OBSTETRIC EMERGENCIES
Overview:

• **Obstetric emergencies**
  - Cause damage and death to mothers and babies.
  - They require quick, decisive and effective action from the staff immediately available.

• The causes of maternal death:
  1. Haemorrhage
  2. Hypertensive Disorders
  3. Unsafe abortion
  4. Sepsis/infections
  5. Anaemia
  6. Embolism (Thrombotic & Amniotic Fluid)
TRENDS IN DIRECT CAUSES OF MATERNAL DEATHS-KATH (1998-2007)

- Haemorrhage
- Hypertensive diseases
- Abortions
- Genital tract infections
- Obstructed labour/Ruptured uterus
- Ectopic pregnancy

Kwawununu et al., 2011
# Principles Of Managing Obstetric Emergencies

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<th>Avoidance</th>
<th>Assessment</th>
<th>Action</th>
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<td>Address and manage risks</td>
<td>Need for ABC</td>
<td>Resuscitate as necessary</td>
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<tr>
<td>Adopt good obstetric practice</td>
<td>Obvious causes</td>
<td>Intravenous access (2 × 14 gauge)</td>
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<td>Oxygen</td>
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<td>Remove obvious causes</td>
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<td>Seek and manage other causes</td>
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</table>
Management:

• If *breathing spontaneously*:
  – She must be moved to the left lateral position

• If there is *no spontaneous respiration*:
  – Check the circulation at the carotid or femoral pulse prior to chest compression if necessary.
  – Artificial respiration is required if managing a case alone.
  – Always make sure an Ambu-bag is ready and functioning
  – Obtain as much help as is possible immediately.
  – Summon anesthetic team immediately.
Obstetric Haemorrhage

• Excessive bleeding in pregnancy
  – Antepartum
  – Intrapartum
  – Postpartum
Managing severe haemorrhage

1. Call For Help:
   - Senior Obstetrician
   - Anaesthetist

2. Establish IV line with a wide bore cannula

3. Take blood for grouping and cross-matching into a good bottle and label it even if you are going to refer the case

4. Notify blood bank and send the sample

5. Set up isotonic IVF

6. Consult haematologist if necessary
Post Partum Haemorrhage

Predisposing factors
- Antepartum haemorrhage
- Multiple pregnancy
- Grandultiparity
- Hypertension disorders in pregnancy and used in management (MgSO4, Nifedipine)
- Prolonged labour
- Caesarean Section
Postpartum Haemorrhage

Causes

- Uterine atony
- Lacerations/Tears
  - Vaginal tears
  - Cervical tears
  - Ruptured uterus
  - Caesarean Section
- Retained placenta and placental fragments.
- Coagulopathy
- Uterine inversion
- Other causes
  - Infection - 2° PPH
Management

Uterine Atony

- Rub up Contractions and carry out bimanual compression if necessary
- Oxytocin - 10 units IV
- Misoprostol (PgE1) 1000ug (1mg): 5 tabs rectally
Postpartum Haemorrhage: management

❖ Rub up uterine contraction
❖ Call for help -> inform superiors
❖ Reassure patient to allay anxiety
❖ Insert two large bore IV lines
❖ Take blood for
  ❖ grouping and cross-matching
  ❖ Blood count
  ❖ bedside clotting time
❖ Give an oxytocic: (oxytocin, cytotec)
❖ Pass catheter to empty the bladder
Management of PPH

Placenta out

- Check completeness (membranes and lobes)
- Continue to rub up uterine contraction
- Continue oxytoxin infusion
- Examine for genital tract trauma
  - Perineal laceration
  - Vaginal laceration
  - Cervical lacerations
  - Rupture
Management of PPH

- Examine under anaesthesia
  - Evacuate retained products under GA
  - Repair lacerations
  - Stepwise devascularisation
  - Internal iliac artery ligation
  - B-Lynch,
  - “foley tourniquet”,
  - packing
  - Hysterectomy
PPH: FUNDAL MASSAGE

One hand remains cupped against the uterus at the level of the symphysis pubis to support the uterus.

