

Labor & Delivery Crisis Checklists



NEWTON-WELLESLEY
HOSPITAL



FOUNDED BY BRIGHAM AND WOMEN'S HOSPITAL
AND MASSACHUSETTS GENERAL HOSPITAL

>> Do not remove book from this room <<

Revised October 2016.

Based on the OR Crisis Checklists at www.projectcheck.org/crisis, developed at the Harvard School of Public Health, Brigham and Women's Hospital and Ariadne Labs.

All reasonable precautions have been taken to verify the information contained in this publication. The responsibility for the interpretation and use of the materials lies with the reader.

SUSPECTED EVENT

- 1 Altered Mental State
- 2 Anaphylaxis
- 3 Cardiac Arrest – VF/VT
- 4 Cardiac Arrest – Asystole/PEA
- 5 Cardiovascular Collapse
- 6 Cord Prolapse
- 7 Eclampsia
- 8 Hemorrhage
- 9 Hypertension
- 10 Impacted Fetal Head
- 11 Local Anesthetic Toxicity
- 12 Magnesium Toxicity
- 13 Respiratory Distress
- 14 Sepsis
- 15 Shoulder Dystocia
- 16 Tachycardia – Unstable
- 17 Uterine Inversion



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1 Altered Mental Status

Delirium, Obtundation, Coma, Confusion, Speech Deficit

START

- 1 **Call for help**
 - ▶ **Ask:** “Who will be the crisis manager?”
 - ▶ **Crisis manager designates checklist reader**
- 2 **Obtain FHR, T**
 - ▶ Monitor EKG, BP, SpO₂, RR
- 3 **Evaluate, maintain airway:
call Anesthesiology**
- 4 **Establish IV access**
- 5 **Send laboratory studies**
 - ▶ **AccuCheck Glucose**
- 6 **Treat hypoglycemia with Dextrose or Glucagon**
- 7 **Stroke Assessment – if any⊕, page Stroke Team**
- 8 **Page Neurology/MFM/Hospitalist as needed**
- 9 **Review medications; antagonists as needed**

DRUG DOSES and treatments

Naloxone: 0.4-2 mg IV/IM/SC, repeated in 3 minutes prn

Flumazenil (Benzodiazepine antagonist): 0.2 mg IV, repeat prn

Dextrose: 50 ml D50W IV

Glucagon: 1 mg IM/IV/SC

STROKE assessment

Facial Droop: Show teeth, smile

Arm Drift: Eyes closed, extend arms, palm up x 10 secs

Speech: Say “you can’t teach old dogs new tricks”

Sudden onset severe (“thunderbolt”) headache?

LABORATORY studies

STAT

CBC, Chem12, Mg⁺⁺, LFTs
Urinalysis, Urine Toxicology

Critical CHANGES

If seizures, go to: ▷ CHKLST 7 –
ECLAMPSIA

If bleeding, go to: ▷ CHKLST 8 –
HEMORRHAGE

If hemodynamic instability, go to:
▷ CHKLST 5 – **MATERNAL
CARDIOVASCULAR COLLAPSE**

Consider ▷ CHKLST 12 – **MAGNESIUM
TOXICITY**

Consider ▷ CHKLST 11 – **LOCAL
ANESTHETIC TOXICITY**

2 Anaphylaxis

Hypotension, bronchospasm, tachycardia, urticaria

START

- 1 **Call for help and a code cart**
 - ▶ **Ask:** “Who will be the crisis manager?”
 - ▶ **Crisis manager designates checklist reader**
- 2 **Remove potential causative agents**
- 3 **Give epinephrine bolus** (may be repeated)
- 4 **IV fluid bolus**
- 5 **Administer 100% O₂ via non-rebreather mask – intubate as needed**
- 6 **Consider...**
 - ▶ Vasopressin for refractory hypotension
 - ▶ Epinephrine infusion
 - ▶ Diphenhydramine (Benadryl)
 - ▶ Hydrocortisone
 - ▶ Bronchodilators
 - ▶ H₂ Blockers
- 7 **Tryptase level at first hour, hour 4 and 18–24 hrs post reaction**

DRUG DOSES and treatments

Epinephrine: Dilute 1 mg in 250 ml = 4 mcg/ml
Bolus 10–100 mcg IV, repeat prn
Infusion: 1–10 mcg/min IV
If no IV access: Epinephrine
Autoinjector 0.3 mg IM (Pyxis
Anaphylaxis kit)

