Obstetric Crisis Checklists

Mass General Brigham
Newton-Wellesley Hospital

DO NOT REMOVE BOOK FROM THIS ROOM

REFERENCES FOUND AT BACK OF BOOK

Revised APRIL 2025

Based on the **Operating Room Crisis Checklists** developed by Ariadne Labs in collaboration with the Harvard School of Public Health and Brigham and Women's Hospital.
www.ariadnelabs.org/areas-of-work/surgery-or-crisis-checklists/

SUSPECTED EVENT:

1 Altered Mental Status/Stroke

An unexpected change in mental function

START:

① Call for help (x4560 – Rapid Response – Group 51 – Possible Stroke)
- ❑ **Declare:** *"This patient is experiencing altered mental status"*
- ❑ **Ask:** *"Who will be the Crisis Manager?"*
- ❑ **Crisis Manager designates Checklist Reader**

② Obtain vital signs, FHR, fingerstick glucose
- ❑ BP, RR, temp, HR, SpO_2

③ Assess ABCs (airway, breathing, circulation)
- ❑ 10L oxygen via nonrebreather
- ❑ Ensure IV access, give IV fluids as needed
- ❑ Consider anesthesia consult

④ Order STAT LAB WORK

⑤ Perform STROKE ASSESSMENT
- ❑ If **stroke suspected**, continue to Step ⑥
- ❑ If **stroke not suspected** → **DIFFERENTIAL DIAGNOSIS**

⑥ Activate Stroke Protocol by calling hospital operator and requesting *"Acute Stroke Protocol"*

⑦ Order noncontrast head CT and computed tomographic angiography (CTA)
- ❑ Prepare patient for transport to radiology
- ❑ RN accompanies patient

⑧ Call TeleStroke Answering Service: (855)-492-4322
- ❑ If patient is possible thrombolytic candidate, call will transition to video via NWH virtual care cart

LAB WORK

- CBC
- CMP
- Magnesium
- Lactate
- DIC screen
- TSH
- Urine tox screen

MEDICATIONS

BASED ON DIFFERENTIAL DIAGNOSIS:

Naloxone (Narcan): 2mg IV push over 30 seconds (for opioid overdose)
Flumazenil (Romazicon): 0.2mg IV push over 15-30 seconds (for benzo overdose)
50% Dextrose: 25gm IV push over 5-10 minutes (for hypoglycemia)
Calcium Gluconate: 1gm IV push over 5 minutes (for magnesium toxicity)

ADDITIONAL CONSIDERATIONS

STROKE ASSESSMENT ("FAST"):
- **Face:** Asymmetry or droop (show teeth/smile), pupils (small/large or asymmetric)
- **Arms:** Equal strength while holding arms out, sensation
- **Speech:** Clear vs. slurred, orientation to name/place/date
- **Time:** Act quickly

DIFFERENTIAL DIAGNOSIS:
- **Pre-eclampsia related (give Magnesium Sulfate):**
  - ➢ Eclampsia/ post-ictal
  - ➢ Posterior reversible encephalopathy syndrome (PRES)
  - ➢ Reversible cerebral vasoconstriction syndrome (RCVS)
- Cerebral venous thrombosis
- **Non-Stroke:** Toxins (pesticides, anesthesia), medications, hyponatremia, infection, trauma, tumor, DKA

RELATED CHECKLISTS

- ▶ **DIABETIC KETOACIDOSIS** → CHECKLIST 7
- ▶ **ECLAMPSIA** → CHECKLIST 8
- ▶ **LOCAL ANESTHETIC TOXICITY** → CHECKLIST 10
- ▶ **MAGNESIUM TOXICITY** → CHECKLIST 11
- ▶ **SEPSIS** → CHECKLIST 14
- ▶ **SEVERE HYPERTENSION** → CHECKLIST 15

② Anaphylaxis

Life-threatening allergic reaction

START:

① Call for help (x4560 – Rapid Response – Group 51) and obtain code cart and anaphylaxis kit
- ❑ **Declare:** *"This patient is experiencing anaphylaxis"*
- ❑ **Ask:** *"Who will be the Crisis Manager?"*
- ❑ **Crisis Manager designates Checklist Reader**

② Remove potential causative agents (replace IV tubing)

③ Give EpiPen (Epinephrine) Auto-Injector and give second dose 5 minutes later if minimal response

④ If pregnant: Left lateral positioning

⑤ Ensure IV access and give IV fluid bolus

⑥ 10L oxygen via nonrebreather

⑦ Assess airway, secure if needed

⑧ If continued hypotension despite repeated doses of Epinephrine, give Vasopressin

⑨ Consider Epinephrine infusion (administered by anesthesia)

⑩ If bronchospasm, consider Albuterol Nebulizer and Methylprednisolone Succinate

⑪ If pruritus/hives, consider Diphenhydramine and Famotidine

⑫ Send Tryptase Level:
- ❑ Within 1 hour
- ❑ Repeat at 4 hours (even if initial result still pending)
- ❑ Repeat at 18-24 hours (even if all results still pending)

MEDICATIONS

FIRST LINE: EpiPen (Epinephrine) Auto-Injector (0.3mg):
- **DO NOT** place thumb on top of injector
- Inject into outer thigh by swinging injector and pushing firmly so a "click" is heard
- **Hold firmly in place for 3 seconds** then remove
- Massage injection site for 10 seconds

ANESTHESIA ONLY:

Epinephrine (Adrenalin) (1mg/mL): Dilute 1mL in 250mL = 4mcg/mL
or
Epinephrine Infusion: Epinephrine (0.1mg/mL pre-filled syringe): Dilute 1mL to 10mL = 10mcg/mL
- **Bolus:** 10-100mcg, repeat as necessary
- **Infusion:** 1-10mcg/minute

Albuterol Nebulizer: 2.5mg
***Methylprednisolone Succinate (Solu-Medrol):** 125mg IV push over 3-5 minutes
Vasopressin: 1-2 units IV bolus *or* 0.01-0.08mcg/min infusion
***Diphenhydramine (Benadryl):** 25-50mg IV push (25mg/minute)
***Famotidine:** 20mg IV push over 2 minutes

* = *in Anaphylaxis Kit*

COMMON CAUSATIVE AGENTS

- Neuromuscular blocking agents
- Antibiotics
- Blood products
- Latex
- IV contrast

RELATED CHECKLISTS

► **CARDIAC ARREST: PEA/ASYSTOLE →** CHECKLIST 4
► **CARDIAC ARREST: V-FIB/V-TACH →** CHECKLIST 5

3 Breech Delivery

Delivery of infant in breech position

START:

DIAGRAMS CAN BE FOUND ON FOLLOWING PAGE

① Call for help (x4560 – OB Emergency – Group 555)
- ❑ **Declare:** *"This is a breech delivery"*
- ❑ **Ask:** *"Who will be the Crisis Manager?"*
- ❑ Designate **Timekeeper**
- ❑ **Crisis Manager designates Checklist Reader**

② Move to OR if possible

③ Continuous EFM

④ Leave membranes unruptured

⑤ Encourage patient to bear down until feet, legs and buttocks have been delivered
- ❑ If lower limbs extended when trunk is delivered, attempt Pinard Maneuver (provider uses their fingers to exert pressure on the back of the knee and guide the thigh away from the trunk

⑥ Encourage patient to push again to deliver arms

⑦ Delivery of head should occur spontaneously
- ❑ If hairline not visible, turn fetus' body to face the floor, have helper apply suprapubic pressure to flex neck/head and push it down into pelvis
- ❑ Once head delivered, bring fetus' legs upwards, keeping vulva completely covered by provider's hand, which slowly releases to allow face and remainder of head to deliver
- ❑ Maintain support of fetal legs and trunk so they are **never** be more than 45 degrees above horizontal

⑧ If the head is entrapped, administer a Uterine Relaxant and consider:
- ❑ Dührssen Incisions (one or two fingers are placed between the cervix and presenting part to protect fetus and allow provider to palpate cervicovaginal junction, bandage scissors are used to make 1-3 incisions extending full length of the remaining undilated cervix at 6, then 2, then 10 o'clock **(avoid 3 and 9 o'clock positions)**
- ❑ Symphysiotomy **as last resort**

MEDICATIONS

UTERINE RELAXANTS:

Nitroglycerin (100mcg/mL): 100-200mcg IV every minute
- 5 North Omnicell and L&D ORs

Terbutaline: 0.25mg SC

ADDITIONAL CONSIDERATIONS

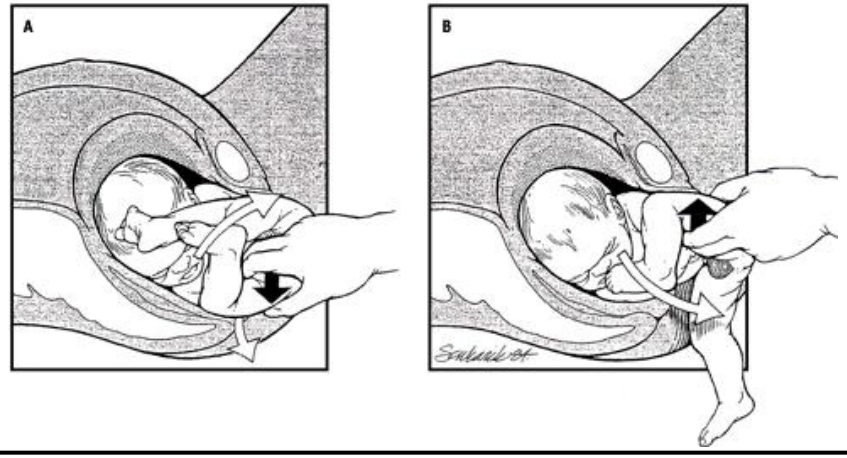
- **AVOID** traction on baby prior to delivery of the body to delivery of the umbilicus
- Dührssen incisions and symphysiotomy **pose significant risk to fetus and birthing person** and should only be attempted as last resort by experienced providers

