if you deliver at the scene, you are only assisting the woman with the delivery.

Preparing for Delivery (3 of 5)

- Patient position
 - Preserve the patient's modesty.
 - Place the patient on a firm surface that is padded with blankets, sheets, and towels.
 - Elevate the hips about 2" to 4".
 - Support the head, neck, and upper back.
 - Plan with your crew where you will place the newborn after delivery.

Preparing for Delivery (4 of 5)

- Preparing the delivery field
 - Place towels or sheets on the floor around the delivery area.
 - Open the OB kit carefully.
 - Put on sterile gloves.
 - Use the sterile sheets and towels from the OB kit to make a sterile delivery field.

Preparing for Delivery (5 of 5)

- Your partner should be at the patient's head to comfort, soothe, and reassure.
- If she will allow it, apply oxygen.
- Continually assess for crowning.
 - Do not allow an abrupt or explosive delivery to occur.
 - Position yourself so that you can see the perineum at all times.

Delivering the Infant (1 of 4)

- Delivering the head
 - Methods of reducing the risk of perineal tearing during labor include:
 - Applying gentle pressure across the perineum with a sterile gauze pad
 - Applying gentle pressure to the head while gently stretching the perineum
 - **What is an explosive delivery?**
<https://www.youtube.com/watch?v=PFWy7VI2GZY>

AHA 2015 ECC GUIDELINES: SUCTIONING WHEN AF IS CLEAR

- When Amniotic Fluid is Clear
 - This topic was last reviewed in 2010.³ Suctioning immediately after birth, whether with a bulb syringe or suction catheter, may be considered only if the airway appears obstructed or if PPV is required.
 - ***Therefore it is recommended that suctioning immediately following birth (including suctioning with a bulb syringe) should be reserved for babies who have obvious obstruction to spontaneous breathing or who require positive-pressure ventilation (PPV).*** (*Class IIb, LOE C*) LAST UPDATED: OCT 2010
 - Avoiding unnecessary suctioning helps prevent the risk of induced bradycardia due to suctioning of the nasopharynx.^{102,103} Deterioration of pulmonary compliance, oxygenation, and cerebral blood flow velocity shown to accompany tracheal suction in intubated infants in the neonatal intensive care unit also suggests the need for caution in the use of suction immediately after birth.¹⁰⁴⁻¹⁰⁶ This recommendation remains unchanged. Please refer to the 2010 CoSTR for the latest science review.^{7,8}

Delivering the Infant (2 of 4)



1. Support the bony parts of the head with your hands as it emerges. Suction fluid from the mouth, then nostrils, per your protocol.
Check for cord around neck.



2. As the upper shoulder appears, guide the head down slightly, if needed, to deliver the shoulder.

Delivering the Infant (3 of 4)



3. Support the head and upper body as the lower shoulder delivers, guiding the head up if needed.



4. Handle the infant firmly but gently, keeping the neck in neutral position to maintain the airway. Keep the infant approximately at the level of the vagina until the umbilical cord has been cut.

Delivering the Infant (4 of 4)



5. Place the umbilical cord clamps 2" to 4" apart, and cut between them.



6. Allow the placenta to deliver itself. Do not pull on the cord to speed delivery.

Amniotic Sac Did NOT Rupture

(Head is Delivering)

- While delivering the head
 - If the amniotic sac does not rupture at the beginning of labor, it will appear as a fluid-filled sac emerging from the vagina.
 - It will suffocate the infant if not removed.
 - You may puncture the sac with a clamp.
 - Clear the infant's mouth and nose immediately.

If cord was still pulsing and delivering oxygen, could you wait until body delivered to puncture the sac? Would infant suffocate if you waited?

Amniotic Sac Did NOT Rupture (Born in Caul)

- <https://www.youtube.com/watch?v=yHpR-u8nGw8>
(Amniotic Sac – Vertex)
- <https://www.youtube.com/watch?v=kiVsYuMURz4>
(Amniotic Sac – Breech)
- <https://www.youtube.com/watch?v=GnW7tNpyBRo>
(Bag on Face)

Theoretically Speaking...

- If the umbilical cord still has a pulse immediately after delivery and the baby was underwater for say a minute...
 - Would baby still be getting sufficiently oxygenated or would he/she be in distress?
 - <https://www.youtube.com/watch?v=6En0RPiru-Q>

Theoretically Speaking...