Vasopressin: 1–2 units IV

Diphenhydramine: 25–50 mg IV

H2 blockers: Ranitidine: 50 mg IV -or-
Cimetidine: 300 mg IV

Hydrocortisone: 100 mg IV

Common CAUSATIVE AGENTS

- Antibiotics
- Latex products
- Neuromuscular blocking agents

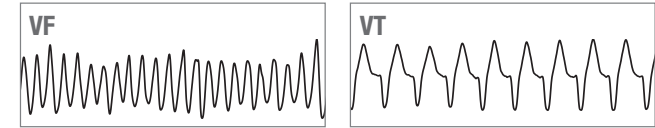
Critical CHANGES

If **CARDIAC ARREST**, go to:

▷ CHKLST 4 – **ASYSTOLE / PEA**

▷ CHKLST 3 – **VF/VT**

3 Cardiac Arrest – VF/VT



Shockable pulseless cardiac arrest

START

- 1 **Call for help, a code cart and a C-section kit**
 - ▶ **Ask:** “Who will be the crisis manager?”
 - ▶ **Crisis manager designates checklist reader**
 - ▶ **Ask:** “Who will be the code recorder–timekeepers?”
 - ▶ **Say:** “The top priority is high quality CPR”
- 2 **Put backboard under patient, supine position, uterine displacement if pregnant**
- 4 **Start CPR, Defibrillation and assessment cycle: Announce time every minute**
 - ▶ **Perform CPR**
 - Hard and fast, 100-120 compressions/min, 2 inches
 - Ensure full chest recoil with minimal interruptions
 - 10 breaths/min, do not over-ventilate
 - ▶ **Defibrillate**
 - Shock at 200 J
 - Resume CPR immediately after shock
 - ▶ **Give epinephrine 1 mg**
 - Repeat epinephrine every 3–5 minutes
 - Consider antiarrhythmics for refractory VF/VT
 - ▶ **Assess every 2 minutes**
 - Change CPR compression provider
 - Check rhythm; if rhythm organized check pulse
 - Treat reversible causes; review Hs&Ts
 - Deliver within 4 minutes if no return of spontaneous circulation

DRUG DOSES and treatments

Epinephrine: 1 mg IV, repeat every 3 – 5 mins.

ANTIARRHYTHMICS

Amiodarone: 1st dose: 300 mg/IV/IO
2nd dose: 150 mg/IV/IO

Magnesium: 1 to 2 g IV/IO for Torsades de Pointes

DEFIBRILLATOR operation

1. Place electrodes on chest.
2. Turn defibrillator ON, set to DEFIB mode, 200 J setting
3. Press CHARGE; press SHOCK.

Hs & Ts

- | | |
|---------------------------|---|
| • Hydrogen ion (acidosis) | • Tamponade (cardiac) |
| • Hyperkalemia | • Tension pneumothorax |
| • Hypothermia | • Thrombosis (coronary/pulmonary) |
| • Hypovolemia | • Toxin (local anesthetic, beta blocker, calcium channel blocker) |
| • Hypoxia | |

DELIVER WITHIN 4 MINUTES IF NO RETURN OF SPONTANEOUS CIRCULATION

4 Cardiac Arrest – Asystole/Pulseless Electrical Activity (PEA)

Non-shockable pulseless cardiac arrest

ASYSTOLE

PEA



START

- 1 Call for help, a code cart and a C-section kit**
 - ▶ **Ask:** “Who will be the crisis manager?”
 - ▶ **Crisis manager designates checklist reader**
 - ▶ **Ask:** “Who will be the code recorder–timekeepers?”
 - ▶ **Say:** “The top priority is high quality CPR”
- 2 Put backboard under patient, supine position; uterine displacement if pregnant**
- 3 Start CPR and assessment cycle: Announce time every minute**
 - ▶ **Perform CPR**
 - Hard and fast, 100-120 compressions/min, 2 inches
 - Ensure full chest recoil with minimal interruptions
 - 10 breaths/min, do not over-ventilate
 - ▶ **Give epinephrine 1 mg**
 - Repeat epinephrine every 3–5 minutes
 - ▶ **Assess every 2 minutes**
 - Change CPR compression provider
 - Check ETCO₂
 - If:** <10 mm Hg, evaluate CPR technique
 - If:** Sudden increase to > 40 mm Hg, may indicate return of spontaneous circulation
 - Check rhythm: if rhythm organized, check pulse
 - If:** Asystole/PEA continues
 - Resume CPR & Assessment Cycle
 - Read aloud Hs & Ts
 - If:** VF/VT
 - Resume CPR
 - Go to: ▷ CHKLST 3 – VF/VT
 - Deliver within 4 minutes if no return of spontaneous circulation

DRUG DOSES and treatments

Epinephrine: 1 mg IV, repeat every 3 – 5 mins.