3 Breech Delivery – DIAGRAMS

Images and descriptions from UpToDate (Delivery of the singleton fetus in breech presentation)

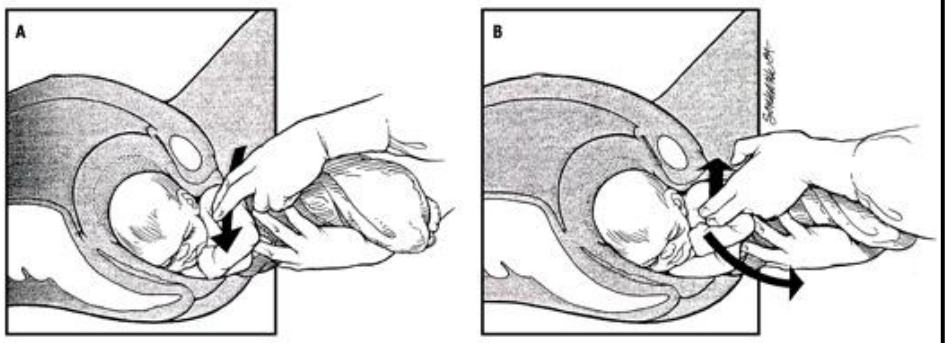
❶ Delivery of the Lower Limbs

After spontaneous expulsion to the level of the umbilicus, external rotation of each thigh (A) combined with opposite rotation of the fetal pelvis results in flexion of the knee and delivery of each leg (B).



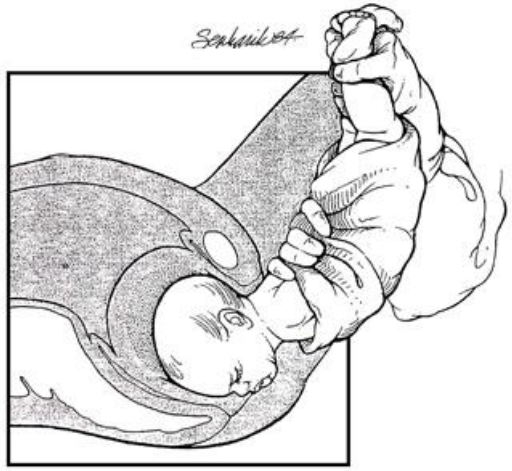
❷ Delivery of Upper Limbs

A towel is wrapped around the fetus for better traction. When the scapula appears under the symphysis, the provider reaches over the left shoulder, sweeps the arm across the chest (A), and delivers the arm (B).



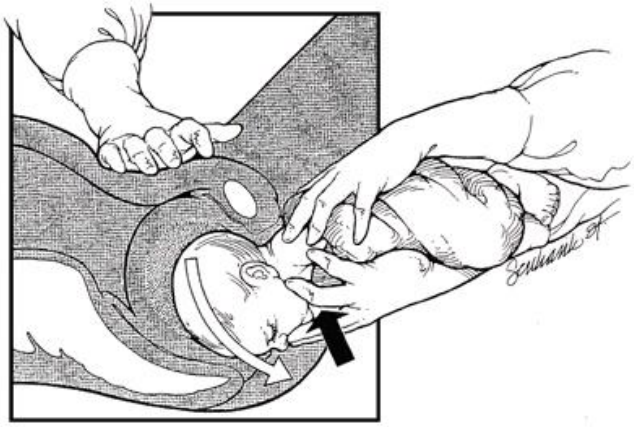
❸ Beginning Delivery of the Head

Following delivery of the arms, the fetus is slightly elevated. The fetal face and airway may be visible over the perineum. Excessive elevation of the trunk is avoided.



❹ Delivery of the Head

Often, delivery of the head is easily accomplished with continued expulsive forces from above, suprapubic pressure, and gentle traction. Cephalic flexion is maintained by pressure (black arrow) on the fetal maxilla **(not mandible!)**.



4 Cardiac Arrest: PEA/Asystole

Asystole: ——————— **PEA (no pulse):** 

Non-shockable pulseless cardiac arrest

START:

PERFORM PERIMORTEM C-SECTION IF NO ROSC WITHIN 4 MINUTES

① Call for help (x4000 – Code Blue and x4560 – OB Emergency – Group 555)
- ❑ **Declare:** *"This patient is in cardiac arrest"*
- ❑ **Ask:** *"Who will be the Crisis Manager?"*
- ❑ **Crisis Manager designates Checklist Reader and Code Recorder**
- ❑ **Code Recorder to call out elapsed time including 4-minute mark**

② Start CPR
- ❑ Backboard under patient
- ❑ If pregnant: Left uterine displacement
- ❑ If pannus retractor in place: Release straps
- ❑ Hand placement on lower half of sternum
- ❑ 100-120 compressions/minute, depth of 2 inches
- ❑ Turn FiO_2 to 100%, pause for 2 breaths via bag-valve mask every 30 compressions
- ❑ Remove fetal monitors
- ❑ Change compressor at least every 2 minutes

③ Obtain:
- ❑ Code Cart
- ❑ Open Perimortem C-section kit

④ Apply defibrillator pads
- ❑ Turn on defibrillator and follow instructions

⑤ Ensure IV access above diaphragm, consider IO

⑥ Give Epinephrine as soon as possible

⑦ Consider advanced airway and capnography
- ❑ Once airway in place, provide 1 breath every 6 seconds with continuous chest compressions

⑧ Treat reversible causes

⑨ If rhythm becomes shockable (V-Fib/V-Tach): go to Cardiac Arrest: V-Fib/V-Tach (CHECKLIST 5)

⑩ Perform perimortem C-section if no return of spontaneous circulation within 4 minutes

MEDICATIONS AND DOSAGES

Epinephrine (1mg/10mL): 1mg IV/IO push every 3-5 minutes

POTENTIAL ETIOLOGY OF ARREST

- Anesthetic complications
- Bleeding
- Drugs **(discontinue Magnesium Sulfate)**
- Embolic (including AFE)
- Fever
- Hypertension
- Hydrogen ion (acidosis)
- Hyperkalemia
- Hypothermia
- Hypovolemia
- Hypoxia
- Tamponade (cardiac)
- Tension pneumothorax
- Thrombosis
- Toxin

RELATED CHECKLISTS

- ▶ **CARDIAC ARREST: V-FIB/V-TACH →** CHECKLIST 5
- ▶ **LOCAL ANESTHETIC TOXICITY →** CHECKLIST 10
- ▶ **MAGNESIUM TOXICITY →** CHECKLIST 11
- ▶ **POSTPARTUM HEMORRHAGE →** CHECKLIST 12
- ▶ **SEPSIS →** CHECKLIST 14

5 Cardiac Arrest: V-Fib/V-Tach

Shockable pulseless cardiac arrest

START:

PERFORM PERIMORTEM C-SECTION IF NO ROSC WITHIN 4 MINUTES

① Call for help (x4000 – Code Blue and x4560 – OB Emergency – Group 555)
- ❑ **Declare:** *"This patient is in cardiac arrest"*
- ❑ **Ask:** *"Who will be the Crisis Manager?"*
- ❑ **Crisis Manager designates Checklist Reader and Code Recorder**
- ❑ **Code Recorder to call out elapsed time including 4-minute mark**

② Start CPR
- ❑ Backboard under patient
- ❑ If pregnant: Left uterine displacement
- ❑ If pannus retractor in place: Release straps
- ❑ Hand placement on lower half of sternum
- ❑ 100-120 compressions/minute, depth of 2 inches
- ❑ Turn FiO_2 to 100%, pause for 2 breaths via bag-valve mask every 30 compressions
- ❑ Remove fetal monitors
- ❑ Change compressor at least every 2 minutes

③ Obtain:
- ❑ Code Cart
- ❑ Open Perimortem C-section kit

④ Apply defibrillator pads
- ❑ Turn on defibrillator and follow instructions
- ❑ Ensure patient is *"CLEAR!"* before delivering shock

⑤ Ensure IV access above diaphragm, consider IO

⑥ Give Epinephrine after 2 shocks delivered

⑦ Consider advanced airway and capnography
- ❑ Once airway in place, provide 1 breath every 6 seconds with continuous chest compressions

⑧ After 2 rounds of compressions (4 minutes), consider Antiarrhythmics

⑨ Perform perimortem C-section if no return of spontaneous circulation within 4 minutes

MEDICATIONS AND DOSAGES

Epinephrine (1mg/10mL): 1mg IV/IO push every 3-5 minutes

ANTIARRHYTHMICS:

Amiodarone:
- **Loading Dose: 300mg IV/IO push**
- 150mg IV/IO push every 3-5 minutes

Lidocaine:
- **Loading Dose: 1-1.5mg/kg IV/IO push**
- 0.5-0.75mg/kg every 5-10 minutes up to cumulative dose of 3mg/kg

