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PartoMa

A Pocket Guide for Safe and Respectful Childbirth Care



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Colour codes and symbols

UNCOMPLICATED	Routine care		
WARNING	Attention and treatment		
DANGER	IMMEDIATE ACTION!		
 A Special attention * More information further down on the same page in a grey field Consider referral to higher-level hospital 			

Abbreviations

ANC antenatal care APH antepartum haemorrhage ARM artificial rupture of membranes ART antiretroviral treatment BP blood pressure Bpm beats per minute CS caesarean section CTC care, testing and counseling FHR fetal heart rate GCS Glasgow Coma Scale HIV human immunodeficiency virus Hr hour IM intramuscular IV intravenous Min minutes MmHg millimetres of mercury PPE personal protective equipment PPH postpartum haemorrhage PPROM preterm PROM PROM prelabour rupture of membranes
PV per vaginal examination
RR respiratory rate
Sec seconds
SRM spontaneous rupture of membranes
Temp temperature
VBAC vaginal birth after CS



The PartoMa guidelines 2022 are approved by Tanzania's Ministry of Health, Community Development, Gender, Elderly and Children. The guidelines represent achievable essential care at Mwananyamala Regional Referral Hospital, Amana Regional Referral Hospital, Temeke Regional Referral Hospital, Sinza Hospital and Mbagala Rangi Tatu Hospital.

RIGHTS OF EVERY WOMAN AND BABY



A No harm and no ill-treatment. No shouting, hitting, slapping, pushing, pinching, humiliation, threats or blaming



▲ If in doubt, consult with colleagues and use guidelines. Surgeries and maneuvres need hands-on training and supervision





Kind, polite and truthful conversation about what is done and why. Honest feedback on findings. No procedures on mother or baby without mother's consent



Encourage mother to choose position during labour and to have a birth companion. Encourage mother to drink and eat throughout labour.



Equity

Essential physical resources

Freedom and

autonomy

A No discrimination. No detainment, extortion, bribes or denial of treatment. Keep mother and baby together



A No exposure of mother's nakedness or disclosure of personal information. Cover woman and use screens during exams

PART 1 Routine care

Privacy and

confidentiality

PARTOGRAPH AND PartoMa USE

AN EXAMPLE OF CORRECT PARTOGRAPH USE

A The partograph must be used for ALL women in active labour, and also in second stage. WHO (2018) recommends not to start active phase before 5 cm cervical dilatation.





Each assessment of a woman in labour requires analysis of the partograph as a whole by asking:

- 1. Is mother in a good condition?
- 2. Is baby in a good condition?
- 3. Is progress as expected?

Assessments are described further on page 5.

Recordings in latent phase

Skilled birth attendants have decided that the observation sheet is applied during latent phase, which can be found in the maternity wards. The partograph is first used in active labour.

First recording in active phase

Active phase of labour starts when cervix is dilated 4-5 cm AND regular painful contractions. Start by plotting cervical dilatation on the alert line. Routine surveillance is further described on pages 4-6.

ADMISSION ASSESSMENT FOR ALL WOMEN

Assess obstetric risks

See the ANC card and ask the woman about:

- Vaginal bleeding in current or previous pregnancy
- Previous CS
- Gestational age (preterm or postterm baby?) Estimated by ultrasound before 24 weeks gestation OR last menstrual period OR fundal height at ANC or on admission
- Other obstetric concerns

For example: Reduced or absent fetal movement in last 24 hrs, meconium if membranes ruptured, PROM, breech, twin pregnancy, hypertension, obesity, anemia, diabetes, HIV, TB, suspicion of COVID-19 or other infections, mother's age (less than 18 years or more than 40 years)

Assess symptoms and appearance of the mother

For example: Headache, blurred vision, severe general body weakness, jaundice, edema, cyanosis, difficulty in breathing, anaemia

Assess vital signs

RR, Pulse, BP, Temp, FHR, Oxygen saturation

Do abdominal exam*

Do vaginal exam (page 5)

Start observation of mother, baby and progress:

In latent phase of labour: Start observation sheet In active labour: Start partograph (page 3)

Provide caring support

Inform the woman and start conversation:

- The plan for her birth
- Alert staff if increased vaginal bleeding, pain between contractions, more painful contractions, rupture of membranes, absent fetal movement, other needs or concerns

▲ If any fetal or maternal risk is identified, see the relevant pages of the PartoMa guidelines, and ensure that a senior doctor sees the patient

*ABDOMINAL EXAM





Palpate top of uterus (fundus) to exclude breech presentation. If breech, see page 18 Measure symphysis fundal height to confirm size of uterus



Palpate both sides of uterus to determine location of baby's back, and assess if it is twins



Determine presenting part (for example vertex, breech or shoulder), and descent (level of head, in fifths of head above brim)



Palpate abdomen for 10 minutes and assess duration and frequency of contractions. If too busy, then assess for 5 min. Also, train mother to assess herself



FHR is best heard at the top of the baby's back

Auscultate with handheld Doppler or Pinard at the end of a contraction for 1 min. Confirm that it is FHR and not maternal pulse

SURVEILLANCE DURING LABOUR

LATENT PHASE

Regular painful contractions, cervix less than 4-5 cm. Latent phase is documented on the observation sheet.