TOXIN TREATMENT

Local anesthetic:

- Intralipid 1.5 ml/kg IV bolus
- Repeat 1-2 times for persistent asystole
- Start infusion 0.25-0.5 ml/kg/min for 30-60 min for refractory hypotension

Beta-Blocker: Glucagon 2-4 mg IV push

Calcium channel blocker: CaCl 1 g IV

Magnesium: Stop Mg infusion if running

HYPERKALEMIA TREATMENT

1. Calcium gluconate 30 mg/kg IV -or- Calcium chloride 10 mg/kg IV
2. **Insulin/Dextrose** 10 units regular insulin IV with 1-2 amps D50W as needed
3. **Sodium Bicarbonate** if pH < 7.2 1-2 mEq/kg slow IV push

Hs & Ts

- Hydrogen ion (acidosis)
- Hyperkalemia
- Hypothermia
- Hypovolemia
- Hypoxia
- Tamponade (cardiac)
- Tension pneumothorax
- Thrombosis (coronary/pulmonary)
- Toxin (local anesthetic, beta blocker, calcium channel blocker)

DELIVER WITHIN 4 MINUTES IF NO RETURN OF SPONTANEOUS CIRCULATION

5 Maternal Cardiovascular Collapse

START

- 1 **Call code and get Code Cart/Bedside CS Kit**
 - ▶ **Ask:** “Who will be the crisis manager?”
 - ▶ **Crisis manager designates checklist reader**
 - ▶ **Ask:** “Who will be the code recorder?”
 - ▶ **Note time of arrest; announce 1 min intervals**
- 2 **Insert backboard, supine position, left uterine displacement**
- 3 **Confirm absence of pulse**
- 4 **Start CPR: 100-120 compressions/minute, 2 inches**
 - ▶ Hand position high on sternum
 - ▶ 10 breaths/ minute – do not overventilate
- 5 **Establish IV access**
- 6 **Administer Epinephrine 1 mg IV**
- 7 **Attach defibrillator pads; remove fetal monitors**
- 8 **Assess rhythm:**
 - ▶ If **VF/VT** go to: ▷ CHKLST 3 – Defib 200 J ASAP
 - ▶ If **ASYSTOLE/PULSELESS ELECTRICAL ACTIVITY (PEA)** go to: ▷ CHKLST 4
- 9 **Open bedside Cesarean kit**
 - ▶ Proceed with delivery if no return of circulation in **4 minutes**
 - Administer prophylactic antibiotics

Critical CHANGES

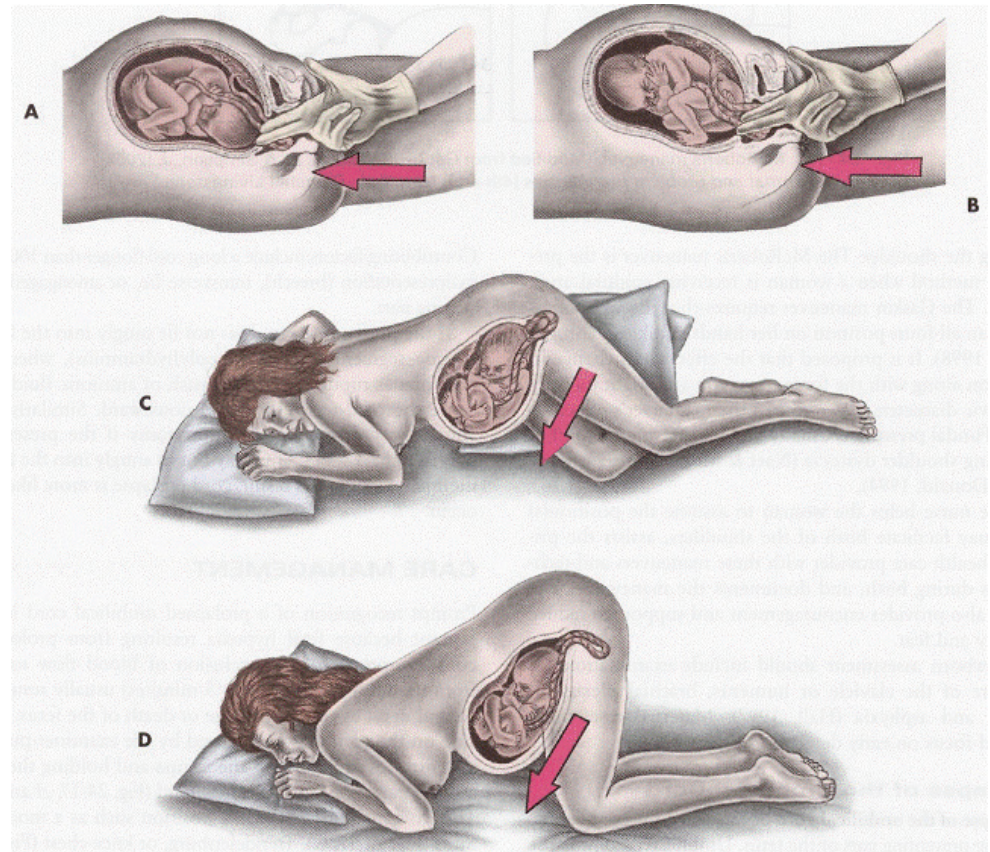
- Stop MgSO_4 if running; if **MG TOXICITY** suspected go to: ▷ CHKLST 12
- Stop epidural infusion if present
- Consider total spinal, local anesthetic toxicity
- If maternal hemorrhage, call x6091 for OB Massive Transfusion Protocol; go to: ▷ CHKLST 8 – **OBSTETRICAL HEMORRHAGE**
- Consider **SEPSIS**, go to: ▷ CHKLST 14