The other hand is cupped to massage and gently compress the fundus toward the lower uterine segment.
PPH: BIMANUAL COMPRESSION
Rupture of Uterus

Prepartum, intrapartum or postpartum

Two types
- True rupture
- Dehiscence of scar
UTERINE RUPTURE

• **ETIOLOGY:**
  • Prior cesarean delivery especially classical cesarean scar
  • Rupture of myomectomy scar
  • Precipitous labor
  • Prolonged labor with cephalopelvic disproportion
  • Excessive oxytocin /cytotec stimulation
  • Abdominal trauma
  • Grand multiparity
  • Iatrogenic
    – intrauterine manipulations
    – Direct uterine trauma-forceps or curettage
Rupture of Uterus

True Rupture
- Contractions stop
- Continuous pain
- Tender abdomen
- Fundus ill-defined
- Fetal parts easily palpable
- PV Bleeding
- Fetal heart dips or absent fetal heart

Scar Dehiscence
- Dehiscence may be silent – no bleeding
- Fetal distress
- Haematuria
- Vague uterine outline
- Failed induction
Rupture of Uterus

- High Index of suspicion in grandmultiples and in women with scarred uterus
- All cases of Ante and Intra partum haemorrhage must exclude rupture
- Laparotomy if suspected
- Repair or Hysterectomy?
Stepwise Devascularisation
• Uterotonic agents should be the first-line treatment for postpartum hemorrhage due to uterine atony.
• Management may vary greatly among patients, depending on etiology and available treatment options and often multidisciplinary approach is required.
• When uterotonicics fail following vaginal delivery, exploratory laparotomy is the next step.
Hypertensive Disorders:

- **Pre-eclampsia**
  - Is a disease of pregnancy characterized by a blood pressure of 140/90 mmHg or more on two separate occasions after the 20th week of pregnancy in a previously normotensive woman.
  - Accompanied by significant proteinuria (>300mg in 24 hours)

- **Eclampsia**
  - A same condition that has proceeded to the presence of convulsions.

- **Imminent Eclampsia or Fulminating Pre-eclampsia**
  - The transitional condition characterized by increasing symptoms & signs.
Incidence & Epidemiology:

• **Eclampsia**
  
  — It may occur
    
    ➢ Antepartum – 40%
    
    ➢ Intrapartum – 20%
    
    ➢ Postpartum – 40%

• **Severe Pre-eclampsia**
  
  — A blood pressure of 160/110 mmHg or more.
Symptoms Of Severe Pre-Eclampsia

- Frontal Headache
- Visual Disturbance
- Epigastric Pain
- General Malaise & Nausea
- Restlessness
Signs Of Severe Pre-Eclampsia

» Agitation
» Hyper-Reflexia
» Facial & Peripheral Oedema
» Right Upper Quadrant Tenderness
» Poor Urine Output
Treatment Of Eclampsia:

1. Turn the woman onto her side with her head down
2. Ensure the airway is protected
3. Give oxygen
4. Give magnesium sulphate intravenously over a few minutes.
5. Progress to stabilizing the woman’s condition
6. The mother’s condition needs to be stabilized urgently, before considering delivery in antenatal cases
7. Senior obstetric and anaesthetic staff must be involved

8. Antihypertensive
   - Hydralazine
   - Labetalol

9. Anticonvulsants
   - Magnesium Sulfate

10. Fluid Balance
    → To avoid pulmonary and cerebral oedema, Central Venous Pressure (CVP) INPUT & OUTPUT
Indications For Urgent Delivery

1. Blood pressure persistently at 160/100 mmHg or more with significant proteinuria
2. Elevated liver enzymes
3. Low platelet count
4. Eclamptic Fit
5. Renal function impairment
   1. Raised serum uric acid/urea
   2. Anuria
6. Significant foetal distress
HELPP Syndrome

H - Haemolysis
E - Elevated
L - Liver Enzymes
L - Low
P - Platelets

→ 5 to 10% of cases of severe pre-eclampsia

→ May be associated with disseminated intravascular coagulation, placental abruption & foetal death.
Hypertensive Disorders

1. Fulminating pre-eclampsia & eclampsia are dangerous
2. Recognize women at risk
3. Manage minor hypertensive problems to prevent progression
4. In the serious case:
   - Prevent or control convulsion
   - Bring down the blood pressure
   - Minimize or avoid organ damage
   - Control coagulopathy
   - Avoid fluid overload
   - Deliver a healthy baby safely
ECLAMPSIA

• Pre-eclampsia with grand mal seizure
Laboratory investigations (summary)

• Full blood count: Hb, WBC, platelet count
• Coagulation profile
• Liver function tests: bilirubin, liver enzymes
• Renal function tests:
  – Serum uric acid
  – Blood urea and creatinine
• Urine analysis: Urine protein -> Proteinuria > 2+
Management of Eclampsia