- How does baby go from breathing amniotic fluid to breathing air?

FETAL

Foramen ovale

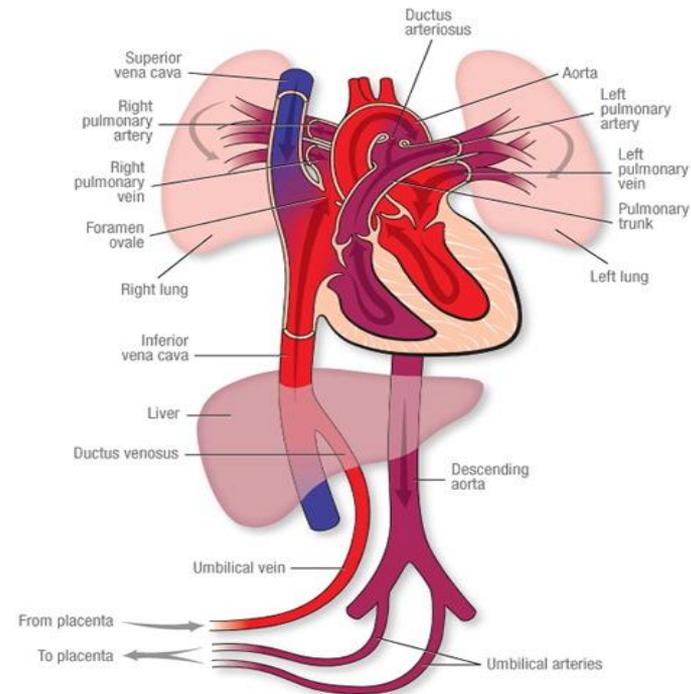
Ductus arteriosus

Extra-hepatic portion of fetal left umbilical vein

Intra-hepatic portion of the fetal left umbilical vein (ductus venosus)

Proximal portions of the fetal left and right umbilical arteries

Distal portions of the fetal left and right umbilical arteries



Transition to Breathing Air

- How does the newborn transition from 'breathing' amniotic fluid to breathing air?