DELIVER WITHIN 4 MINUTES IF NO RETURN OF SPONTANEOUS CIRCULATION

6 Cord Prolapse

START

- 1 **Call for help**
 - ▶ Ask: “Who will be the crisis manager?”
 - ▶ Crisis manager designates checklist reader
- 2 **Prepare OR for Cesarean Section**
- 3 **Manually elevate the presenting part**
- 4 **Hands & Knees or Trendelenburg position**
- 5 **Consider instilling 500-750 ml fluid in bladder via Foley catheter**
- 6 **Supplemental oxygen**
- 7 **Verify Fetal Heart:**
Doppler, ultrasound or cord pulsation
- 8 **In OR:**
 - ▶ Re-check FHR: Assess for Regional vs. general anesthesia
 - ▶ Maintain manual elevation until just prior to uterine incision; evacuate bladder prior to skin incision



N. Petrenko MD, PhD

7 Eclampsia

START

- 1 **Call for help**
 - ▶ **Ask:** “Who will be the crisis manager?”
 - ▶ **Crisis manager designates checklist reader**
- 2 **Prepare OR for possible CS; notify ICU & SCN**
- 3 **Support airway; supplemental O2**
- 4 **IV access**
- 5 **Administer magnesium sulfate loading dose; begin infusion**
- 6 **Lateral decubitus position, padded siderails**
- 7 **Monitor mother and baby**
 - ▶ Fetal US if needed
 - ▶ EKG, BP, SpO₂, FHR
- 8 **If seizures persist, consider Lorazepam or Phenytoin**
- 9 **Antihypertensive if SBP>160 or DBP > 110**
- 10 **Bladder catheter**

DRUG DOSES and treatments

Magnesium: **IV:** 6 gm load + 2 gm/hr infusion
IM: 10 gms 50% solution (5 gms each buttock) if no IV. **Infusion:** 1-2 gm/hr.

Lorazepam: 2-4 mg IV, repeat in 10 min if needed

Phenytoin: 10 mg/kg IV; slow IV administration (< 50 mg/min); additional 10 mg/kg IV in 20 min if needed

Labetolol: Escalating doses every 10 min:
20/40/80/80 mg IV

- Avoid in severe asthma or heart failure; caution with pulse <60; can cause fetal bradycardia

Hydralazine: 5-10 mg IV, repeat in 20 min as needed

Critical CHANGES

- Consider **MG TOXICITY** ▷ CHKLST 12
- Consider **LOCAL ANESTHETIC TOXICITY** ▷ CHKLST 11
- Consider Neurology consult

8 Obstetrical Hemorrhage

START

- 1 Call for help, Postpartum Hemorrhage Kit**
 - ▶ **Ask:** “Who will be the crisis manager?”
 - ▶ **Crisis manager designates checklist reader**
- 2 Contact Blood Bank x6091 for “OB Massive Transfusion protocol”**
- 3 Establish large bore IV access**
- 4 Monitor EKG, NIBP, SpO2**
 - ▶ Announce VS and cumulative blood loss q10 min
- 5 Give uterotonic agents**
- 6 Perform exam, Uterine Massage**
 - ▶ D&C, Laceration repair needed?
- 7 Send STAT labs**
- 8 Warm patient and fluids**
- 9 Obtain pressure infuser**
- 10 Bladder catheter**

TRANSFUSION

- PRBC:FFP:Platelets @ 4:4:1 ratio
- Cryoprecipitate 10 units for Fibrinogen <80

CONSIDER

- ▶ Transfer to OR
- ▶ ABG, arterial line
- ▶ Calcium administration
- ▶ Intrauterine balloon
- ▶ Embolization
 - Call 6162 or
 - Radiologist-on-call
- ▶ Uterine artery ligation
- ▶ Uterine compression suture
- ▶ Hysterectomy

DRUG DOSES and treatments

Pitocin: 30-60 u/l

Methergine: 0.2 mg IM q 2-4 hrs (no IV administration) (Caution with PIH, prior ephedrine, cardiac dz.)