FOR TORSADES DE POINTES:

Magnesium Sulfate: 1-2gm IV/IO push over 5 minutes

POTENTIAL ETIOLOGY OF ARREST

- Anesthetic complications
- Bleeding
- Drugs **(discontinue Magnesium Sulfate)**
- Embolic (including AFE)
- Fever
- Hypertension
- Hydrogen ion (acidosis)
- Hyperkalemia
- Hypothermia
- Hypovolemia
- Hypoxia
- Tamponade (cardiac)
- Tension pneumothorax
- Thrombosis
- Toxin

RELATED CHECKLISTS

- ▶ **CARDIAC ARREST: PEA/ASYSTOLE →** CHECKLIST 4
- ▶ **LOCAL ANESTHETIC TOXICITY →** CHECKLIST 10
- ▶ **MAGNESIUM TOXICITY →** CHECKLIST 11
- ▶ **POSTPARTUM HEMORRHAGE →** CHECKLIST 12
- ▶ **SEPSIS →** CHECKLIST 14

6 Cord Prolapse

A portion of the umbilical cord falls in front of, lies behind, or below the fetal presenting part

START:

① Call for help (x4560 – OB Emergency – Group 555)
- ❑ **Declare:** *"This patient is experiencing a cord prolapse"*
- ❑ **Ask:** *"Who will be the Crisis Manager?"*
- ❑ **Crisis Manager designates Checklist Reader**
- ❑ **State:** *"Open the OR"*

② Discontinue Oxytocin

③ Continuously manually elevate presenting part off the cord

④ Reposition patient using Trendelenburg or knee-chest position

⑤ Monitor FHR

⑥ 10L oxygen via nonrebreather

⑦ Consider Terbutaline if delivery is delayed

⑧ Transport to OR
- ❑ Recheck fetal heart rate
- ❑ Maintain manual elevation of presenting part until uterine incision

MEDICATIONS
Terbutaline: 0.25mg SC

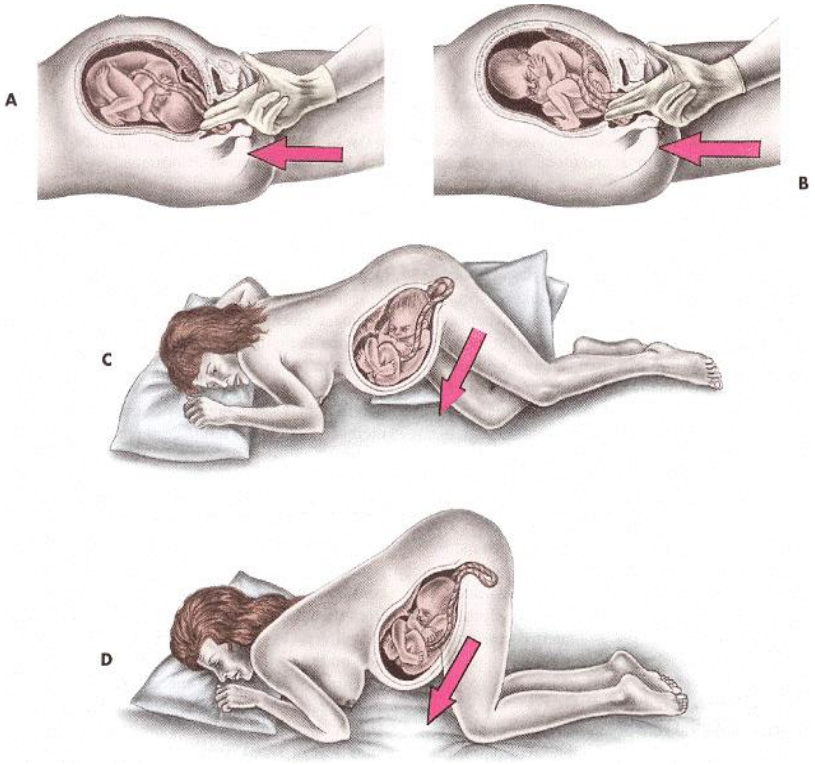


Image from N. Petrenko MD PhD

7 Diabetic Ketoacidosis (DKA)

Acute hyperglycemia with metabolic acidosis and ketosis, characterized by Kussmaul breathing, nausea, vomiting, abdominal pain, fatigue, polyuria, polydipsia

START:

① Call for help (x4560 – Rapid Response – Group 51)
- ❑ **Declare:** *"This patient is experiencing diabetic ketoacidosis"*
- ❑ **Ask:** *"Who will be the Crisis Manager?"*
- ❑ **Crisis Manager designates Checklist Reader**
- ❑ **If pregnant:** Consult MFM

② Ensure sufficient IV access (large bore IVs x2), order STAT LAB WORK
- ❑ **Expected findings with DKA:** Venous pH <7.3 and/or bicarbonate <18mmol/L, anion gap >12mmol/L

③ If patient unable to safely manage their insulin pump: Remove pump

④ If pregnant: Continuous fetal monitoring

⑤ Order STAT EKG and continuous cardiac monitoring; consider CXR

⑥ Give IV Fluid Resuscitation

⑦ Give IV Insulin Regular

⑦ Correct electrolytes
- ❑ Potassium (if <3.3mmol/L)
- ❑ **Phosphorus** (only when serum concentration is 1-2 mg/dL)
- ❑ If blood gas pH <7: Consider **Bicarbonate**

⑦ Determine and correct etiology

LAB WORK

- CBC and differential
- CMP
- Magnesium
- Phosphorus
- Beta-hydroxybutyrate
- Venous blood gas
- Serum ketones
- Serum osmolality
- Anion gap
- Urinalysis and urinary ketones
- Venous blood gas

Evaluation for Precipitants of DKA:
- Creatinine kinase/TpnL
- LFTs
- Basic serum and urine tox panels
- Blood culture
- Urine culture

MEDICATIONS

IV Insulin Regular
- **DO NOT GIVE INSULIN UNTIL SERUM POTASSIUM ≥ 3.3mmol/L**
- **Loading Dose for Blood Sugar > 400mg/dL (Optional):** 0.1 units/kg IV bolus
- **Infusion:** Start at 0.1 units/kg/hour
- **Monitor blood glucose hourly**

ELECTROLYTE REPLETION:

Potassium: Initiate to maintain potassium 4-5.3mmol/L
- **If K <3.3mmol/L:** LR + 20mEq KCl at 500mL/hour for 1L *and* potassium chloride (KCl Immediate Release) 40mEq PO/NG and recheck
- **If K <4.5mmol/L:** LR + 20mEq KCl at 250mL/hr for each L of IV fluid

IV FLUID RESUSCITATION

First 2 hours: LR 15-20mL/kg/hr
- **If corrected sodium is high:** 0.45% NaCl at 100-500mL/hr
- **If corrected sodium is normal or low:** LR at 100-500mL/hr

8 Eclampsia (Seizure)

New onset tonic-clonic seizure in an obstetric patient suffering from preeclampsia

START:

① Call for help (x4560 – OB Emergency – Group 555)
- ❑ **Declare:** *"This patient is experiencing an eclamptic seizure."*
- ❑ **Ask:** *"Who will be the Crisis Manager?"*
- ❑ **Crisis Manager designates Checklist Reader**
- ❑ **Obtain Code Cart**
- ❑ **If pregnant, state:** *"Open the OR"*

② Position patient on side
- ❑ Raise bed rails
- ❑ Remove potentially harmful objects from surroundings

③ 10L oxygen via nonrebreather

④ If possible, monitor BP, HR, SpO_2, FHR (prioritize vital signs)

⑤ Ensure sufficient IV access (large bore IVs x2), order STAT LAB WORK

⑥ If seizure persists longer than 2 minutes: Call x4560 – Rapid Response – Group 51

⑦ Give Magnesium Sulfate Bolus even if on maintenance dose

⑧ If seizure persists longer than 5 minutes: Give Midazolam *or* Lorazepam

⑨ If pregnant and FHR does not improve within 10 minutes despite interventions: Proceed with Cesarean section

⑩ Control hypertension: Go to Severe Hypertension (CHECKLIST 15)

LAB WORK

- Magnesium level (if already on magnesium)
- CBC
- CMP
- Type and screen
- PT/PTT
- INR
- Urinalysis

Consider:
- Drug screen
- Urine toxicology: Fentanyl, oxycodone

MEDICATIONS

Magnesium Sulfate:
- **Bolus:** 6gm IV over 20 minutes
- **Maintenance Dose:** 1-2gm/hour

ANTICONVULSANTS:

Midazolam (Versed) (5mg/mL): 2mg IV push over 2-3 minutes *or* 10mg IM
- 5 North and 5 South Omnicells

Lorazepam (Ativan): 4mg IV push
- Repeat in 5 minutes if needed

RELATED CHECKLISTS

- ▶ **ALTERED MENTAL STATUS/STROKE →** CHECKLIST 1
- ▶ **LOCAL ANESTHETIC TOXICITY →** CHECKLIST 10
- ▶ **SEVERE HYPERTENSION →** CHECKLIST 15

9 Impacted Fetal Head

A condition where the baby's head is very low and wedged in the maternal pelvis, requiring additional maneuvers and/or tocolysis to disimpact before a Cesarean section

START:

DIAGRAMS CAN BE FOUND ON FOLLOWING PAGE

① Call for help (x4560 – OB Emergency – Group 555)
- ❑ **Declare:** *"We have an impacted fetal head"*
- ❑ **Ask:** *"Who will be the Crisis Manager?"*
- ❑ **Crisis Manager designates Checklist Reader and timekeeper**
- ❑ **Alert all staff including SCN of at-risk C-Section:** Prolonged second stage, failed operative vaginal delivery, fetal malposition

③ When at risk for fetal impaction, at the start of the C-Section:
- ❑ Consider Fetal Pillow
- ❑ Consider positioning patient in yellow-fin stirrups or frog-legged in case a push from below is needed
- ❑ Prep the vagina with betadine

④ Identify who will assist from below
- ❑ Timekeeper records and states exact time of hysterotomy and each minute that passes

Once impaction confirmed:

⑤ Consider Uterine Relaxants

⑥ Incise Bandl's ring if present

⑦ Attempt reverse breech extraction ("Pull")
- ❑ Grasp fetal feet, **avoid hyperextension of fetal neck**

⑧ Attempt abdominovaginal delivery ("Push")
- ❑ Vaginal hand pushes up on fetal skull with 3-4 separated fingers to avoid focal pressure

⑨ If above techniques are unsuccessful: extend uterine incision ("T" or "J")

⑨ Patwardhan technique ("Shoulders First")
- ❑ Deliver anterior shoulder and arm
- ❑ Then posterior shoulder
- ❑ Then buttocks
- ❑ Then legs
- ❑ Then head

⑩ If above techniques are unsuccessful: extend uterine incision ("T" or "J")

MEDICATIONS

UTERINE RELAXANTS:

Nitroglycerin (100mcg/mL): 100-200mcg IV every minute
- 5 North Omnicell and L&D ORs

Terbutaline: 0.25mg SC

RELATED CHECKLISTS

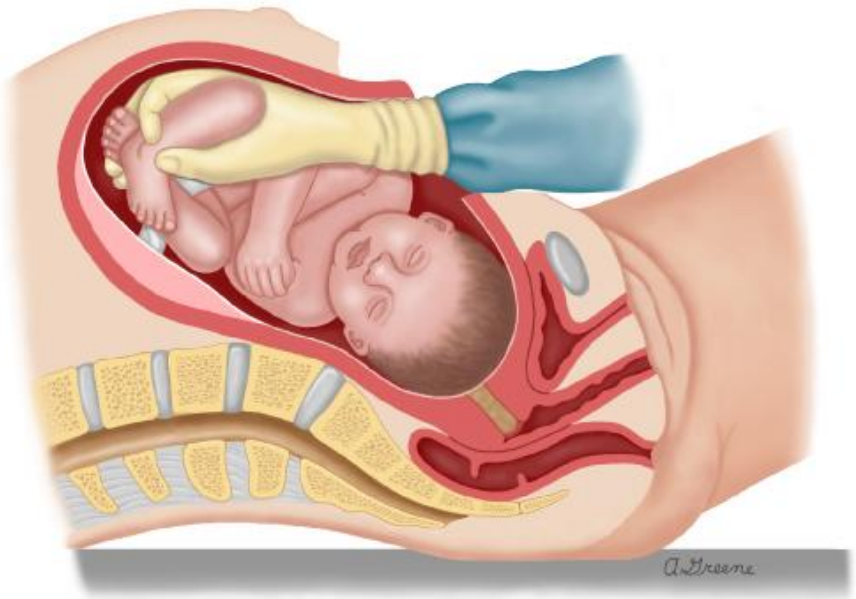
► **POSTPARTUM HEMORRHAGE →** CHECKLIST 12

9 Impacted Fetal Head – DIAGRAMS

Images and adapted descriptions from UpToDate (Cesarean birth: Management of the deeply impacted head and the floating head)

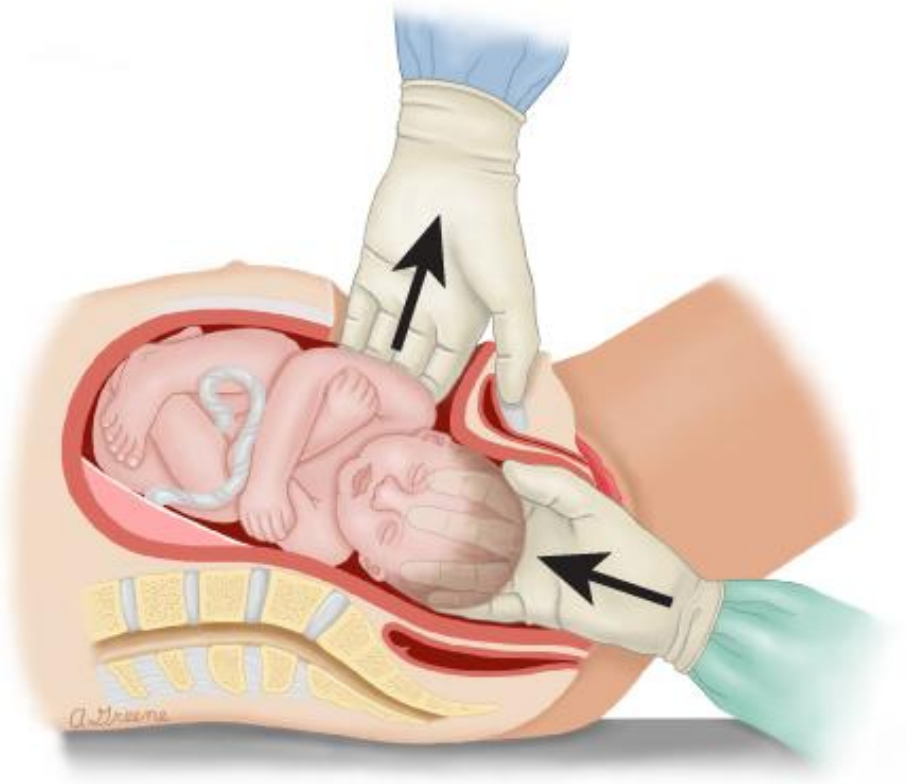
Reverse Breech Extraction ("Pull" Method)

A low vertical hysterotomy for planned reverse breech extraction is recommended to avoid the possible need to perform a "T" or "J" extension of a low transverse incision. The provider's hand is inserted into the uterus toward the fundus to grasp the feet, which are then pulled to perform a footling breech extraction. When grasping and pulling the feet, care must be taken to only apply traction parallel to the axis of the legs to avoid fracturing the tibia and/or fibula. Once the feet are through the hysterotomy incision, the delivery is accomplished as a typical breech extraction, with care taken to void hyperextension of the neck.



Abdominovaginal Delivery ("Push" Method)

An assistant places their gloved, cupped hand into the vagina to gently disengage and push the impacted fetal head up into the uterus for Cesarean delivery. Three or four fingers are separated and spread over a large area of the fetal skull to avoid exerting excessive focal pressure, which can be traumatic. The operating provider also assists from above by providing steady upward traction on the fetal shoulders and by attempting to flex the fetal head or at least prevent further deflexion.



⑩ Local Anesthetic Toxicity (LAST)

CHARACTERIZED BY: Agitation, confusion, dizziness, tinnitus, perioral numbness, unresponsiveness, seizure, cardiovascular collapse

An immediate response to epidural placement resulting in accidental systemic distribution of local anesthetics to toxic levels

START:

① Call for help (x4000 – Code Blue or x4560 – OB Emergency – Group 555)
- ❑ **Declare:** *"This patient is experiencing local anesthetic toxicity"*
- ❑ **Ask:** *"Who will be the Crisis Manager?"*
- ❑ **Crisis Manager designates Checklist Reader**
- ❑ **Obtain Code Cart**

② Discontinue anesthetic infusion

③ 10L oxygen via nonrebreather and maintain airway (prevent hypoxia/acidosis)

④ Stop seizure: Give Midazolam (avoid Propofol)

⑤ Assess for cardiovascular stability:
- ❑ **Unstable:** STEP ⑥
- ❑ **Stable:** STEP ⑦

⑥ Unstable:
- ❑ Lipid Emulsion Therapy (Lipid 20% Emulsion)
  - **Bolus:** 1.5mL/kg over 1 minute *and then*
  - **Infusion:** 0.25/mL/kg/min
- ❑ If instability continues, repeat Lipid Emulsion Bolus then double infusion rate to 0.5mL/kg/min
- ❑ If cardiac arrest, adjust ACLS medication protocols:
  - Reduce Epinephrine bolus to <1mcg/kg
  - **Avoid Vasopressin, calcium channel blockers, beta blockers, local anesthetics**
- ❑ Consider cardiopulmonary bypass
  - Contact MGH Cardiac Surgery (617-726-2000)
  - *"Cardiac surgeon on call"*

⑦ Stable:
- ❑ Continue infusion for additional 10 minutes
- ❑ Monitor patient:
  - If only neurological symptoms: 2 hours (BP q5 minutes x30 minutes, then q15 minutes for remainder)
  - If cardiovascular symptoms: 6 hours (BP q5 minutes x30 minutes, then q15 minutes for remainder)

MEDICATIONS

Midazolam (Versed): 2mg IV push (up to 10mg) over 2-3 minutes
- 5 North and 5 South Omnicells