— <https://www.youtube.com/watch?v=cSESFH53hsA>

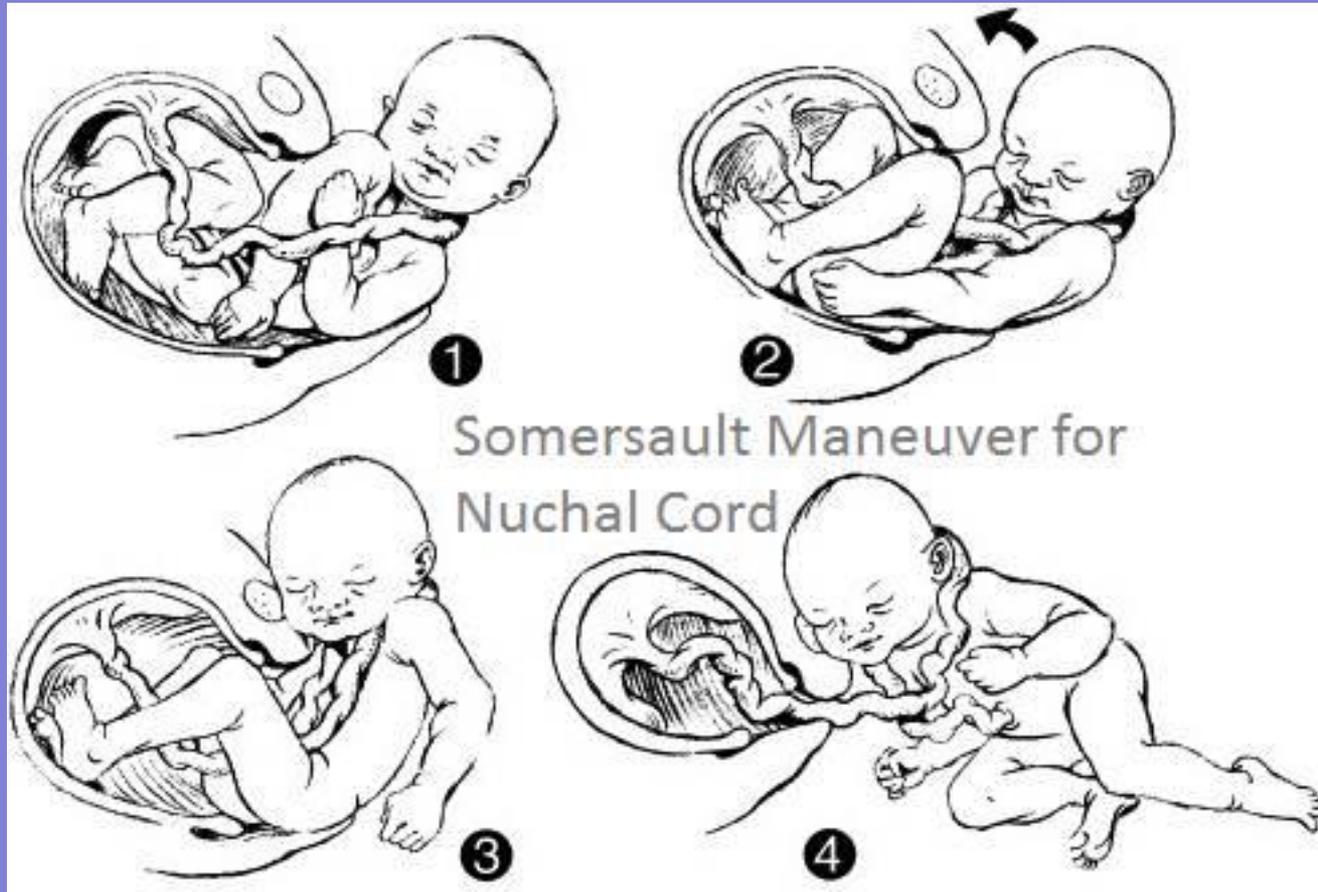
Nuchal Cord

- **By far THE MOST FREQUENT COMPLICATION**
14-34% by some estimates – so as high as (1 out of 3)!
 - *[As soon as the head is delivered, use one finger to feel whether the umbilical cord is wrapped around the neck (nuchal cord).*
 - *Usually, you can slip the cord gently over the infant's head.*
 - *If not, you must cut it.]*
 - Do you automatically cut every cord wrapped around the neck if you cannot initially reduce it?*
 - **(Follow your Protocol or Medical Command) –**

Nuchal Cord (con't)

- The main goal in managing a nuchal cord is **to prevent umbilical cord compression.**
- Preserving an intact Nuchal Cord **will depend on how tightly it is wrapped** around the baby's neck.
- A loose nuchal cord can usually be easily **slipped over the baby's head** to decrease traction during delivery of the shoulders or body. If this is not possible because it is wrapped too tightly, there is a technique wherein the physician may be able to **slip the cord over the infant's shoulders.**
- If this is also not possible, the physician may use **the somersault technique**, which allows the shoulders and body to be born in a somersault, with the cord being unwrapped after the baby is delivered.
- Sometimes, if there is more than one loop or the loop is too tight and cannot be removed easily, **the cord must be clamped and cut** before the delivery of the shoulders to **ensure adequate oxygen supply to the baby.**
 - (Follow your Protocol or Medical Command) –

Nuchal Cord (Somersault Maneuver)