Hemabate: 250 mcg q 15-90 min x 8 prn (intramuscular or intramyometrial, NOT intravenous) (Caution with asthma, hypertension) -or-

Cytotec: 800-1000 mcg PR x1

Calcium Chloride: 200-500 mg/unit RBCs

LABORATORY studies **STAT**

CBC, Chem 12, PT-PTT, Fibrinogen, Ionized Calcium

9 Hypertension

START

- 1 **Call for help and a code cart**
 - ▶ **Ask:** “*Who will be the crisis manager?*”
 - ▶ **Crisis manager designates checklist reader**
- 2 **Monitor fetus if pregnant**
- 3 **Check pre-eclampsia labs**
- 4 **Place an intravenous catheter**
- 5 **BP, ECG and SpO₂ monitoring**
 - ▶ Check vital signs q5 minutes
- 7 **If BP > 160/110 for > 15 min, begin antihypertensive meds**
- 8 **Consider MgSO₄**
- 9 **Consider intensivist/hospitalist consult for refractory hypertension**

DRUG DOSES and treatments

Labetolol: Escalating doses every 10 minutes: 20/40/80/80 mg IV. Caution in asthma, heart failure or HR <60

Hydralazine: 5 mg IV, repeat in 20 min as needed; increase dose to 10 mg as needed

Nifedipine: 10-20 mg PO or SL; repeat every 20 minutes as needed

Magnesium Sulfate: 6 gm load + 2 gm/hr infusion

LABORATORY studies **STAT**

CBC, BUN/Creatinine, LFTs, Uric Acid, LDH, PT/PTT, Fibrinogen

10 Delivery of Impacted Fetal Head

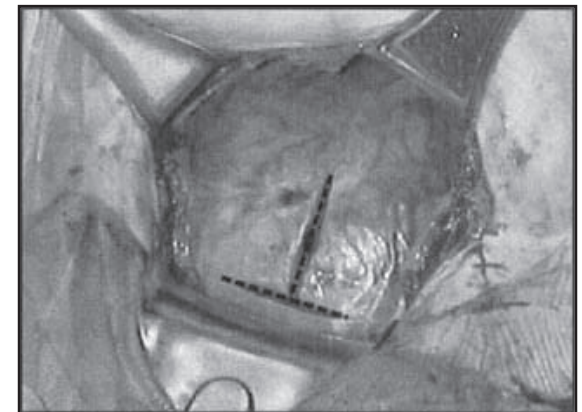
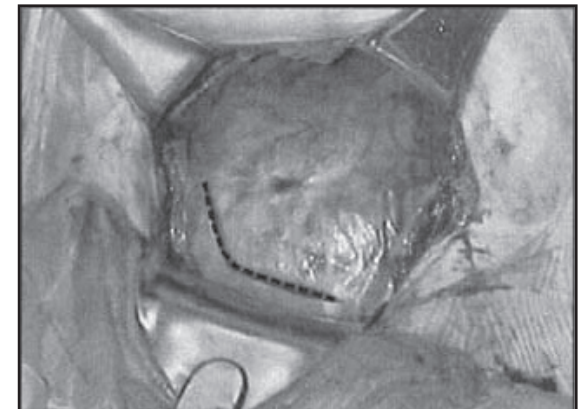
START

- 1 **Alert all staff of at-risk Cesarean**
 - ▶ Prolonged second stage
 - ▶ Failed operative vaginal delivery
 - ▶ Fetal malposition
- 2 **Extend incision — inverse “T” or “J”**
- 3 **Consider uterine relaxation**
- 4 **Incise Bandl’s ring if present**
- 5 **“Push” or “Pull” Technique for delivery**
 - ▶ **Push** with vaginal hand, rotation, flexion as needed
 - ▶ **Pull** – Reverse breech extraction, grasp fetal feet

DRUG DOSES and treatments

Nitroglycerin: 2 ml (10 mg) in 250 ml Normal Saline = 40 mcg/ml. Administer 2 ml (80 mcg) -or- up to 200 mcg.