- Call for help – Medical Emergency Team
- Resuscitate if required (ABC)
  - Airway clear
  - IV line
- Protect the woman from injury
- Control convulsion
  - Magnesium sulphate
- Lower blood pressure:
  - IV Hydralazine or sub-lingual Nifedipine
- FHR monitoring (CTG or intermittent auscultation)
Management: Magnesium Sulphate

• Loading dose: 14g:
  • 4g IV and 10 g IM (5g to each buttock)

• Then 5g every 4 hours for 24 hours after delivery or after the last fit
Management:

Lower BP

• **IV Hydralazine:**

  Administer under medical orders
  
  – an initial dose of 5 mgs slowly intravenous,
  
  – a repeated dose of 5mg at 20-30 minutes intervals can be administered,
  
  – up to a maximum of 3 doses.

• **Sublingual Nifedipine 10mg every 30 minutes** if conscious
Management

• IV fluids to expand intravascular fluid volume
• IV broad spectrum antibiotics
• Pass Foley's catheter to monitor urine output
• Monitor respiration:
  – should be at least 16 cycles per minute
Delivery

• Delivery required after fit
• Mode of delivery depends on obstetric factors
  – Induction
  – Emergency C/S
Postnatal Care Management

• Should be closely observed for first 24 hours or until stable
• Mag Sulphate ceased 24 hrs after birth or last fit
• Hourly urine output measurement for 24 hrs or until output normal
• Hourly BP for 4 hours or until stable
• Risk of seizure and increasing BP is still significant over next 3 days
Prognosis

• Recovery often complete
• 25% re-occurrence of eclampsia in future pregnancies
• Increased risk of essential hypertension
Conclusion: Eclampsia

- Very frightening situation
- Provide one-to-one midwifery care and support
- Full explanation of management and expected outcomes
- Include partner and family in all discussions
- Contact social work support for accommodation/child care/family transport etc
Emergency Pack

• Helpful for the emergency treatment of an acute BP elevation

• The pack should contain
  – Procedures for drug dosages and administration
  – IV lines and fluid
  – Drugs – Hydralazine, MgSO4 & Calcium Gluconate
  – Needles etc
  – Documentation and charts as required
The Collapse Obstetric Patient

- Complete or partial loss of consciousness is very uncommon in pregnancy
Causes Of Loss Of Consciousness

1. Simple Faint
2. Epileptic Fit
3. Hypoglycaemia
4. Profound Hypoxia
5. Intracerebral Bleeding
6. Cerebral Infarction
7. Cardiac Arrhythmia Or Myocardial Infarction
8. Pulmonary Embolism
9. Anaphylaxis
10. Septic Shock
11. Anaesthetic Problems
12. Major Haemorrhage
13. Eclampsia
14. Amniotic Fluid Embolus
15. Uterine Inversion
Basic Life Support Skills

1. Shake & Shout
2. Airway
3. Breathing
4. Circulation
5. Look for hypovolaemia (Tachycardia, Pallor)
6. Aggressive Fluid Replacement
7. Stop Haemorrhage
8. Stabilize and seek a cause
9. Senior multi-disciplinary assistance throughout
Pulmonary Embolism (PE)

— Occurs in association with approximately 3:1000 pregnancies.

— Two thirds of cases of puerperium.
Diagnosis of Pulmonary Embolism:

1. Symptoms

   - Acute Breathlessness
   - Pleuritic Chest Pain
   - Haemoptysis
2. Signs

- Tachycardia
- Cyanosis
- Hypotension
- May be Confusion (hypoxia)
3. Investigations

- Reduced oxygen tension in arterial blood
- Electrocardiogram lead 3
- Large Q waves, inverted T waves
- Chest X-ray
- Ventilation perfusion scan
Clinical Presentation Of Amniotic Fluid Embolism
1. Symptoms

- Sudden severe chest pain
- Dyspnea
2. Signs

- Hypotension
- Tachycardia
- Pulmonary Oedema
- Peripheral Shutdown
- Haemorrhage due to coagulation failure
- May be seizure secondary to hypoxia or cardiac arrest.
3. Investigations

- Electrocardiogram – right ventricular strain
- Abnormal coagulation screen
- Reduced oxygen tension in arterial blood
4. Treatment

- Urgent resuscitation and circulatory support
- Intubation and 100% oxygen
- Treat the coagolupathy aggressively
- Correct acidosis
- Dopamine and steroids may be useful
- Transfer to intensive care unit
UTERINE INVERSION