Every 4 hrs AND when changes occur (for example SRM or increasing contractions):

BP, Pulse, FHR, Abdominal exam (*lie, presentation*), contractions, PV* Signs of infections? (*page 13*)

If obstetric risks (for example preterm or postdate, previous CS or poor fetal movements): FHR every 1-2 hrs

A If latent phase longer than 12-24 hrs:

If any risk factors OR ruptured membranes, consider induction (page 17). If no risk factors, consider rest with pain relief. Also, false labour must be considered (urinary tract infection, sexual transmitted infection, abruptio placenta, uterotonics/herbs taken at home) FIRST STAGE, ACTIVE PHASE Cervix 4-9 cm AND regular painful contractions Active phase is documented on partograph (page 3)

Every ½ hr (at least every 1 hr): FHR Every 2 hrs: Urine output (spontaneously is best) Every 4 hrs: BP, Pulse, Temp, Contractions, PV*

SECOND STAGE, ACTIVE PHASE
Cervix fully dilated (10 cm)
Second stage is documented on partograph (page 3)
FHR: Every 15 min before pushing has started After every contraction when pushing

Contractions, PV: Every ½ hr* **BP. Pulse:** Assess if 4 hrs since last assessment

▲ Urination before pushing to create space for baby, and guard perineum (page 21)

▲ Do NOT use fundal pressure or routine episiotomy. It does not accelerate birth, but it causes harm

*VAGINAL EXAM (PV)

It should preferably be the same health provider doing each of a woman's vaginal exams.

What to assess:

- 1. Cervical dilatation Do not stretch cervix more open than it is
- 2. State of cervix Effacement, thin/thick, rigid/soft, oedematous
- 3. State of membranes (*intact or ruptured*) If membranes have ruptured, assess colour and smell of liquor
- 4. Determining presenting part (for example vertex, breech or shoulder)
- 5. The presenting part's descent (in relation to ischial spines, which is station 0) and position (for example occiput-anterior, occiput-posterior, frank breech complete breech, footling breech, transverse lie)

▲ If vaginal bleeding, no digital vaginal exam before placenta praevia is ruled out by ultrasound (page 14)

Assessing pelvic adequacy has limited diagnostic value. True cephalopelvic disproportion (CPD) is diagnosed by trial of labour and is an uncommon condition (pages 11 and 16)



CARE AFTER BIRTH

IMMEDIATELY AFTER BIRTH OF BABY

Mother: Active management of third stage

(IM Oxytocin 10 units, controlled cord traction, uterine massage) Bladder full? (encourage empty bladder)

Baby: Not crying or not breathing? (page 22) Apgar score* (after 1 min and 5 min) Cord clamping (if baby is well, delay 2 min) Skin-to-skin with mother (at least first hr) Breastfeeding (should start within 1 hr)

AFTER BIRTH OF PLACENTA

Mother: Vaginal bleeding above 500 ml? (page 15) Perineal/genital tears? (page 21) Placenta/membranes complete?(page 15)

1 HR AFTER BIRTH

Baby: Head-to-toe examination Exclude malformations (cleft palate, spina bifida, anorectal malformation) IM Vitamin K 1 mg (if weight less than 1500g, give 0.5 mg) Ensure that breastfeeding has started

FIRST 6 HRS AFTER BIRTH

- Mother: General condition and vaginal blood loss (assess every 30 min, PPH page 15) Palpate uterus (uterine massage if needed) Pulse, BP, Temp Bladder full? (encourage urination)
- Baby: Breathing, colour and temperature Tetracycline eye ointment Cord bleeding?

A Teach mother to assist in observing, fundal height, vaginal bleeding and wellbeing of baby. Teach mother to do uterine massage

BEFORE DISCHARGE

Mother:	Pulse, BP Vaginal discharge (blood loss and lochia) Ensure urination Examine breast Give instructions**
Baby:	General condition Birth weight Assure timely and effective breastfeeding
\rm Кеер	baby skin-to-skin as much as possible

*APGAR SCORE

	0	1	2
Appearance	e Blue/pale	Blue/pale limbs	Pink body
	all over	and pink body	and limbs
Pulse (bpm)	Absent	Less than 100	100 or more
Grimace	No response	Grimaces when	Cries when
	to stimulation	stimulated	stimulated
Activity	None	Some flexion	All limbs
			flexed
Respiration	Absent	Weak	Strong



▲ If not breathing, start bag-mask ventilation WITHIN the first minute (page 23)

To assess if the baby is pale or pink, look at oral mucosa, nail beds and palms and soles.

5 min Apgar score less than 7 indicates asphyxia and the baby needs close monitoring after birth.

**** INSTRUCTIONS TO MOTHER**

1. Danger signs for mother

- severe bleeding OR severe abdominal pain
- fever OR foul smelling vaginal discharge
- difficult or fast breathing
- edema with headaches or blurred vision
- painful, red and severely swollen breasts
- leakage of urine OR painful urination
- signs of postpartum depression

2. Danger signs for baby

- not feeding well or vomiting
- inactivity (movement only when stimulated)
- excessive crying
- convulsions
- difficult or fast breathing
- fever or low temperature
- umbilical cord redness, bleeding, pus discharge
- jaundice
- diarrhea
- 3. Advice on breastfeeding and good hygiene
- 5. Family planning counselling
- **6. Summary of the birth** (including interventions and their indications, test reults etc.)

PAIN RELIEF

PAIN RELIEF DURING LABOUR

Respectful, caring and encouraging support and ambulation are often sufficient to cope with pain (page 2)



If distressed by pain:

- Assess FHR, contractions, PV (cervical dilatation) (if pain between contractions, see page 14)
- Encourage walking or most comfortable position
- Encourage breathing techniques

If severely distressed by pain **AND** more than 4 hrs to birth: Offer IM Pethidine 100 mg, single dose

▲ If Pethidine is given within 4 hrs before birth, newborn baby may have poor breathing (page 22). Antidote: IV Naloxone 0.1 mg/kg body weight.

PAIN RELIEF AFTER CS

Use a combination of: Opioid **AND** NSAID **AND** Paracetamol

For example:

- IM Pethidine 100 mg 4-6 times daily AND

- IM Diclofenac 75 mg 2 times daily or ORAL Diclofenac 100 mg 2 times daily AND

- ORAL/RECTAL/IV Paracetamol 1g 4 times daily

▲ Opioid MUST be part of the combination for at least 24 hrs after CS. Optimal pain relief is a crucial part of respectful caring support, and it enables the mother to breastfeed. Monitor vital signs and pain levels for optimal pain management

PAIN RELIEF DURING PERINEUM REPAIR

Ensure anaesthesia by local infiltration and/or pudendal block.