Terbutaline: 0.25 mg IV or SC



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11 Local Anesthetic Toxicity

Tinnitus, Unresponsiveness, Seizure, Cardiovascular Collapse

START

- 1 **Call for help and a code cart**
 - ▶ **Ask:** “Who will be the crisis manager?”
 - ▶ **Crisis manager designates checklist reader**
- 2 **Discontinue anesthetic infusion**
- 3 **Administer 100% oxygen**
- 4 **Seizure suppression with Lorazepam**
 - ▶ **Avoid propofol**
- 5 **For cardiovascular instability:**
 - ▶ *Adjust ACLS medication protocols:*
 - Avoid vasopressin, calcium channel blockers, beta blockers, local anesthetic
 - Reduce epinephrine boluses to < 1 mcg/kg
- 6 **Lipid emulsion 20% therapy**
- 7 **Consider Cardiopulmonary Bypass:**
 - ▶ **Contact MGH Cardiac Surgery**
617-726-2000 “Cardiac Surgeon on call”

DRUG DOSES and treatments

Lorazepam 4 mg IV
Lipid 20% Emulsion

- ▶ 1.5 ml/kg bolus
 - ~100 ml in 70 kg patient (repeat 2x as needed)
- ▶ Infusion 0.25 ml/kg/min (~18 ml/min)
 - Double rate if BP remains low
- ▶ Continue infusion 10 min after stable

Critical CHANGES

For **ASYSTOLE/PEA** go to: ▷ CHKLST 4
For **VF/VT** go to: ▷ CHKLST 3
Note adjustments to protocols

12 Magnesium Toxicity

Muscle weakness, blurred vision, slurred speech, confusion, flushing, nausea, shortness of breath

START

- 1 **Call for help**
 - ▶ **Ask:** “Who will be the crisis manager?”
 - ▶ **Crisis manager designates checklist reader**
- 2 **Stop Magnesium infusion**
- 3 **Administer Calcium Gluconate IV**
- 4 **Draw STAT serum Mg level, Chem12**
- 5 **Monitor VS: EKG, BP, SpO₂**
- 6 **100% Oxygen via non-rebreather face mask**
- 7 **If pregnant:** left lateral positioning, fetal monitoring
- 8 **Insert bladder catheter**

DRUG DOSES and treatments

- Calcium gluconate 1 gm IV over 5 minutes (= 4.6 mEq)
- If Ca Gluconate unavailable:
 - Calcium Chloride 250-500 mg IV

Critical CHANGES

Magnesium Levels & Clinical Findings

5–9 mg/dl	Therapeutic
10–12 mg/dl	EKG changes (delayed conduction) Muscle weakness, loss of deep tendon reflexes
15–18 mg/dl	Heart block, respiratory paralysis
>25 mg/dl	Cardiac arrest

13 Respiratory Distress

Hypoxemia, shortness of breath, wheezing, desaturation

START

- 1 **Call for help**
 - ▶ **Respiratory Therapy**
 - Anesthesia**
 - ▶ **Ask:** “Who will be the crisis manager?”
 - ▶ **Crisis manager designates checklist reader**
- 2 **Request code cart, intubation kit**
- 3 **100% oxygen via non-rebreather facemask**
- 4 **Monitor VS: EKG, BP, Saturation**
- 5 **Assure airway patency; auscultate lungs**
- 6 **Establish IV access**
- 7 **If pregnant:** fetal monitoring, left lateral positioning, consider induction when stable
- 8 **Arterial blood gas if $\text{SpO}_2 < 92\%$**
- 9 **Consider chest X-ray**
- 10 **Consider albuterol nebulizer**

Critical CHANGES

CONSIDER

- ▶ Pneumonia ? Aspiration
- ▶ Pulmonary edema
- ▶ Amniotic fluid embolism
- ▶ Pulmonary thromboembolism
- ▶ Asthma exacerbation
- ▶ Pneumothorax
- ▶ Sepsis
- ▶ Magnesium toxicity
- ▶ High epidural level

DRUG DOSES and treatments

Albuterol 2.5 mg with 2.5 ml
Saline via nebulizer

14 Sepsis

Pulse > 120, Temp > 101.3, Leukocytosis

START

- 1 **Call for help**
24 hr doc coverage of other patients
 - ▶ **Ask:** “Who will be the crisis manager?”
 - ▶ **Crisis manager designates checklist reader**
- 2 **Monitor SpO₂, BP, EKG, Pulse, Temp, Fetal Heart Rate**
- 3 **Obtain Laboratory Studies with cultures**
- 4 **Insert Foley; monitor urine output**
- 5 **Rapid crystalloid resuscitation – 2 large bore IV**
- 6 **Broad spectrum antibiotics**
- 7 **Vasopressors for persistent hypotension per anesthesia**
- 8 **Consider CXR, CT scan, Amniocentesis**
- 9 **Consider Consultation: ID, ICU, MFM**

DRUG DOSES and treatments

ANTIBIOTICS

DO NOT DELAY AFTER CULTURES OBTAINED

- ▶ Amp 2gm + Gent 2mg/kg + Clindamycin 900mg
-or-
- ▶ Zosyn 3.375gm

If urosepsis suspected, substitute Ceftriaxone 2gm for above.