Uncommon problem

• Results from inappropriate fundal pressure or
• Excessive traction on umbilical cord especially if placenta accreta is present
• Mass in the vagina
• Uterine atony
• Maternal shock and hemorrhage
• Volume replacement
• Analgesia for the procedure
• Uterine relaxation for replacement
• Oxytocics following replacement
FETAL HEART RATE

- Baseline fetal heart rate, variability, decelerations or accelerations
- Normal FHR: 110-160 bpm
- Tachycardia: Maternal fever, infection, terbutaline, atropine, hyperthyroidism, tachyarrythmia, hypoxemia
- Bradycardia: Fetal autonomic response to baroreceptor or chemoreceptor stimulation
- Fetal cardiac output: Rate dependent
- Variability: Most reliable index of fetal well being; variability is baseline fluctuations in FHR over 2 cycles/min
- Can be absent, minimal (<5 bpm), moderate (6-25 bpm) or marked (>25 bpm)
NON REASSURING FETAL HEART RATE (INTRAPARTUM)

• **UMBILICAL CORD PROLAPSE:**
  – Acute fetal bradycardia
  – Cord palpable in vagina
  – Membrane rupture with head not well applied to cervix—High station/breech presentation
  – Push presenting part away from cervix
  – Feel the bladder
  – Emergency delivery; Caesarean delivery if delivery not any time soon.
NON REASSURING FETAL HEART RATE

- **UMBILICAL CORD COMPRESSION:**
  - Variable decelerations
  - Nonreassuring if slow return to baseline or severe (<60 bpm from baseline for over 60 seconds) and repetitive
  - May be associated with ↓ amniotic fluid from ruptured membranes or oligohydramnios
  - Changing maternal position, oxygen, amnioinfusion, discontinuation of oxytocin may help
  - Expeditious delivery may be necessary
  - Regional/GETA depending on clinical scenario
NON REASSURING FETAL HEART RATE

- **UTEROPLACENTAL INSUFFICIENCY:**
- Late decelerations
- Cause for concern if repetitive
- Postdates, preeclampsia, diabetes, IUGR
- Uterine resuscitation: change of maternal position, IV fluids, oxygen, discontinuation of oxytocin and administration of tocolytic agents (terbutaline)
- Regional/GETA depending on clinical scenario
- Maternal mortality more common with GETA
- ACOG: Cesarean deliveries performed for a nonreassuring fetal heart rate pattern do not necessarily preclude the use of regional
NON REASSURING FETAL HEART RATE (AT DELIVERY)

- **SHOULDER DYSTOCIA:**
- Postterm pregnancy, diabetes, maternal obesity, macrosomia and shoulder dystocia in previous pregnancy
- Extension of episiotomy/flexion of mother’s legs against abdomen, suprapubic pressure, fractures of clavicles
- Anticipation: Epidural-relaxed perineum
- C/D
NON REASSURING FETAL HEART RATE

- **BREECH (HEAD ENTRAPMENT):**
  - True obstetric emergency
  - Smaller body pushed through partially dilated cervix trapping aftercoming head
  - Vaginal breech delivery—Discouraged by ACOG
  - 5% vs. 1.6% deaths—Vaginal vs. C/D (Study in 2000 women)
  - Incisions in cervix to enlarge opening or skeletal muscle and cervical relaxation or CD
  - Epidural—prevents early pushing before cervix is fully dilated and relaxes the perineum
  - GETA may be necessary for uterine and perineal relaxation
Preterm

PROM
MANAGEMENT

• Erythromycin should be given for 10 days following the diagnosis of PPROM

• Co-amoxiclav should be avoided in women at risk of preterm delivery due to increased risk of neonatal necrotising enterocolitis.“

• Antenatal corticosteroids should be administered in women with PPROM between 24 (28) and 34 weeks.
Management

• Tocolysis in women with PPROM is not recommended because this treatment does not significantly improve perinatal outcome.
• Delivery should be considered at 34 weeks of gestation.
  – Where expectant management is considered beyond this gestation, women should be informed of the increased risk of chorioamnionitis and the decreased risk of respiratory problems in the neonate.
Home or Hospital?