Lipid 20% Emulsion (250mL):
- **Bolus:** 1.5mL/kg (approximately 100mL)
- **Infusion:** 0.25mL/kg/min (approximately 18mL/minute)

SYMPTOMS

Neurological
- Perioral paresthesia
- Tinnitus
- Diplopia
- Agitation
- Confusion
- Seizure

Cardiovascular
- Hypertension
- Hypotension
- Arrhythmia
- Bradycardia
- Conduction block

RELATED CHECKLISTS

► **CARDIAC ARREST: PEA/ASYSTOLE →** CHECKLIST 4
► **CARDIAC ARREST: V-FIB/V-TACH →** CHECKLIST 5

11 Magnesium Toxicity

Magnesium overdose in relation to magnesium sulfate administration, characterized by muscle weakness, blurred vision, slurred speech, decreased breath sounds, absent DTRs

START:

① **Call for help (x4560 – OB Emergency – Group 555)**
- ❑ **Declare:** *"This patient is experiencing magnesium toxicity"*
- ❑ **Ask:** *"Who will be the Crisis Manager?"*
- ❑ **Crisis Manager designates Checklist Reader**

② **Discontinue Magnesium Sulfate**

③ **Give Calcium Gluconate**

④ **Order STAT LAB WORK**

⑤ **Monitor EKG, BP, HR, SpO_2 and deep tendon reflexes**

⑥ **10L oxygen via nonrebreather**

⑦ **If pregnant: Left lateral positioning and continuous EFM**

⑧ **Consider transfer to ICU for continued monitoring**

LAB WORK

- Serum magnesium level
- CMP

MEDICATIONS

Calcium Gluconate: 1gm IV push over 5 minutes
- **If cardiac arrest or severe respiratory toxicity:** 1.5-3gm over 2-5 minutes

RELATED CHECKLISTS

- ► **ALTERED MENTAL STATUS/STROKE → CHECKLIST 1**
- ► **CARDIAC ARREST: PEA/ASYSTOLE → CHECKLIST 4**
- ► **CARDIAC ARREST: V-FIB/V-TACH → CHECKLIST 5**

⑫ Postpartum Hemorrhage

Cumulative blood loss greater than or equal to 1000mL, or blood loss accompanied by signs and symptoms of hypovolemia (vaginal delivery with QBL >500mL is also abnormal)

START:

① Call for help (x4560 – OB Emergency – Group 555)
- ❑ **Declare:** *"This patient is experiencing a postpartum hemorrhage"*
- ❑ **Ask:** *"Who will be the Crisis Manager?"*
- ❑ **Crisis Manager designates Checklist Reader**
- ❑ **Obtain Hemorrhage Cart and refrigerated PPH Medication Kit**
- ❑ **Every 5 minutes, announce current vital signs and QBL**

② Continuous fundal or bimanual massage

③ Monitor VS (RR, BP, HR, SpO_2)

④ Give IV fluid bolus, Oxytocin, and Additional Uterotonics

⑤ Ensure sufficient IV access (large bore IVs x2), order STAT LAB WORK

⑥ Indwelling urinary catheter with urimeter

⑦ Give Tranexamic Acid (TXA)

⑧ Oxygen via NRB to maintain oxygen saturation >95%

⑨ Alert team to open OR and consider move to OR

⑩ Assess need for blood products
- ❑ Contact Blood Bank (x6091) for *"OB Massive Transfusion Protocol"* if anticipating >4 units
- ❑ Consider rapid infuser device

⑪ If DIC suspected: Give Fibrinogen Concentrate (RiaSTAP)
- ❑ **Only found in 5 South Omnicell- remove all 5 vials**
- ❑ Call Pharmacy (x6012) if more needed

⑫ Maintain body temperature: Warm room, fluid warmer, Bair hugger

LAB WORK

- Type and screen
- CBC
- BMP
- DIC panel (fibrinogen <200 mg/dL indicates DIC)
- Ionized calcium

MEDICATIONS

Oxytocin (Pitocin) (30 units/500mL): IV infusion

ADDITIONAL UTEROTONICS:

Methylergonovine Maleate (Methergine): 0.2mg IM
- **DO NOT** administer IV
- May repeat every 2-4 hours
- **Caution** with hypertension

Carboprost Tromethamine (Hemabate): 250mcg IM
- **DO NOT** administer IV
- May repeat every 15 minutes x 8 doses
- Effective for lower segment uterine atony
- **AVOID** with asthma

Misoprostol (Cytotec): 600-800mcg SL or buccal *or* 800-1000mcg PR

For patients that received antibiotics with cumulative QBL ≥ 1500mL, facilitate discussion about potential antibiotic redosing plan

Tranexamic Acid (TXA): 1g IV over 10 minutes (compatible with Oxytocin and LR)
- May repeat once after 30 minutes

Fibrinogen Concentrate (RiaSTAP): 70mg/kg IV over 10 minutes
- Preparation instructions on back

ADDITIONAL CONSIDERATIONS

DETERMINE ETIOLOGY:
- **Tone** (atony)
- **Trauma** (laceration)
- **Tissue** (retained products)
- **Thrombin** (coagulation dysfunction)

POSSIBLE INTERVENTIONS:
- JADA or Bakri Balloon
- D&C
- Embolization (call IR x3751)
- Compression suture/B-lynch suture
- Uterine artery ligation
- Hysterectomy
- Consider arterial line and ABGs

13 Respiratory Distress

Hypoxemia, shortness of breath, and/or wheezing

START:

① Call for help (x4560 – Rapid Response – Group 51)
- ❑ **Declare:** *"This patient is experiencing [name of condition]"*
- ❑ **Ask:** *"Who will be the Crisis Manager?"*
- ❑ **Crisis Manager designates Checklist Reader**
- ❑ **Obtain Code Cart**

② 10L oxygen via nonrebreather

③ Assess:
- ❑ Vital signs every 5 minutes (RR, BP, HR, SpO_2)
- ❑ Physical exam (lung sounds)
- ❑ If pregnant: Fetal monitoring
- ❑ Obtain relevant **LAB WORK**
- ❑ 12-lead EKG
- ❑ Consider CXR and echocardiogram

④ Consider Albuterol Nebulizer

⑤ Indwelling urinary catheter with urimeter

⑥ If acute pulmonary edema: Give Furosemide

⑦ If opioid overdose: Give Naloxone

⑧ Consider need for ventilatory support, obtain:
- ❑ BVM, oral airway (head of bed in 5 North, in PACU, in code carts)
- ❑ Intubation medications (on top of 5 North Omnicell in black case)

LAB WORK

- Arterial/venous blood gas
- CBC and differential
- CMP
- Magnesium level
- Troponin
- BNP

MEDICATIONS

Albuterol Nebulizer: 2.5mg
Furosemide (Lasix): 20-40mg IV push over 1 minute
- If insufficient diuresis, give double original dose in 2 hours

Naloxone (Narcan): 2mg IV push (for opioid overdose)

DIFFERENTIAL DIAGNOSIS

- Amniotic fluid embolism
- Anaphylaxis (CHECKLIST 2)
- Aspiration
- Asthma exacerbation
- High spinal
- Magnesium toxicity (CHECKLIST 11)
- Opioid overdose
- Pneumonia
- Pneumothorax
- Pulmonary edema
- Pulmonary embolism
- Sepsis (CHECKLIST 14)

RELATED CHECKLISTS

- ▶ **ANAPHYLAXIS →** CHECKLIST 2
- ▶ **CARDIAC ARREST: PEA/ASYSTOLE →** CHECKLIST 4
- ▶ **CARDIAC ARREST: V-FIB/V-TACH →** CHECKLIST 5
- ▶ **MAGNESIUM TOXICITY →** CHECKLIST 11
- ▶ **SEPSIS →** CHECKLIST 14

14 Sepsis

CHARACTERIZED BY: Toxic appearance, altered mental status, oral temp <96.8˚F or ≥100.4˚F (>102˚F warrants increased suspicion), tachycardia, tachypnea, oliguria, WBCs >15,000/mm^3 or <4,000/mm^3 *or* >10% bands

Life-threatening organ dysfunction caused by a dysregulated host response to infection

START:

① Call for help (x4560 – Rapid Response – Group 51)
- ❑ **Declare:** *"This patient is experiencing sepsis"*
- ❑ **Ask:** *"Who will be the Crisis Manager?"*
- ❑ **Crisis Manager designates Checklist Reader**

② Monitor:
- ❑ Continuous fetal monitoring, SpO_2, and mental status assessment
- ❑ BP, RR and temp every 30 minutes
- ❑ Urine output hourly (indwelling catheter with urimeter)

③ Order *"Adult Sepsis"* order set in Epic, obtain related LAB WORK

④ Ensure sufficient IV access (large bore IVs x2)

⑤ Give LR fluid bolus
- ❑ 500mL bolus x2, up to 30mL/kg
- ❑ Reassess volume status after each bolus
- ❑ If hypotension persists after boluses, assess hemodynamic status and consider Norepinephrine for MAP <65mmHg

⑥ Give Antibiotics within 30 minutes of presentation
- ❑ Order through *"Obstetric Antibiotics"* order set
- ❑ Source-directed if possible
- ❑ Broad-spectrum if source unclear

⑦ Prepare for potential premature delivery:
- ❑ Betamethasone for fetal lung maturity
- ❑ Magnesium Sulfate for neuroprotection if EGA <32 weeks