If MRSA suspected, 1.5gm Vancomycin + Gentamicin 2mg/kg + Clindamycin 900mg

For PCN allergy:

- ▶ Clindamycin 900mg + Ceftriaxone 2gm
-or-
- ▶ Clindamycin 900mg + Gentamicin 2mg/kg + Vancomycin 1.5gm

LABORATORY studies

STAT

CBC w/ Diff, UA, Blood & Urine cultures, Lactate, DIC screen, Type & Cross

15 Shoulder Dystocia

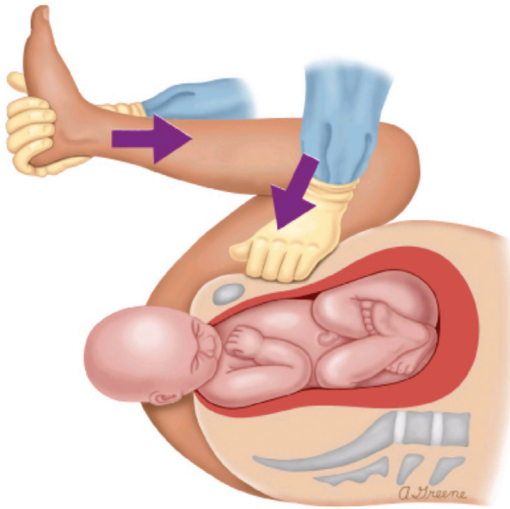
START

- 1 **Call for help**
 - ▶ **Ask:** “Who will be the crisis manager?”
 - ▶ **Crisis manager designates checklist reader**
 - ▶ **Announce:** “Shoulder Dystocia”
- 2 **Overhead page:** “Shoulder Dystocia”
- 3 **Prepare OR**
- 4 **Designate timekeeper**
 - ▶ **State the exact time and announce each minute**
- 5 **Instruct patient:** *breathe, don’t push*
- 6 **Perform maneuvers to release shoulder dystocia (see reverse):**
 - McRoberts (hyperflexion of maternal hips)
 - Apply suprapubic – NOT FUNDAL – pressure
 - Posterior arm release
 - Scapula release
 - Wood’s Corkscrew
 - Rubin’s maneuver
 - Hands & Knees position
- 7 **Perform episiotomy or extend episiotomy**
- 8 **Consider clavicular fracture, abdominal rescue, Zavanelli maneuver (see reverse)**

Critical CHANGES

- ▶ **Avoid** excessive force
- ▶ **Do not** apply fundal pressure
- ▶ Do not persist in any one maneuver if it is not immediately successful
- ▶ Can **repeat** steps if needed
- ▶ **Document** maneuvers, times, names of personnel

McROBERTS MANEUVER



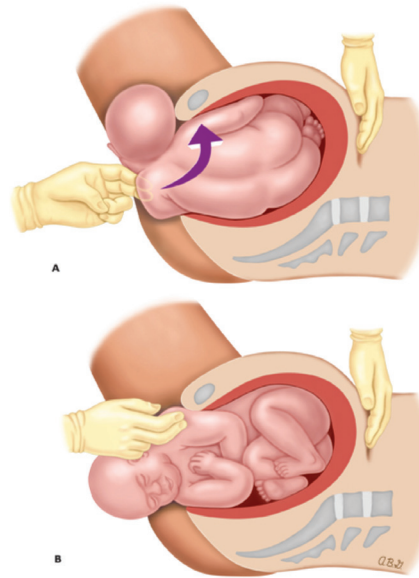
► Suprapubic Pressure

Make a fist. Place it just above the maternal pubic bone. Push the fetal shoulder in one direction or the other.

► McRoberts

Flex the thighs back against the abdomen to open the pelvis.

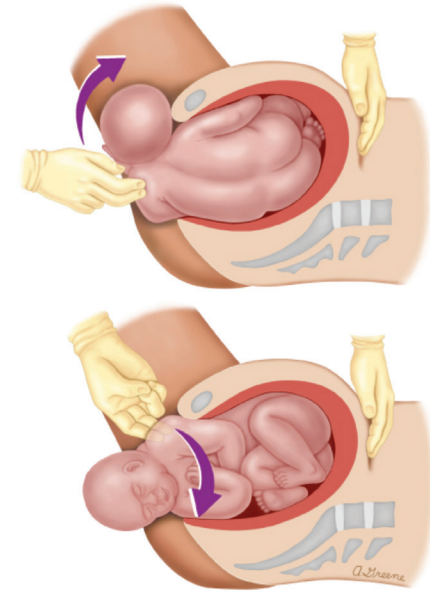
WOOD'S CORKSCREW



► While maintaining pressure as in the Rubin maneuver, a second hand locates the anterior aspect of the posterior shoulder. Apply pressure to rotate the posterior shoulder. Attempt delivery once the shoulders move into the oblique diameter.

► If unsuccessful continue rotation through 180° and attempt delivery.