Total maximum dosage of lidocaine must not exceed 40 mL.

Local infiltration:

10-20 mL 0.5% lidocaine solution without adrenaline

Pudendal block:

10 mL 0.5% lidocaine solution just below the tip of the ischial spine (10-15 mL in each site)

A Never inject lidocaine IV. Therefore, do not inject if blood is aspirated.

For guarding and repair of perineum, see page 22

Pudendal block (perineal approach):





Identify the tip of the ischial spine through the skin or by vaginal examination

The needle is inserted medial to the tip of the ischial spine in an angle parallel to the vagina, until it touches the ischial spine. After ensuring that no blood is aspirated, inject 10 mL of lidocaine

Repeat the procedure on the opposite side, and wait for 2 min.

INFECTION PREVENTION AND MANAGEMENT



Screen for infections on admission

For example HIV*, COVID-19**, TB, malaria, urinary tract infection (*rule out pyelonephritis*) If fever, see page 13



Clean hands Handwashing OR alcohol-based handrub before touching patient, before procedures, after procedures, after touching patient, and after touching patient's surroundings



Personal protective equipment (PPE)

Staff must wear mask when dealing with patients, and face shield if available



Clean birthing area



Proper and immediate handling of waste

A Post-exposure prophylaxis within 2 hrs if exposed to blood OR other potentially infectious body fluids: Wash exposed area and report to CTC for counseling

* HIV, prevention of transmission to baby

On admission

-HIV test of all women

-If HIV positive:

1. Continue current ART medication OR start TLD single pill regime *(Tenofovir, Lamivudine, Dolutegravir)* 2. Assess latest viral load results

During labour

▲ Vaginal birth with all procedures deemed necessary is preferable, unless: viral load above 1000 copies/mL OR no ART OR poor ART adherence

-Provide supportive care AND infection prevention -Minimise invasive procedures (*for example vaginal examinations and ARM before 7 cm dilation*) -Avoid severely prolonged labour (page 11)

Treatment of baby after birth

- If high risk baby (no ART OR ART less than 4 weeks OR viral load above 50 copies per ml): Enhanced postnatal prophylaxis (ePNP)
- If low risk baby: ORAL Nevirapine 1.5mls (15mg) for 6 weeks (*if birthweight below 2500g: 1.0ml (10mg*))
- -Counsel: ARV adherence, CTC visits, infant feeding (exclusive breastfeeding OR exclusive replacement feeding in the first six months)

** COVID-19, diagnosis and management

<u>Examples of symptoms</u> Fever, cough, shortness of breath, sore throat, nasal congestion, headache, loss of smell, nausea, vomiting, diarrhoea, close contact with suspected/confirmed persons

▲ COVID-19 symptoms may mimic obstetric complications and other infections (severe preclampsia, eclampsia, pulmonary oedema, anaemia, malaria, TB)

Management of confirmed OR suspected cases

-Identify most appropriate room for isolation during birth (*single-occupancy room, well-ventilated, closed door*)

-Apply standard PPE precautions

-For severe or critical illness:

In women who have difficulty breathing, including women with COVID-19, induction of labour must be considered (*page 17*).

Careful monitoring throughout the period of respiratory insufficiency (*in the maternity unit or intensive care unit*).

Timely supportive treatment (including oxygen if saturation below 93%).

PROM AND PRETERM BIRTH

PRE-LABOUR RUPTURE OF MEMBRANES (PROM)

37 weeks gestation or more: (term PROM)

PROM less than 24 hrs in total:

Routine assessments and supportive care in hospital

PROM more than 24 hrs in total:

Start antibiotics, for example (if not allergic):

Oral Erythromycin 500 mg 8 hourly AND

Oral Metronidazole 400 mg 8 hourly until birth Plan for birth within 12 hrs. Induce if necessary (page 17).

▲ Limit PVs due to risk of infection

Less than 37 weeks gestation: (Preterm PROM)

- 1. Sterile speculum exam to confirm leakage
- 2. Ultrasound (fetal wellbeing, liquor amount and gestational age
- 3. High vaginal swab (culture/sensitivity test)
- 4. Urinalysis
- 5. Start antibiotics, for example *(if not allergic)*: Oral Erythromycin 500 mg 8 hourly for 10 days **AND** Oral Metronidazole 400 mg 8 hourly for 10 days *(or until birth)*
- If gestational age less than 34 weeks, start dexamethasone and magnesium sulphate (see below)

<u>If high risk:</u> Induce immediately (page 17) (high risk due to for example severe hypertensive disorder (page 12) or signs of infection (page 13))

<u>If low risk:</u> Plan for expectant management in hospital, with close observation until 37 weeks gestation: Monitor for maternal and fetal wellbeing (*BP*, *Pulse*, *Temp., fetal movement, FHR, full blood picture (FBP)*)

PRETERM BIRTH

Confirm gestational age:

Use all available information (last menstrual period, physical exam in early pregnancy, ultrasound performed before 20 weeks, symphysis fundal height)

If high chance of birth before 34 weeks:

- Improve **lung maturity** of the baby by giving mother: Dexamethasone 6mg IM 12 hourly for 48hrs
- Prevent neurologic complications to the baby by giving mother: Magnesium sulfate 4g loading dose followed by an IV infusion of 1 g per hr for 24 hours or until birth (wichever occurs first)

If PROM, start antibiotics (see above)

Assess mother carefully

(pre-eclampsia page 12, maternal fever page 13, placental abruption page 14)

Prepare for birth

(routine CS is **not** recommended, avoid vacuum extraction, anticipate need for neonatal resuscitation)