⑧ Consult ICU, MFM, and ID as appropriate

⑨ Start VTE prophylaxis

LAB WORK

- Aerobic and anaerobic blood cultures x2 sites
- Other cultures (urine, sputum, amniotic fluid, etc.) as indicated
- CBC and differential
- CMP
- DIC screen
- Lactate
- Type and screen

MEDICATIONS

IV ANTIBIOTICS (consider ID consult):
FIRST LINE Broad-Spectrum: Piperacillin/Tazobactam (Zosyn) (4.5gm)
PCN ALLERGY Broad-Spectrum:
- **If able to tolerate Cephalosporin:** Metronidazole (Flagyl) 500mg *in addition to* Ceftriaxone (Rocephin) 2gm (IVP) *or* Cefepime (Maxipime) 2gm
- **If severe PCN/Cephalosporin Allergy (Non-Type II-IV):** Meropenem (Merrem) 1gm
- **If severe Carbapenem Allergy *and/or* Type II-IV Hypersensitivity:** Vancomycin 20mg/kg (max 2gm initial dose) + Aztreonam (Azactam) 2gm + Metronidazole (Flagyl) 500mg - **AVOID BETA-LACTAMS**

Norepinephrine (Levophed): 2-5mcg/min IV
- Titrate by 0.5-5mcg/min every minute (range 1-100mcg/min)
- Administration via dedicated IV preferred
- For prolonged use or higher concentrations, consider central venous catheter

PREMATURE FETAL PROTECTION:
Betamethasone: 2 doses of 12mg IM, 24 hours apart
Magnesium sulfate: 4gm loading dose IV over 20-30 minutes
- Follow with maintenance dose of 1gm/hour

RELATED CHECKLISTS

- ▶ **ALTERED MENTAL STATUS/STROKE →** CHECKLIST 1
- ▶ **CARDIAC ARREST: PEA/ASYSTOLE →** CHECKLIST 4
- ▶ **CARDIAC ARREST: V-FIB/V-TACH →** CHECKLIST 5
- ▶ **POSTPARTUM HEMORRHAGE →** CHECKLIST 12

15 Severe Hypertension

SIGNS AND SYMPTOMS OF PREECLAMPSIA: Headache, vision changes, light sensitivity, shortness of breath, right upper quadrant pain, nausea, vomiting, edema

A systolic blood pressure greater than 160 mmHg and/or a diastolic blood pressure greater than 110mmHg persisting for 15 minutes or longer (does not need to be consecutive)

START:

① Call for help (page Responding Clinician via Virtual Pager with current BP and request bedside assessment)
- ❑ **Declare:** *"This patient is experiencing severe hypertension."*
- ❑ **Ask:** *"Who will be the Crisis Manager?"*
- ❑ **Crisis Manager designates Checklist Reader**

② If pregnant: Start continuous EFM

③ Monitor BP every 5 minutes

④ Start Antihypertensive Therapy using *"Labor and Delivery and Post Partum Hypertensive Emergency Add On Order Set"* in Epic
- ❑ If IV access, initiate IV Antihypertensive Therapy per algorithm
- ❑ If no IV access, start with Nifedipine

⑤ Ensure large-bore IV access
- ❑ Consider two IV lines

⑥ Draw preeclampsia LAB WORK

⑦ Complete preeclampsia assessment
- ❑ Initiate Magnesium Sulfate for seizure prophylaxis and begin magnesium assessment
- ❑ Initiate seizure precautions (e.g. side rails up)
- ❑ Place indwelling urinary catheter with urimeter (strict I&O)
- ❑ If <34 weeks gestation: Give Betamethasone

⑧ For refractory hypertension, consider intensivist/hospitalist consult

⑨ If unremitting headache or neurologic symptoms: Consider brain imaging

LAB WORK

- CBC
- LDH
- Uric acid
- DIC screen
- CMP
- Urine protein-to-creatinine ratio

MEDICATIONS

ANTIHYPERTENSIVE THERAPY (target BP range: 140-150/90-100mmHg):

Labetalol:
- **Initial Dose:** 20mg IV push over 2 minutes
- **Repeat BP in 10 min, if exceeds target range:** 40mg IV push over 2 minutes
- **Repeat BP in 10 min, if exceeds target range:** 80mg IV push over 2 minutes
- **Repeat BP in 10 min, if exceeds target range:** Change to Hydralazine 10mg IV push over 2 minutes, obtain MFM, anesthesiology and/or ICU consultation
- **Maximum Cumulative Dose:** 300mg in 24 hours
- **Caution** with asthma, heart failure, bradycardia **(hold for maternal pulse <60)**

Hydralazine:
- **Initial Dose:** 10mg IV push over 2 minutes
- **Repeat BP in 20 min, if exceeds target range:** 10mg IV push over 2 minutes
- **Repeat BP in 20 min, if exceeds target range:** Change to Labetalol 20mg IV push over 2 minutes, obtain MFM, anesthesiology and/or ICU consultation

Nifedipine (Immediate Release):
- **Initial Dose:** 10mg PO
- **Repeat BP in 20 min, if exceeds target range:** 20mg PO
- **Repeat BP in 20 min, if exceeds target range:** 20mg PO
- **Repeat BP in 20 min, if exceeds target range:** Administer Labetalol 20mg IV push over 2 minutes, obtain MFM, anesthesiology and/or ICU consultation

SEIZURE PROPHYLAXIS

Magnesium Sulfate:
- **Bolus:** 4-6gm IV over 20-30 minutes
- **Maintenance Dose:** 1-2gm/hour

Betamethasone: 2 doses of 12mg IM, 24 hours apart

RELATED CHECKLISTS

► **ECLAMPSIA →** CHECKLIST 8

16 Shoulder Dystocia

Failure of shoulder to deliver spontaneously due to getting caught above pubic bone, characterized by "turtle sign" and/or head-to-body delivery time greater than 1 minute

START:

MANEUVER DIAGRAMS CAN BE FOUND ON FOLLOWING PAGE

① Call for help (x4560 – OB Emergency – Group 555))
- ❑ **Declare:** *"We have a shoulder dystocia"*
- ❑ **Ask:** *"Who will be the Crisis Manager?"*
- ❑ **Crisis Manager designates Checklist Reader and Timekeeper**
- ❑ **Timekeeper (Baby Nurse)** notes time of shoulder dystocia and calls out time every 30 seconds
- ❑ **State:** *"Open the OR"*

② Tell patient not to push unless instructed

③ Lower the head of the bed and obtain step stool

④ Perform Initial Maneuvers:
- ❑ McRoberts Maneuver and suprabupic pressure **(NOT fundal)**
- ❑ Delivery of posterior arm

⑤ Perform Secondary Maneuvers (scapula release):
- ❑ Rubin Maneuver
- ❑ Woods Screw Maneuver
- ❑ Axillary traction for delivery of posterior shoulder

⑥ Perform Tertiary Maneuvers:
- ❑ Gaskin All-Fours Maneuver (hands and knees)
- ❑ Posterior Axilla Sling Traction (PAST)
- ❑ Clavicular fracture

⑦ If above maneuvers fail, move towards emergent delivery (OR vs. bedside)

⑧ Perform Maneuvers of Last Resort:
- ❑ **Zavanelli** Maneuver for C-section (remove FSE, give Nitroglycerin or Terbutaline)
- ❑ Abdominal rescue
- ❑ Symphysiotomy

LAB WORK

- Umbilical cord gases

MEDICATIONS

UTERINE RELAXANTS:

Nitroglycerin (100mcg/mL): 100-200mcg IV every minute
- 5 South Omnicell

Terbutaline: 0.25mg SC

ADDITIONAL CONSIDERATIONS

- **DO NOT** apply fundal pressure
- **DO NOT** persist in one maneuver if not quickly successful
- It is reasonable to attempt a maneuver a couple of times
- Ensure patient receives adequate pain control
- Document maneuvers and times

ZAVANELLI MANEUVER

Place a fetal scalp electrode. Rotate the back of the head to an occiput anterior position. Flex the head from its extended position and push it as far cephalad as possible using firm pressure with the palm of one hand. The other hand may be used to depress the perineum.

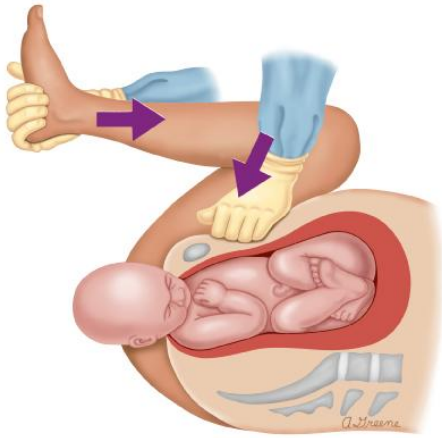
RELATED CHECKLISTS

► **POSTPARTUM HEMORRHAGE →** CHECKLIST 12

16 Shoulder Dystocia – MANEUVERS

Images and adapted descriptions from UpToDate (Shoulder dystocia: Intrapartum diagnosis, management, and outcome) and the AAFP

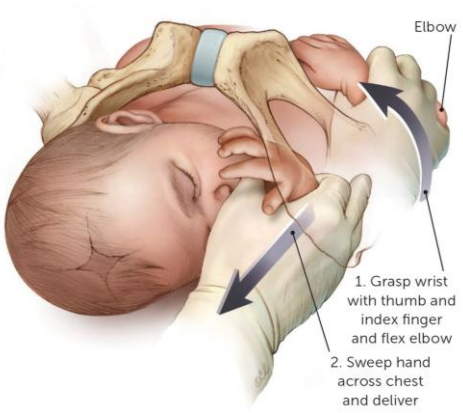
McRoberts Maneuver and Suprapubic Pressure



McRoberts: Hips are hyperflexed with knees to chest.