RUBIN MANEUVER



► Hand is inserted into the vagina and digital pressure is applied to the posterior aspect of the anterior shoulder pushing it towards the fetal chest, rotating the shoulders forward into an oblique diameter.

ZAVANELLI MANEUVER

- Prepare for abdominal delivery.
- Place a fetal scalp electrode.
- Rotate the head back to an occiput anterior position (reversal of restitution).
- 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.
- Insert a catheter into the bladder and proceed with cesarean delivery.

16 Tachycardia - Unstable

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

START

- 1 **Call for help and Code cart**
 - ▶ **Ask:** “Who will be the crisis manager?”
 - ▶ **Crisis manager designates checklist reader**
- 2 **Monitor EKG, Vital Signs, SpO₂**
- 3 **Administer oxygen**
- 4 **Analyze rhythm**
 - ▶ Rule out sinus tachycardia
 - ▶ If wide complex, treat as **VF** → ▷ CHKLST 3
 - ▶ Otherwise: Cardioversion
- 5 **Sedate conscious patients unless deteriorating rapidly**
- 6 **Prepare Defibrillator**
- 7 **Perform synchronized cardioversion**
- 8 **Re-assess rhythm**
 - ▶ Repeat with higher energy as needed
- 9 **Consider expert consultation**
 - ▶ Cardiology, Intensive Care

DEFIBRILLATOR operation

1. Turn monitor/debrillator ON
2. Place electrodes on chest
3. Set to SYNCHRONIZED mode
4. Confirm spike on R wave indicating SYNC
5. Adjust as needed
6. Determine appropriate energy level and select
7. Press CHARGE
8. Press and hold SHOCK
9. Check monitor; if tachycardia persists, increase energy
10. Re-engage SYNC after each shock

BIPHASIC CARIOVERSION ENERGY

Condition	Energy Level Progression
Narrow, regular	50J/100J/150J/200J
Narrow, irregular	120J/150J/200J
Wide, regular	100J/150J/200J
Wide, irregular	Treat as VF : ▷ CHKLST 3

- ▶ If cardioversion needed and impossible to synchronize shock, use high energy unsynchronized shocks at 200 J
- ▶ If cardiac arrest, go to :
 - **VF/VT** ▷ CHKLST 3
 - **Asystole/PEA** ▷ CHKLST 4

17 Uterine Inversion

START

- 1 **Call for help**
 - ▶ **Ask:** “Who will be the crisis manager?”
 - ▶ **Crisis manager designates checklist reader**
- 2 **Discontinue uterotonic drugs**
- 3 **Large bore IV access**
- 4 **Apply monitors (EKG/BP/SpO₂)**
- 5 **Administer oxygen**
- 6 **Order Mass transfusion protocol**
 - ▶ Blood Bank ext. 6091
- 7 **Leave placenta attached**
- 8 **Manual reduction:** Upward fundal pressure; if constriction ring palpable, apply pressure distally to push fundus through ring
- 9 **If unsuccessful, uterine relaxants:**
NTG, Terbutaline, Inhalation Anesthesia
- 10 **Once reduced, keep hand in uterus, begin oxytocin; administer antibiotics**
- 11 **If manual reduction, unsuccessful, consider Laparotomy: **Huntington Procedure** (at right)**

DRUG DOSES and treatments

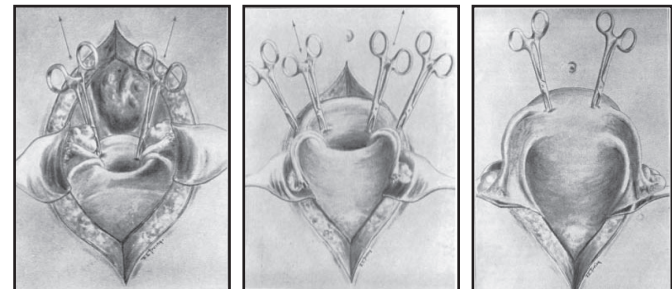
Nitroglycerin: 2 ml (10 mg) in 250 ml NS = 40 mcg/ml Administer 2 ml (80 mcg) or up to 200 mcg

Terbutaline: 0.25 mg IV or SC

Atropine: 0.5 mg IV for bradycardia

HUNTINGTON PROCEDURE

- ▶ Make an abdominal incision.
- ▶ Locate the cup of the uterus formed by the inversion.
- ▶ Dilate the constricting cervical ring digitally.
- ▶ Stepwise traction on the funnel of the inverted uterus or the round ligament is given with Allis forceps or traction suture.
- ▶ Reapplied progressively as fundus emerges.
- ▶ If unsuccessful, bisect the constriction ring.



Huntington et al. Am J Obstet 15(1):34-40, 1928