Consider referral to higher level hospital

A Women with preterm labour or PROM have increased risk of complications, such as hypertension, pre-eclampsia (page 12), placental abruption (page 14), cord prolapse and infection (page 13)

A Newborns weighing 2000 g or less need kangaroo mother care as close to continuously as possible (early, continuous and prolonged skin-to-skin contact)



PART 2 Decision support

FETAL HEART RATE (FHR)

A Pushing is the most dangerous time for baby: FHR at the end of each contraction

FHR bpm	Ibnormal FHR (<u>continuous</u> FHR more than 180 bpm) uspect fetal distress and/or maternal infection: Pulse, BP, Temp (fever: page 13) ntrauterine resuscitation*, FHR every 15 min f no improvement after 1 hr: Immediate birth by vacuum extraction or CS (pages 16, 20)			
180 170 160	Borderline FHR (continuous FHR 161-180 bpm)Assess Pulse, BP, TempIntrauterine resuscitation*FHR every 15 min			
150	Normal FHR (FHR 120-160 bpm)			
140	First stage of active labour: FHR every 30 min (every 1 hr as a minimum)			
130	Second stage: FHR every 15 min when descending to pelvic floor			
120				
110	Borderline FHR (FHR 100-119 bpm) Intrauterine resuscitation* FHR every 15 min			
100 90	Fetal distress (FHR less than 100 bpm) Intrauterine resuscitation*			
80 70	After 5 min: If FHR still below 100 bpm: Immediate birth by vacuum extraction or CS (pages 16, 20) If FHR not heard, quickly confirm absent FHR**			

LIQUOR (amniotic fluid)

Clear (C)

Reassuring. No specific actions to be taken.

* INTRAUTERINE RESUSCITATION

- Woman to lie on left side (*if no improvement, then right side*)
- Stop oxytocin if administered
- Assess Pulse, BP, FHR, PV, Temp
- Start IV Normal Saline
- Reassess FHR after 5 min

Always ensure that it is FHR and not maternal pulse, by checking FHR and maternal pulse at the same time

Meconium, thin or thick (M)

Can be a sign of fetal distress: - Assess FHR every 15-30 min

At birth with meconium: Immediate suction of mouth and nose if signs of obstruction or weak baby. Do not suction if baby is nicely crying or breathing

** FHR NOT HEARD

Confirmation of absent FHR:

Ask colleague to reassess FHR (with Doppler) and perform ultrasound

If confirmed intrauterine fetal death, plan for vaginal birth:

- Induce or augment if necessary (page 17), or await spontaneous labour

Vaginal bleeding (B)

🔺 No PV before placenta praevia

is ruled out (by ultrasound. or in

theatre where CS can auickly be

See page 18.

performed)

- Craniotomy (if obstructed labour in second stage)
- Observe for signs of infection and treat (page 13)
- Provide emotional support (page 2)

▲ CS after fetal death is dangerous for the mother, and must only be performed as last option OR if 2 or more previous CSs OR if severe maternal compromise (for example uterine rupture, page 14)

PART 2 Decision support

PROLONGED LABOUR

ACTIVE FIRST STAGE OF LABOUR (Cervix 4-5 cm or more AND regular painful contractions)

A Cervical dilatation progresses in different speeds in uncomplicated births. But 95% of all women with uncomplicated birth dilate from 5 to 10 cm within 11 hrs



* 5 Ps - why poor progress?

Power: If less than 4 strong contractions per 10 min, enhance labour: ARM**, Oral fluid and food intake, Ambulation (upright position), Oxytocin (*page 17*)

<u>Passenger:</u> Consider: malposition, malpresentation, fetal weight (large baby?)

Pass urine: Encourage spontaneous emptying every 2 hrs (catheterize as last resort)

Psyche: Reduce anxiety (page 2)

Pelvis: Consider if the woman has severely contracted pelvis.

True cephalopelvic disproportion (CPD) is only rarely the cause of slow labour progress

SECOND STAGE OF LABOUR (Cervix fully dilated)

Duration less than 1 hr AND Pushing less than 30 min

Caring and continuous support ARM if membranes still intact** Encourage mother to choose position (eg lateral recumbent)

Duration 1-2 hrs OR Pushing 30-60 min

Exclude malposition If presenting part not visible at vulva, consider 5 Ps* and oxytocin augmentation (page 17) PV every 15-30 min

Duration more than 2-3 hrs OR Pushing more than 1-1½ hr OR signs of fetal distress

A For nulliparous, normal second stage can last up to 3 hrs Vacuum extraction if possible (page 20). CS as last resort.

▲ Oxytocin augmentation causes risks of uterine hyperstimulation, uterine rupture and fetal distress. Therefore, oxytocin augmentation must only be started when indicated (page 17)

▲ Pushing is the most dangerous time for the baby. Therefore, delay pushing until the woman feels urge to push OR head is on pelvic floor OR fully dilated for 1-2 hrs.

** ARM

- 1. Ensure fetal head engaged in pelvis (to avoid umbilical cord prolapse)
- 2. On back, legs bent, feet together, knees apart
- 3. Place two fingers against membranes and GENTLY rupture membranes with clamp
- 4. After rupture, fingers remain in place (umbilical cord prolapse?)
- 5. Remove fingers slowly, note colour of liquor (page 10)
- 6. Assess FHR after contraction
- ARM should also be performed in HIV-positive women when action line is crossed



PART 2 Decision support

HYPERTENSION AND PRE-ECLAMPSIA / ECLAMPSIA DURING LABOUR

SEVERE Hypertension / Pre-eclampsia*:

Antihypertensive** AND Anticonvulsant***

Strict fluid balance: A Risk of pulmonary edema

- Full blood count, liver and renal tests, proteinuria

Systolic BP 140-159 and/or Diastolic BP 90-109

MILD-MODERATE Hypertension / Pre-eclampsia*:

Assess lungs, urine output, proteinuria, patellar reflexes Pulse and BP every hr FHR every 30 min

Medication (SLOWLY) (use specific treatment sheet):

- Restrictive IV fluid, catheterize bladder (intake-output)

▲ Pre-eclampsia can worsen after birth. BP must be monitored regularly for at least 48 hrs postpartum. Consider ORAL antihypertensives for 3-6 days postpartum

Convulsions OR unconsciousness

A Convulsions or unconsciousness are always treated as **eclampsia** until other diagnosis is confirmed

- **1. CALL FOR HELP**
- 2. Airway and Breathing
- **3.** Position on left side and protect from injuries
- 4. Insert IV lines
- 5. Magnesium Sulphate SLOWLY**
- 6. Oxygen if available (mask or nasal)
- Additional management as for severe hypertensive disorders, but **plan for birth within 12 hrs** irrespective of gestational age

Systolic BP 160 or more and/or Diastolic BP 110 or more (mmHg)

> If urine output less than 30mL/hr: Stop Magnesium Sulphate. Start IV Normal Saline OR Ringer Lactate
> Plan for delivery within 12-24 hrs of ADMISSION:
> Vaginal birth is preferable (page 17)
> If preterm (below 34 weeks), see page 9

Assess every 30 min (use specific observation sheet): - Pulse, BP, RR, Temp, FHR, GCS, signs of organ failure or Magnesium Sulphate toxicity*** (assess lungs, urine output, urine dipstick, patellar reflexes)

Consider referral if woman is stable

* DIAGNOSING PRE-ECLAMPSIA

MILD-MODERATE pre-eclampsia:

Hypertension on 2 consecutive readings **AND** Proteinuria 2+ or more (*dipstick*)

SEVERE pre-eclampsia:

Pre-eclampsia (as above) AND Severe hypertension or signs of organ failure: Persistent severe headache, blurred vision, persistent upper abdominal pain, urine less than 30 ml/hr, breathlessness, renal or liver impairment

**** FAST ACTING ANTIHYPERTENSIVES**

HYDRALAZINE:

Dose: IV 5 mg bolus **SLOWLY** over 5 min Repeat: Every 20 min until SBP below 160 mmHg Maximum dose: 20 mg per 24 hrs

NIFEDIPINE:

(if Hydralazine not effective or not available) Dose: Oral or sublingual Nifedipine 10 mg Repeat: Every 30 min until SBP below 160 mmHg Maximum dose: 30 mg per 24 hrs

Antihypertensives may cause low BP and fetal distress (DBP must stay above 80mmHg)

*** ANTICONVULSANT

MAGNESIUM SULPHATE:

Loading dose:

1. IV 4g (20mL of 20% solution) **SLOWLY** over 10 min (mix 8mL 50% solution with 12mL Normal Saline or water for injection)

2. IM 10g 50% solution **AND** 2mL 2% Lignocaine in same syringe: 5g in each buttock

Maintenance dose and duration:

IM 5g **AND** 1mL 2% Lignocaine every 4 hrs, in alternate buttocks. Continue dose for 24 HRS AFTER BIRTH OR LAST CONVULSION, whichever occurs last

If convulsions while on maintenance dose:

IV 2 g magnesium sulphate in 100mL Normal Saline SLOWLY over 10 min (IV Diazepam 5-10mg as last resort)

Check for signs of toxicity before each dose:

- Patellar reflexes diminished or absent

- RR less than 12 breaths per min

A Urinary output less than 30mL per hr increases risk of Magnesium Sulphate toxicity

In case of toxicity: Stop Magnesium Sulphate. IV Calcium Gluconate 1g (10 mL of 10% solution) over 3 min (immediately if heart arrest). Bag-mask ventilation if necessary.

SHOCK, FEVER, SEPSIS

LOW BP OR LOW/HIGH PULSE RATE, SHOCK

A Systolic BP less than 100 mmHg √	Immediate danger signs: A - Systolic BP less than 90 mm - Unconscious Convulsions, s - Cardiac arrest: CARDIAC M	CALL for HELP! hHg (SHOCK) evere bleeding, sepsis* ASSAGE, VENTILATION, DE	FIBRILLATION (/	resuscitative CS)
or Pulse more than 110 bpm	Stabilizing care (<u>A</u> irway, <u>B</u> rea Stop bleeding if any Oxygen (by mask or nasal car	thing, <u>C</u> irculation) nnulae)	A If convulsion magnesium sul	ns, start Iphate (page 12)
or • Pulse less than 60 bpm	Elevate legs Vital signs every 15 min: Pulse, BP, RR, temp, vaginal blood loss, FHR, urine output Collect blood: Hemoglobin, blood group, cross-match, clotting-test, blood glucose 2 IV lines (grey or orange cannula): IV Normal Saline or Ringer's Lactate 2L in 20-40 min Catheterize bladder (fluid intake-output; urine output should stay above 30ml per hr)			
	Find and manage cause:	 Bleeding (APH or PPH: µ Magnesium Sulphate to Sepsis* 	page 14-15) xicity (page 8)	4. Trauma 5. Cardiac 6. Other
 Pulse 100-110 bpm or FHR more than 160 bpm 	Consider maternal infection (- Pulse, BP, RR, Temp, FHR eve - PV (blood loss, foul smelling - Uterine pain? - Sufficient fl	DR dehydration OR bleedin ry 15-30 min vaginal discharge, membra uid intake?	g? ines ruptured, d	ilatation)

HIGH TEMPERATURE DURING CHILDBIRTH (fever)