– (Follow your Protocol or Medical Command) –

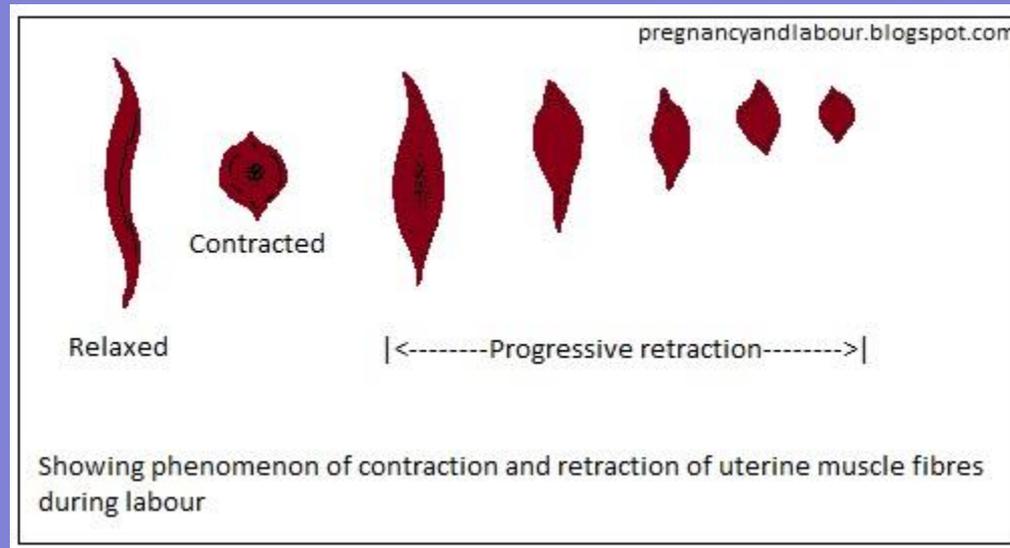
https://www.youtube.com/watch?v=n_xnX-pExPY

When to Push? (side note)

- Do EMS providers need to be able to tell mom when/when not to push?
- What Mom is being told by Lamaze.
(Peer-reviewed journal - J Perinat Educ. 2007 Summer; 16(3): 35-38 – Lamaze International)
 - Upright and gravity-neutral positions are safe during pushing and are often more comfortable than lying on your back.
 - Following your own urge to push is less stressful for your baby than directed pushing.
 - Pushing when and how your natural urge tells you to gives you the best chance of preventing tears and muscle weakness in your pelvis after the birth.
- *When the time is right for pushing, the best approach based on current evidence is to encourage the woman to do whatever comes naturally.* J Perinat Educ. 2006 Fall; 15(4): 6–9.

When NOT to Push? (side note)

- **IF you ask mom not to push**
 - PROLAPSE CORD, BREECH OR LIMB PRESENTATION
- **Do contractions stop?**
- What is the only muscle that can PERMANENTLY shorten after a contraction? –PROGRESSIVE RETRACTION



- <https://www.youtube.com/watch?v=4Ui3b2TQ7cY> ; <https://www.youtube.com/watch?v=AGUkewdqa8M>
; <https://www.youtube.com/watch?v=L1Zqn2dPvhk> ; https://www.youtube.com/watch?v=i00Z22ZNe_8

More Nuchal Cord Videos

- <https://www.youtube.com/watch?v=4Ui3b2TQ7cY>
- <https://www.youtube.com/watch?v=AGUkewdqa8M>
- <https://www.youtube.com/watch?v=L1Zqn2dPvhk>
- https://www.youtube.com/watch?v=i00Z22ZNe_8

– (Follow your Protocol or Medical Command) –

The Apgar Score

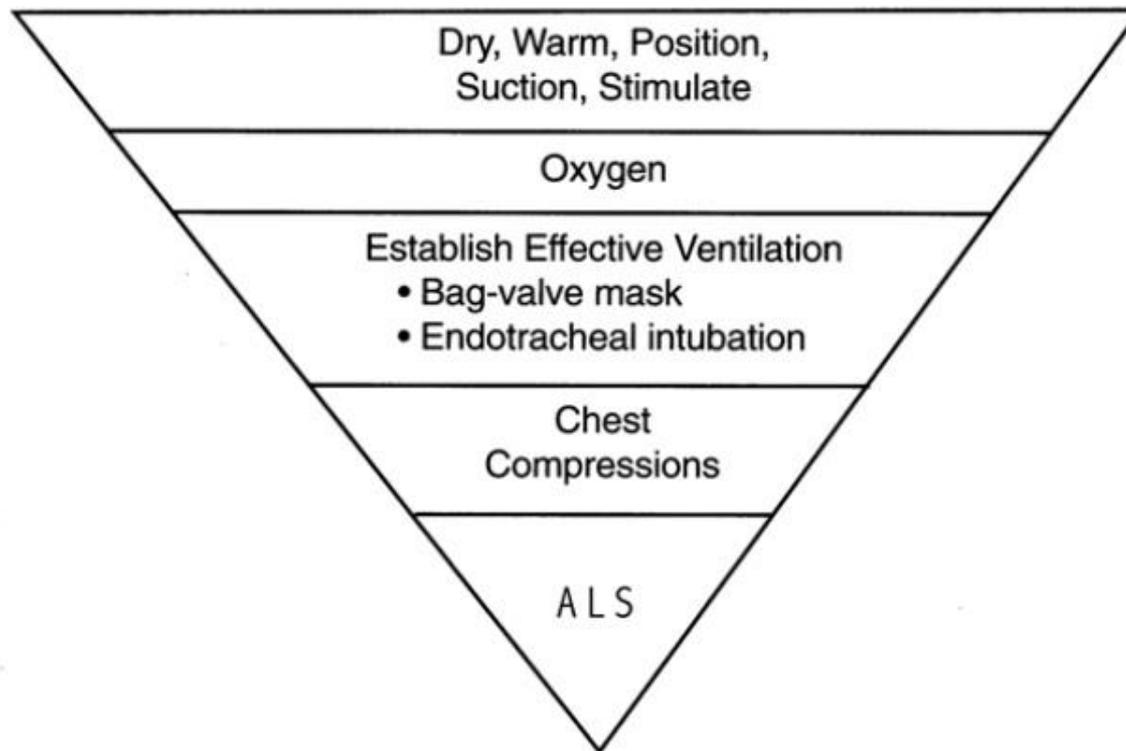
- Standard scoring system used to assess the status of a newborn and relay status and trends to other healthcare workers