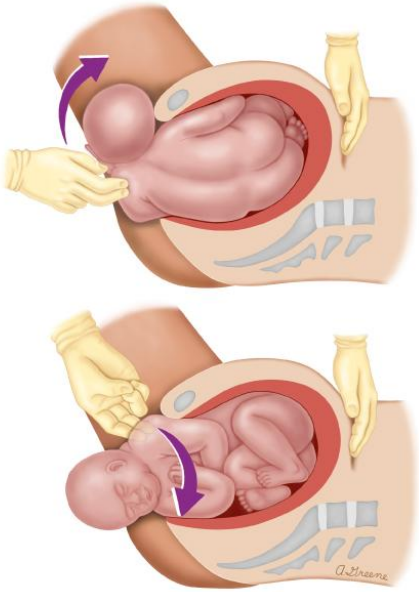
Suprapubic Pressure: Pressure is applied suprapubically with the palm or fist, directing pressure on the anterior shoulder both downward (to below the pubic bone) and laterally (toward the baby's face or sternum).

Delivery of Posterior Arm



The provider's hand enters the pelvis posteriorly, traveling along the fetal chest to grasp the posterior wrist using an "OK" sign. Hooking the little finger around the fetal elbow may facilitate the maneuver. The arm is then swept across the fetal chest.

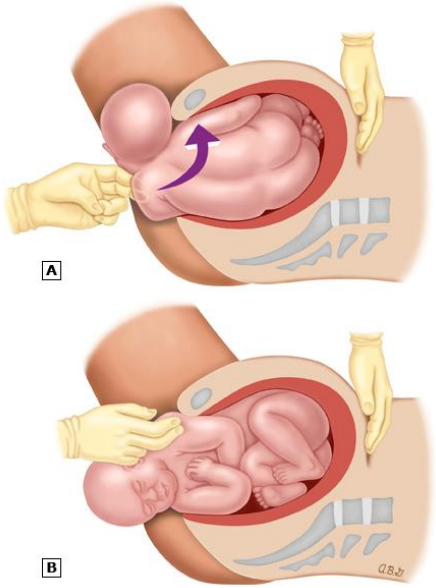
Rubin Maneuver



A hand is inserted into the vagina behind the posterior fetal shoulder and then rotates it anteriorly (toward the fetal face). If the fetal spine is on the maternal left, the operator's right hand is used. The maneuver can also be attempted by placing a hand behind the anterior shoulder if it is more accessible. **No fundal pressure** is used.

Anesthesia recommended due to procedure's invasive nature.

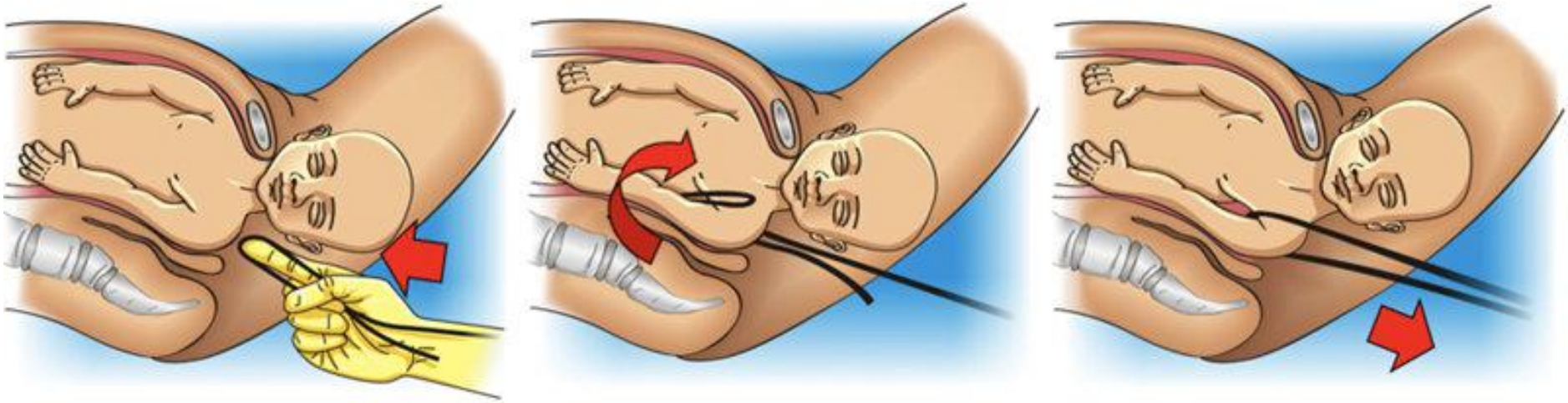
Woods Screw



(A) The posterior shoulder is rotated counterclockwise until (B) it becomes anterior. The anterior shoulder rotates out from under the symphysis pubis and descends during this process. **No fundal pressure** is used.

16 Shoulder Dystocia – MANEUVERS

Posterior Axilla Sling Traction (PAST)



A red rubber catheter is recommended for the sling.

17 Tachycardia, Unstable

Persistent tachycardia with hypotension, ischemic chest pain, altered mental status, or shock

START:

① Call for help (x4560 – Rapid Response – Group 51)
- ❑ **Declare:** *"This patient is experiencing unstable tachycardia"*
- ❑ **Ask:** *"Who will be the Crisis Manager?"*
- ❑ **Crisis Manager designates Checklist Reader**
- ❑ **Obtain Code Cart**

② Monitor heart rhythm, EFM, and vital signs (RR, BP, HR, SpO_2)
- ❑ 12-Lead EKG

③ Maintain patent airway, assist breathing as necessary
- ❑ Give oxygen via nonrebreather, titrate to ≥ 95%

④ Assist Rapid Response Team
- ❑ Turn on defibrillator and apply pads

⑤ Rapid Response Team: Analyze rhythm
- ❑ If **wide complex, irregular:** Treat as V-Fib, go to CHECKLIST 5
- ❑ If **narrow complex, regular:** Consider Adenosine while awaiting cardioversion

⑥ Rapid Response Team: Prepare for immediate synchronized cardioversion
- ❑ If conscious, sedate patient unless deteriorating rapidly

⑦ Rapid Response Team: Perform synchronized cardioversion

⑧ Rapid Response Team: If resistant to electrical conversion, consider Amiodarone

⑨ Obtain cardiology consultation

LAB WORK

- Pro-BNP
- TSH
- Lactate
- CMP
- Troponin
- CBC

MEDICATIONS

ANTIARRHYTHMICS:

Adenosine: 6mg **rapid** IV push followed by immediate 10mL flush
- In Code Cart
- If persistent, 12mg **rapid** IV push followed by immediate 10mL flush
- **Caution** with severe asthma

Amiodarone: 150mg IV over 10 minutes
- In Code Cart
- May repeat once

RELATED CHECKLISTS

► **CARDIAC ARREST: PEA/ASYSTOLE →** CHECKLIST 4
► **CARDIAC ARREST: V-FIB/V-TACH →** CHECKLIST 5

18 Uterine Inversion

The uterine fundus completely or partially prolapses into the vagina or beyond the introitus, turning the uterus inside out

START:

DIAGRAMS CAN BE FOUND ON FOLLOWING PAGE

① Call for help (x4560 – OB Emergency – Group 555)
- ❑ **Declare:** *"This patient is experiencing a uterine inversion"*
- ❑ **Ask:** *"Who will be the Crisis Manager?"*
- ❑ **Crisis Manager designates Checklist Reader**
- ❑ **State:** *"Open the OR"*

② Discontinue Oxytocin and other uterotonics, obtain Uterine Relaxants

③ Attempt manual reduction
- ❑ Use hand to push fundus along axis of vagina towards umbilicus
- ❑ If constriction ring is palpable, apply pressure to part of fundus nearest ring to ease it through
- ❑ Leave placenta attached

④ Monitor BP, HR, SpO_2
- ❑ 10L oxygen via NRB

⑤ Ensure IV access (two large-bore IVs) and start IV fluid bolus

⑥ Order 2 units PRBCs STAT by calling Blood Bank (x6091)
- ❑ Consider Massive Transfusion Protocol if giving more than 4 units

⑦ After successful reduction, hold fundus in place until uterus is firm and position is stable

⑧ If manual reduction unsuccessful:
- ❑ **Hemodynamically unstable:** Consider laparotomy
- ❑ **Hemodynamically stable:** Give a Uterine Relaxant and reattempt
  - If reattempt unsuccessful transfer patient to OR for Huntington Procedure

⑩ Await spontaneous separation of placenta
- ❑ Manual extraction only if indicated (hemorrhage, prolonged third stage, etc.)