Temp 38°C or	Start broad spectrum intravenous antibiotics until birth, for example (if not allergic):
more	IV Ceftriaxone 1g once daily AND IV Gentamicin 5 mg per kg once daily AND
▲ Chorioamnionitis	IV Metronidazole 1.5 g once daily
causes risk of	Tablet Paracetamol 1 gram every 6 hrs (to lower the temperature)
neonatal sepsis and	Ensure hydration (consider need for IV Normal Saline or Ringer's Lactate)
maternal death	Pulse, BP, RR, FHR every 15-30 min. Temp hourly
	Consider diagnosis and order relevant tests: (adjust treatment accordingly)
	For example: Foul-smelling watery discharge, uterine tenderness (chorioamnionitis)
	Urinary dipstick testing (UTI), Flank pain (Acute pyelonephritis),
	Auscultation of lungs (Pneumonia), Malaria, Sepsis*
	Plan for birth within 12 hrs: Induce or augment if necessary (page 17)

* MATERNAL SEPSIS

A Call for HELP and consider referral to the Intensive Care Unit

 Symptoms:
 Slurred speech or confusion, Extreme shivering or muscle pain (fever), Passing NO urine all day, Severe breathlessness, It feels like dying, Skin mottled or discoloured

Management:

- Stabilizing care: <u>A</u>irway (oxygen), <u>B</u>reathing, <u>C</u>irculation
 - IMMEDIATE identification of the cause (remember blood cultures)
 - IMMEDIATE treatment of infection (broad spectrum IV antibiotics)
 - IV lines (wide bore cannula): IV Normal Saline or Ringer's Lactate 2L in 20-40 min
 - Catheterize bladder (fluid intake-output)
 - Every 15 min: Pulse, BP, RR, FHR

PART 2 Decision support

VAGINAL BLEEDING BEFORE BIRTH (APH)

BI FEDING IN LATE PREGNANCY OR DURING CHILBIRTH

1. Check maternal vital signs: Pulse, BP, Temp

See page 13 if:

- Systolic BP less than 100 mmHq OR
- Pulse less than 60 bpm OR
- Pulse more than 110 bpm
- 2. Blood type, X-match, hemoglobin Consider if full blood picture is needed

3. Determine the cause and manage accordingly*

- Blood volume?

(if heavy bleeding, see also page 13)

- Pain?
- FHR?
- Ultrasound to rule out placenta praevia

A No digital vaginal exam before placenta praevia is ruled out (by ultrasound or gentle speculum exam)

4. Measure blood loss and replace accordingly:

2-3 times estimated blood loss

A Early blood replacement saves life

Consider need for referral if woman is stable

Placental abruption*





APH causes increased risk of PPH

Concealed bleeding

Vaginal bleeding

Placenta praevia*







Partial

* MOST COMMON DANGEROUS CAUSES OF APH

PLACENTAL ABRUPTION

(placenta separates too early)

Common symptoms:

- Vaginal bleeding (might be hidden in uterus)
- Intermittent or constant abdominal pain
- Tender uterus
- Low/absent FHR

Moderate-heavy bleeding OR fetal distress:

DELIVER IMMEDIATELY by vacuum extraction (page 20), otherwise CS

Mild bleeding AND normal FHR:

Vaginal birth within 12 hrs ARM if membranes intact FHR every 15-30 min Augment if necessary (page 17), or consider CS

PLACENTA PRAEVIA

(placenta covers internal os of cervix)

Common symptoms:

- Bleeding
- No pain
- Relaxed uterus
- Foetus not in pelvis, malpresentation
- Fetal condition may be normal

If 37 weeks gestation or more OR heavy bleeding: DELIVER IMMEDIATELY

If preterm AND mild bleeding AND normal FHR:

Expectant management, admitted in hospital with close observation

RUPTURED UTERUS

Common early symptoms:

- Low/absent FHR
- High maternal pulse (might bleed in peritoneal cavity)
- Blood in urine
- Tender abdomen
- Vaginal bleeding

Common late symptoms:

- Abdominal distension (free fluid)
- Abnormal shape of uterus

- Loss of station (fetal head goes up)

- Fetal parts easily felt
- Shock

Resuscitate and restore blood volume:

Crystalloids 2-3 litres fast

THEATRE IMMEDIATELY:

Laparotomy (delivery baby, uterine repair or hysterectomy)

BLEEDING AFTER BIRTH (exceeding 500 ml, or less if severe anaemia)

▲ Stop bleeding while calling for help

1 PERSON AT UTERUS:

- Rub-up contraction by CONTINUAL UTERUS MASSAGE
- Catheterise bladder (leave catheter in place)
- If uterus still atonic, apply BIMANUAL COMPRESSION or aortic compression.**
- Review bleeding cause by the 4 Ts* (consider intrauterine palpation)
- If bleeding continues: Transfer early to theater (with bimanual or aortic compression)**

Examination under anaesthesia: remove retained placental parts, suture tears, balloon tamponade, laparotomy

1 PERSON AT HEAD:

- Lie woman flat
- Check airway and breathing
- Give oxygen if available
- Talk to woman, reassure



1 PERSON AT ARMS:

- At least **2 IV lines** (large bore cannula into eachelbow pit)
- Blood group and crossmatch, and order at least 2 units of whole blood
- Start **IV-fluids** immediately (2L Normal Saline or Ringer's Lactate)
- Give **3 drugs** at once (not in sequence):

IV Oxytocin 20 IU in 500 ml Normal Saline, 250 ml per hr

IV Tranexamic acid 1 gram slowly (can be repeated after 30 min)

Rectal Misoprostol 800 microgram

- Check pulse, BP
- Blood transfusion AND IV fluids if blood loss 1 L or more
- If still bleeding, and BP below 140/90 mmHg, give bolus of <u>IV Ergometrine</u> 0.2 mg SLOWLY (can be repeated after 15 min)

* 4 Ts - WHY PPH?