Table 31-4 Apgar Scoring System

Area of Activity	Score		
	2	1	0
Appearance	Entire infant is pink.	Body is pink, but hands and feet remain blue.	Entire infant is blue or pale.
Pulse	More than 100 beats/min	Fewer than 100 beats/min	Absent pulse
Grimace or irritability	Infant cries and tries to move foot away from finger snapped against sole of foot.	Infant gives a weak cry in response to stimulus.	Infant does not cry or react to stimulus.
Activity or muscle tone	Infant resists attempts to straighten hips and knees.	Infant makes weak attempts to resist straightening.	Infant is completely limp, with no muscle tone.
Respiration	Rapid respirations	Slow respirations	Absent respirations

Newborn Resuscitation

Inverted Pyramid of Newborn Resuscitation



Meconium Staining



Meconium Aspiration

- Remember AHA 2015 ECC Guidelines for Newborn Resuscitation ... **Routine intubation for tracheal suction in this setting is not suggested, because there is insufficient evidence to continue recommending this practice.** **Class IIb, LOE C-LD)** NEW: OCT 2015

– <https://www.youtube.com/watch?v=bSg48AQTRsA>

Recap: Meconium Stained Amniotic Fluid (MSAF)

- **Vigorous, Good Respiratory Effort & Muscle Tone**
 - Gentle clearing of meconium from the mouth and nose with a bulb syringe may be done if necessary.

-or-

- **Poor Muscle Tone & Inadequate Breathing Efforts**
 - Initial steps of resuscitation (up to and including Bag Valve Mask if heart rate less than 100/min)
 - Initiate ventilation within 1st minute of life in nonbreathing or ineffectively breathing infants.

Clip from EMSAT: 'Midwives and OB' 1st Baby, Meconium Staining, Birthing Stool

EMSAT

Clip from EMSAT: Midwives and OB
1st Baby, Meconium Staining, Birthing Stool

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Newborn Resuscitation

- Textbook: Observe the newborn for spontaneous respirations, (skin color), and movement of the extremities.
- Per AHA Guidelines: The order of the 3 assessment questions has changed to **(1) Term gestation? (2) Good tone? and (3) Breathing or crying?**
- Evaluate the heart rate at the base of the umbilical cord or the brachial artery. (or apical)
 - The heart rate is the most important measure in determining the need for further resuscitation.