⑪ Once uterus reduced, give Oxytocin to maintain uterine contractility

⑫ If bradycardic, give Atropine

⑫ Give Antibiotic Prophylaxis

MEDICATIONS

UTERINE RELAXANTS:

Nitroglycerin (100mcg/mL): 100-200mcg IV every minute
- 5 North Omnicell and L&D ORs

Terbutaline: 0.25mg SC

Oxytocin (Pitocin) (30 units/500mL): Titrate to maintain uterine contractility

Atropine: 0.5mg IV push over 1 minute

ANTIBIOTIC PROPHYLAXIS:

Cefazolin (Ancef): 2gm IV over 30 minutes
- ***If patient >120kg:*** 3gm IV over 30 minutes

PCN ALLERGY Broad-Spectrum:
- Clindamycin (Cleocin): 600mg IV over 30 minutes
  and
- Gentamicin: 5mg/kg IV over 30-60 minutes

RELATED CHECKLISTS

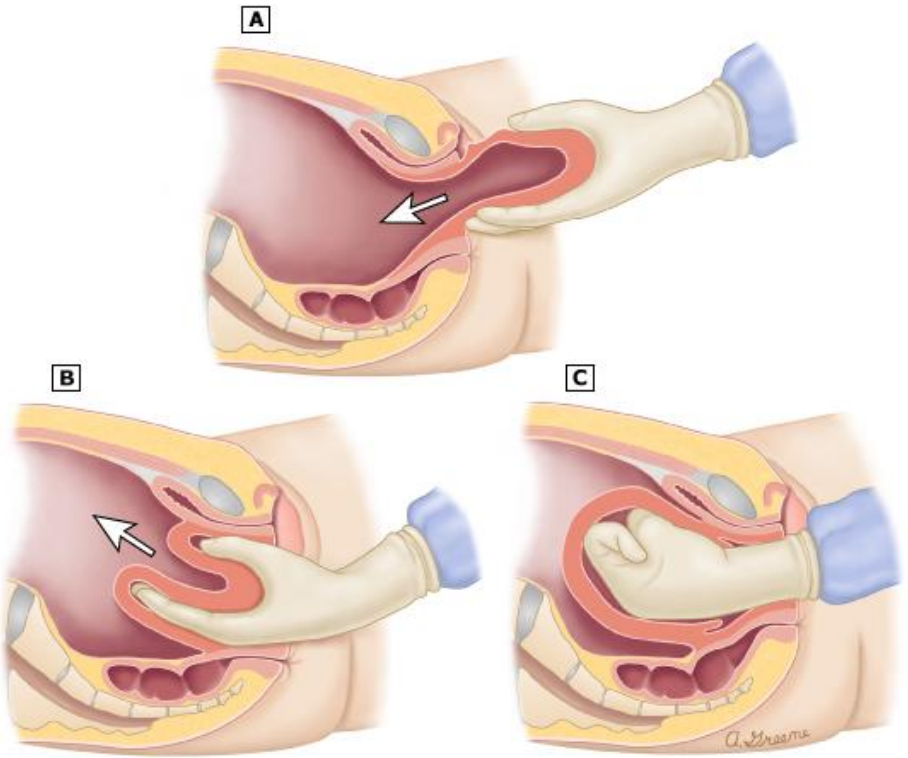
► **POSTPARTUM HEMORRHAGE →** CHECKLIST 12

18 Uterine Inversion – DIAGRAMS

Images and descriptions from UpToDate (Puerperal uterine inversion)

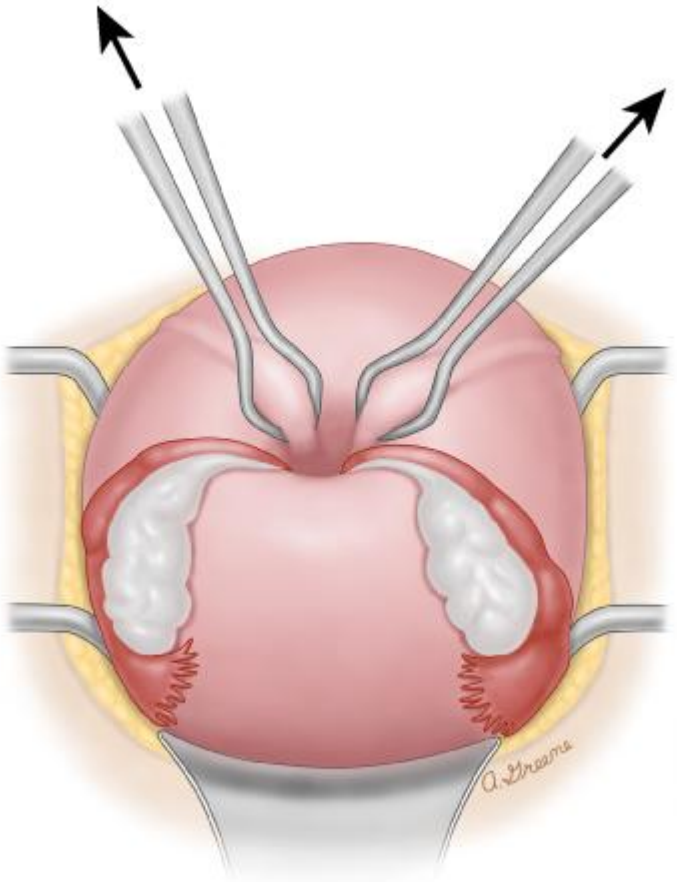
Manual Replacement of Uterine Inversion

The inverted uterus is replaced by placing a hand inside the vagina and pushing the fundus along the long axis of the vagina toward the umbilicus. If a constriction ring is palpable, pressure should be applied to the part of the fundus nearest to the ring to ease it through from bottom to top.



Huntington Procedure

In the Huntington Procedure, the cup formed by the inversion is located. A clamp, such as an Allis or Babcock clamp, is placed on the round ligament entering the cup, approximately 2cm deep into the cup. Gently pulling on the clamps exerts upward traction on the inverted fundus. Clamping and traction are repeated until the inversion is correction. The myometrium can be clamped if the round ligaments cannot be identified.



Massive Transfusion Protocol (Blood Bank x6091)

SET #1
- ► **4 RBCs**
- ► **2 FP** (if patient not known to be B or AB)

SET #2
- ► **3 RBCs**
- ► **3 FP**
- ► **1 (5-Pack) Cryo**

SET #3
- ► **6 RBCs**

After this set, seek Medical Director consult regarding whether crossmatching future RBCs is necessary

SET #4
- ► **6 FP**

SET #5
- ► **1 Pheresis**
- ► **2 (5-Pack) Cryo**

SET #6
- ► **6 RBCs**

SET #7
- ► **6 FP**

SET #8
- ► **1 Pheresis**
- ► **2 (5-Pack) Cryo**

SET #9
- ► **6 RBCs**

SET #10
- ► **6 FP**

SET #11
- ► **1 Pheresis**
- ► **2 (5-Pack) Cryo**

SET #12
- ► **6 RBCs**

SET #13
- ► **6 FP**

SET #14
- ► **1 Pheresis**
- ► **2 (5-Pack) Cryo**

SET #15
- ► **6 RBCs**

SET #16
- ► **6 FP**

SET #17
- ► **1 Pheresis**
- ► **2 (5-Pack) Cryo**

SET #18
- ► **6 RBCs**

SET #19
- ► **6 FP**

HELPFUL PEARLS

- OB needs to supply a runner (the Blood Bank does **NOT** provide one)
- There is only **1** pack of platelets in the hospital- additional platelets can be ordered from the Red Cross in Dedham and usually arrive in about an hour
- Additional products can be requested in addition to the MTP, but this is discouraged **as it can delay the delivery of products in the MTP**

Blood Tube Index (by order of draw)

① Blood Cultures (aerobic then anaerobic)

② Blue Top (Coags)

- PT/INR
- PTT
- D-Dimer
- Fibrinogen

Sodium (Na) Citrate

③ Red Top

- Prescription/OTC drug screen

Serum Clot Activator

④ SST

- Chemistries (if PST not available)
- Calcium
- Hep B surface antigen
- RPR
- HIV rapid screen
- Toxoplasma IgM/IgG

Serum Separator Clot Activator (SST)

⑤ PST

- CMP
- BMP
- Troponin
- LFTs
- Creatinine
- BNP
- Glucose

Lithium Heparin Separator with Gel

⑥ Green Top

- Troponin (if PST not available)
- Ionized calcium (on ice)

Lithium Heparin Without Gel

⑦ Lavender Top

- CBC
- Platelets
- Kleihauer-Betke
- HIV viral load

K2 or *K3 EDTA*

⑧ Pink Top

- Type and screen

K2 EDTA (K2E)

⑨ Gray Top

- Lactate

Sodium Fluoride/ Potassium Oxalate

Telephone Directory

LABOR & DELIVERY
5 North Desk (L&D): x6822
5 South Desk (AETU): x5186
PACU: x5230
L&D PTL: Voalte

POSTPARTUM
5 West Desk: x6340
Usen 5 Desk: x6895
5 West Nursery: x6337
Usen 5 Nursery: x6892
Postpartum PTL: x3202 *or* Voalte

SPECIAL CARE NURSERY
SCN Desk: x6728
SCN STAT: x2229
SCN PTL: x1576

OTHER
Pharmacy: x6012, then 3
Blood Bank: x6091
Laboratory (STAT): x5971
Laboratory (NON-STAT): x6300, then 2, then 3
Radiology: x6162
Interventional Radiology: x3751
Ultrasound: x6581
ICU: x6587
Emergency Department: x6193