TONE:

Atony of uterus is the most common cause

TISSUE:

Is placenta complete? Always do intrauterine palpation if bleeding exceeds 1000 ml and continues

TRAUMA:

Tears or episiotomy (page 21), ruptured uterus

THROMBIN:

Coagulation problems secondary to severe bleeding



Intrauterine palpation, manual removal of placenta

After bleeding stops: 24 hrs of close observation

** BIMANUAL AND AORTIC COMPRESSION

▲ Keep compression until bleeding stops



A Palpate femoral pulse to assess effect of aortic compression: Femoral pulse must disappear

PART 2 Decision support

DECIDING ON CAESAREAN SECTION (CS)

BENEFITS AND RISKS OF CS

In sub-Saharan Africa, around 1% of women and 10% of babies die during or after CS, and CS causes increased risks in next pregnancy.

If FOETAL DISTRESS: See page 10 **A** CS after fetal death must only be performed as last option. Check FHR just before starting surgery.

If PROLONGED LABOUR: See page 11 **A** *True cephalopelvic disproportion* (*CPD*) *is diagnosed by trial of labour and is a rare condition.*

Alternatives to other common indications for CS:

	VBAC (trial of scar)	Vaginal breech birth	Vacuum extraction
Requirements	Only 1 previous low segment CS AND no previous uterine rupture AND current preg- nancy singleton, cephalic pre- sentation AND surveillance possible every 15-30 min	Previous vaginal birth AND no previous caesarean section AND no footling breech AND estimated birthweight below 4 kilo- gram	Cervix fully dilated AND vertex presentation (mem- branes ruptured) AND fetal head at or below ischial spines AND gestational age 34 weeks or more
Management	Due to risk of scar rupture: 2 IV lines, urinary catheter, FHR every 15-30 min, NO Prostaglandin or Oxytocin ▲ CS if continuous scar pain, fetal distress, poor progress	See page 18	See page 20



Benefits and risks	VBAC is safer for both moth- er and child than CS (only when requirements above are met)	Vaginal breech birth is safer for both mother and child than CS (only when require- ments above are met)	Vacuum extraction is safer for both mother and child than CS (only when re- quirements above are met)
	In high-income countries, the risk of uterine rupture is less than 1%, and between 20%- 40% of the women end up with emergency CS.	In high-income countries, 1-2 more babies die during or after vaginal breech delivery compared to CS. But this is not comparible to sub-Saha- ran Africa where the risk of death during or after CS is around 100-fold higher for the mother and 50-fold higher for the baby.	Compared with CS in second stage, vacuum extraction causes shorter time between decision and birth and lower risk of infection and bleeding. Therefore, vacuum extraction is associated with lower rates of birth asphyxia, stillbirths and maternal complications.

MAXIMUM TIME FROM DECISION TO BIRTH BY CS



If fetal or maternal compromise: 30 minutes

(for example fetal distress, cord prolapse with FHR present, severe bleeding)



If no maternal or fetal compromise, but early birth is needed: 75 minutes

(for example poor progress of labour, 2 or more previous CSs, placenta praevia without heavy bleeding)

PART 2 Decision support

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Labour INDUCTION AND AUGMENTATION

INDUCTION OF Labour (artificial stimulation of uterus to start labour)

Indication:

Birth needed soon.

For example due to PROM (page 9), Intrauterine fetal death (page 10), Severe pre-eclampsia (page 12), Postdate (more than 42 weeks)

Always keep mother ready for CS during induction

Contra-indications:

Do not use Prostaglandin if: previous CS **OR** parity 5 or more **OR** antepartum haemorrhage

Do not use Balloon catheter or vaginal misoprostol if: antepartum haemorrhage **OR** PROM **OR** obvious vaginal infection

OXYTOCIN AUGMENTATION OF Labour

(artificial stimulation of uterus after onset of labour to increase frequency, duration and intensity of contractions)

Indications (all 3 must be met):

- 1. No previous scar
- 2. Less than 4 contractions per 10 min, each lasting less than 40 sec.
- Labour truly prolonged, other options tried (page 11): <u>Active first stage</u>: Action line crossed AND membranes ruptured for at least 1 hr <u>Second stage</u>: 1-2 hr or more OR pushing 30-60 min

Examine cervix and calculate Bishop score:

Cervix:	0	1	2	3
Dilatation (cm) Closed	1-2	3-4	5 or more
Length (cm)	5 or more	3-4	1-2	Less than 1
Consistency	Firm	Average	Soft	Effaced
Position	Posterior	Mid	Anterio	r Effaced

Score 5 or less *(cervix unfavourable)*: Induce by misoprostol **OR** Balloon

Score 6 or more *(cervix favourable)*: ARM if possible and oxytocin *(see below)*

▲ Oxytocin augmentation causes risk of uterine hyperstimulation, uterine rupture and fetal distress (intrapartum stillbirth, neonatal death and low Apgar score). Therefore, oxytocin augmentation must only be started when indicated (page 10) and titrated carefully. Oxytocin augmentation must NEVER be given as IV or IM bolus

* PROSTAGI ANDIN

Dose: Oral Misoprostol 25µg 2 hourly for 24 hrs OR PV Misoprostol 25ug 6 hourly for 24 hrs OR PV Dinoprostone PV 3mg 6 hourly to a total of 2 doses.

Every 1 hr: FHR and contractions

PV before each dose:

If score 5 or less: Repeat Prostaglandin If score 6 or more OR membranes ruptured: Stop Prostaglandin and consider Oxytocin

A Oxytocin should be started no earlier than 4 hrs after the last dose of prostaglandine

If no progress after 24 hrs of Misoprostol or 12 hrs

of Dinoprostone: If birth needed fast, consider CS. Otherwise, repeat prostaglandine for 12 hrs (immediately or the following day)

**** BALLOON CATHETER**

- 1. Balloon catheter (or folev catheter):
- Gently introduce balloon catheter through cervix (inflatable bulb must be beyond internal cervical os)
- Inflate bulb with 60–80 mL of water, add traction
- Leave catheter in place for 12 hrs or less

2. When catheter is removed or falls out: ARM and start Oxvtocin

OXYTOCIN AUGMENTATION

A Oxytocin should always be labelled and documented with time, dose, and drop rate.