- There are insufficient data to make recommendations for home and outpatient monitoring rather than continued hospital admission in women with PPROM.
Management

• Amnioinfusion during labour is not recommended in women with preterm rupture of membranes.
  – There is insufficient evidence to recommend amnioinfusion in very preterm PPROM as a method to prevent pulmonary hypoplasia.
  – There is insufficient evidence to recommend fibrin sealants as routine treatment for second-trimester oligohydramnios caused by PPROM.
<table>
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<tr>
<th>Gestational Age</th>
<th>Management</th>
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<tr>
<td>Term (37 weeks or more)</td>
<td>• Proceed to delivery, usually by induction of labor</td>
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<td>• Group B streptococcal prophylaxis recommended</td>
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<tr>
<td>Near term (34 weeks to 36 weeks completed)</td>
<td>Same as for term</td>
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<tr>
<td>Preterm (32 weeks to 33 weeks completed)</td>
<td>• Expectant management, unless fetal pulmonary maturity is documented</td>
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<tr>
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<td>• Group B streptococcal prophylaxis recommended</td>
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<td></td>
<td>• Corticosteroid recommendation</td>
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<td></td>
<td>• Antibiotics recommended to prolong latency if there are no contraindications</td>
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<tr>
<td>Preterm (28 weeks to 31 weeks completed)</td>
<td>• Expectant management</td>
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<tr>
<td></td>
<td>• Single-course corticosteroid use recommended</td>
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<tr>
<td></td>
<td>• Tocolytics—not recommended</td>
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<tr>
<td></td>
<td>• Antibiotics recommended to prolong latency</td>
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<tr>
<td>Less than 24 weeks* (inevitable abortion)</td>
<td>• Patient counseling</td>
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<tr>
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<td>• Expectant management or induction of labor</td>
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<td>• Corticosteroids are not recommended</td>
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<td>• Antibiotics—there are incomplete data on use in prolonging latency</td>
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SHOULDER

DYSTOCIA
Factors associated with shoulder dystocia

• Pre-labour Intrapartum
  – Previous shoulder dystocia
  – Prolonged first stage of labour
  – Macrosomia >4.5kg
  – Secondary arrest
  – Diabetes mellitus
  Prolonged second stage of labour
  – Maternal body mass index >30kg/m2
  Oxytocin augmentation

• Induction of labour
  Assisted vaginal delivery
# Factors associated with shoulder dystocia

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<td>• Induction of labour</td>
<td>• Assisted vaginal delivery</td>
</tr>
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</table>
• All birth attendants should be aware of the methods for diagnosing shoulder dystocia and the techniques required to facilitate delivery.
• Birth attendants should routinely look for the signs of shoulder dystocia.
Shoulder dystocia should be managed systematically

• Immediately after recognition of shoulder dystocia, additional help should be called.
• The problem should be stated clearly as ‘this is shoulder dystocia’ to the arriving team.
• Fundal pressure should not be used.
• McRoberts’ manoeuvre is a simple, rapid and effective intervention and should be performed first.
• Suprapubic pressure should be used to improve the effectiveness of the McRoberts’ manoeuvre.
• An episiotomy is not always necessary.
Algorithm for the management of Shoulder Dystocia

CALL FOR HELP
Midwife Coordinator, additional midwifery help, experienced obstetrician, neonatal team and anaesthetist

McROBERTS’ MANOEUVRE
(Thighs to abdomen)

SUPRAPUBIC PRESSURE
(and routine axial traction)

Consider episiotomy if it will make internal manoeuvres easier

Try either manoeuvre first depending on clinical circumstances and operator experience

DELIVER POSTERIOR ARM

INTERNAL ROTATIONAL MANOEUVRES

Inform consultant obstetrician and anaesthetist

If above manoeuvres fail to release impacted shoulders, consider

ALL FOURS POSITION (if appropriate)

OR

Repeat all the above again

Consider cleidotomy, Zavanelli manoeuvre or symphysiotomy

Discourage pushing
Lie flat and move buttocks to edge of bed

to be reviewed by neonatologist after birth and referred for Consultant Neonatal review if any concerns
DOCUMENT ALL ACTIONS ON PROFORMA AND COMPLETE CLINICAL INCIDENT REPORTING FORM.
Manoeuvres

• Manoeuvres should be demonstrated in direct view, as they are complex and difficult to understand by description alone.
RCOG Green-top Guideline No. 42

The McRoberts' manoeuvre

Suprapubic pressure
Delivery of the posterior arm (from the SaFE study)
After delivery

• Birth attendants should be alert to the possibility of postpartum haemorrhage and severe perineal tears.

• The baby should be examined for injury by a neonatal clinician.

• All maternity staff should participate in shoulder dystocia training at least annually