Newborn Resuscitation

- **The Golden Minute (60-second)** mark for completing the initial steps, reevaluating, and **beginning ventilation (if required)** is retained to emphasize the importance of avoiding unnecessary delay in initiation of ventilation, **the most important step for successful resuscitation of the newly born who has not responded to the initial steps.**
- In situations in which assisted ventilation is required (HR <100 bpm) use a newborn bag-mask device (room-air).
- Look for gentle chest rise – HR usually responds to effective ventilations (does not take a lot of volume)

Newborn Resuscitation (2 of 5)

Table 31-3 Additional Neonatal Resuscitation Efforts

If the Heart Rate Is...	More Than 100 Beats/Min	60 to 100 Beats/Min	Fewer Than 60 Beats/Min
Do this:	Keep the newborn warm. Transport the newborn. Assess the newborn continuously.	Begin assisted ventilation with a bag-mask device and 100% oxygen. Reassess the newborn every 30 seconds until heart rate and respirations are normal. Continue to reassess the infant. Call for ALS backup. Keep the newborn warm.	Begin assisted ventilation with a bag-mask device and 100% oxygen. Reassess the newborn every 30 seconds until heart rate and respirations are normal. Begin chest compressions. Call for ALS backup. If the heart rate does not increase, medication and ALS will be needed.

Newborn Resuscitation

- <https://www.youtube.com/watch?v=wkwan8YAl4s>

AHA 2015 ECC GUIDELINES: Neonatal Resuscitation

- Umbilical Cord Management.
 - Until recent years, a common practice has been to clamp the umbilical cord soon after birth to quickly transfer the infant to the neonatal team for stabilization..
 - During the 2010 CoSTR review, evidence began to emerge suggesting that **delayed cord clamping (DCC) might be beneficial for infants who did not need immediate resuscitation at birth.**⁷
 - ***In summary, from the evidence reviewed in the 2010 CoSTR⁷ and subsequent review of DCC and cord milking in preterm newborns in the 2015 ILCOR systematic review,^{1,2} DCC for longer than 30 seconds is reasonable for both term and preterm infants who do not require resuscitation at birth.***
 - systematic review confirms that DCC is associated with less intraventricular hemorrhage (IVH) of any grade, higher blood pressure and blood volume, less need for transfusion after birth, and less necrotizing enterocolitis.

Third Stage

- Begins with the birth of the infant and ends with the delivery of the placenta
 - The placenta must completely separate from the uterine wall. Do Not Pull on Cord.
 - Always follow standard precautions to protect yourself, the infant, and the mother from exposure to body fluids.
 - Take placenta to hospital
 - More than 500ml blood loss would be cause for concern – (fundal massage –by protocol)
 - Remember you now have 2 patients!

Time for: HANDS ON

- Time to Deliver baby – **HELPER** {3 GROUPS – 15 min per}
- Pre-delivery: POSITIVE Meconium Staining, Multipara (3rd)
- **Deliver Head-** gauze on perineum to prevent tear, slight pressure on head to prevent explosive delivery (VERBALIZE YOUR STEPS)
- After head delivers, suction by protocol as head rotates)
{helper start face down, please rotate head to side within 30 sec}
- Gentle traction to help deliver Anterior then Posterior shoulder
- Check for Nuchal Cord (none)
- ****Dry, **Warm, **Stimulate – DO IT AGAIN**
(may need to suction again due to meconium stain)(BLOW-BY 02)
- POOR TONE and NOT CRYING (pulse 95/bpm),put hat on(pretend)
- Bag valve mask (within 1 min) – ventilate 40-60 per min for 30 sec
- Recheck – pulse above 100 – good job!
- ***2 min per delivery–move out and helper now delivers, new helper in**
- On your own – Practice Calculate APGAR by memory using one or more of babies in video you can remember. Need for your radio report to hospital

VIDEO DURING HANDS ON

- Shoulder Dystocia
starts with Dr. Aaron Goldberg, VCU
 - TV Show – VERY DRAMATIC
- Breech Delivery
- Prolapse Cord discussion

MORE DELIVERIES TO SEE!

**THANK YOU FOR ALL YOUR EFFORTS
FOR YOUR COMMUNITY!**

EMSAT and Playlist

- More EMSAT information available at:
- <https://www.vdh.virginia.gov/OEMS/Training/EMSAT/>

Other EMSAT videos:

-'OB Complications', Dr. Aaron Goldberg (Shoulder Dystocia, Breech, Prolapse Cord, etc

-'Neonatal Resuscitation'

- Other Live Birth Footage Videos available in playlist

- ***Normal OB Deliveries and OB Births w/ Complications***

www.youtube.com/playlist?list=PLlw78cqAxY9NMrWc2MHHQqlt_vfs7OpdV

The playlist is intended for general exposure to OB delivery and OB birthing complications. [*NOT intended for formal training*]