Start dose:

- Nullipara: IV Oxytocin 5.0 IU in 500 ml Normal Saline or Ringer's Lactate, 10 drops per min
- Multipara: IV Oxytocin 2.5 IU in 500 ml Normal Saline or Ringer's Lactate, 10 drops per min

Every 20-30 min:

- Assess FHR, contractions, oxytocin drops per min
- Increase by 5-10 drops per min until 4 contractions in 10 min, each lasting 40 sec or more. Maintain this rate until birth.

A Maximum 60 drops per min.

Stop oxytocin: If more than 5 contractions in 10 min



PART 3 Procedures

VAGINAL BREECH BIRTH

VAGINAL BREECH BIRTH

Recommended if:

- Previous vaginal birth AND
- No previous caesarean section AND
- No footling breech AND
- Estimated birthweight below 4 kilogram AND
- A health provider experienced with the procedure present

Management of first stage of labour:

Routine management as for cephalic presentation (page 3), but FHR every 30 min.

Avoid Oxytocin augmentation in first stage of labour. If action line is crossed (*page 10*), decide on CS.

Management of second stage of labour:*

A Maximum 2 hrs duration of second stage (maximum 1 hr of pushing)

- 1. Oxytocin augmentation should be ready if contractions not strong in second stage (page 7)
- 2. Buttocks deliver spontaneously (hands off)
- **3.** If legs not delivered spontaneously, deliver one leg at a time: Push behind knee to bend leg, grasp ankle, deliver foot and leg.
- **4. Hold baby by the hips** with thumbs along spine. Do not pull. No pressing on abdomen.
- 5. Allow arms to disengage spontaneously one by one. After first arm, lift baby's belly towards mother's belly to enable second arm to deliver.
- 6. Let the head descend to pelvic floor for maximum 30 seconds before assisting delivery of the head.
- 7. Deliver head: Lay baby's face down with length of its body over your hand and arm. Place fingers on baby's cheekbones to flex head. Fingers of the other hand help to flex head from the occiput. Raise baby, until mouth and nose are free.

* VAGINAL BREECH BIRTH - OBSTETRIC MANEUVERS



PART 3 Procedures

VAGINAL TWIN BIRTH

VAGINAL TWIN BIRTH

Birth of first baby

If first twin in cephalic presentation:

Allow labour and birth to progress as for a single baby in cephalic presentation (page 3 and 4)

If first twin in breech presentation:

Allow labour and birth to progress as for a single baby in breech presentation (*page 18*). The small but severe risk of interlocking heads must be kept in mind

If first twin in transverse lie: Perform CS

A Women with twin pregnancies have increased risks of obstetric complications, such as preeclampsia (page 12) and PPH (page 15)

Birth of second baby (or additional babies)

1. Immediately after first baby is born:

- Palpate abdomen to determine lie
- If tranverse, correct to longitudinal lie by hands on abdomen
- Assistant holds baby in position until birth
- Check FHR
- 3. PV to assess if:
 - Cord prolapsed?
 - Presentation? If breech, vaginal breech delivery (page 18)
 - Membranes ruptured? ARM if membranes are intact and presenting part well engaged (page 11)
- **3. If contractions not strong:** Start oxytocin augmentation, with rapid titration (*page 17*)

4. FHR at the end of each contraction

A If immediate birth needed: Internal podalic version*, or vacuum extraction (page 20). CS is last option and should be done IMMEDIATELY

* IMMIDIATELY AFTER BIRTH OF FIRST TWIN



**** INTERNAL PODALIC VERSION**

Wear sterile gloves. Insert a hand into the uterus and grasp the baby's foot



Gently rotate the baby down

Proceed with breech extraction (page 20)

A Start pushing when baby's presenting part is well engaged

VACUUM EXTRACTION

VACUUM EXTRACTION

Most important indications:

Fetal distress in second stage (page 10) Poor progress in second stage (page 11) Severe hypertension in second stage (page 12) Maternal exhaustion

▲ If the procedure is not possible or fails, CS should be performed IMMEDIATELY

The A-J approach to vacuum extraction:

- A <u>A</u>sk for help <u>A</u>ddress the woman (inform that you need patient to cooperate and keep pushing when there is contraction) Abdominal Palpation (descent of head)
- B Bladder is empty?
- C <u>C</u>ervix must be fully dilated <u>C</u>ontractions are needed (*Oxytocin needed*? *Page 17*)
- D Determine position of the head assess Descent (locate the posterior triangular fontanel)
- E Equipment ready? (delivery tray, towels, neonatal resuscitator, vacuum extractor)

Required beforehand:

- 1. Cervix fully dilated
- 2. Vertex presentation, membranes ruptured
- 2. Fetal head **at or below** ischial spines (*PV: stations 0,* +1,+2,+3. Abdominal: levels 2/5, 1/5, 0/5)
- 3. Gestational age 34 weeks or more
- 4. Birth attendant trained in vacuum extraction
- F <u>F</u>lexion point* must be located <u>F</u>eel for vaginal tissue between cup and fetal skull to avoid perineal trauma (before and after suction)
- G Gentle, steady traction during contractions**
- H <u>H</u>ALT traction between contractions
 <u>H</u>ALT and STOP if: 3 pop-offs
 - 3 pulls with no progress
 - After 20 min of use
- Intact perineum! Protect perineum with one hand when head is delivered.
 During last contraction: Hold back head with the other hand, and ask mother to push gently
- J When reachable Jaw: Release vacuum, remove cup

* FLEXION POINT

Place the edge of the cup at the tip of the posterior triangular fontanel.



A To avoid perineal trauma and minor trauma to the head of the baby: Feel for vaginal tissue between cup and fetal skull, and protect perineum

**** TRACTION**







Axis for traction changes according to the pelvic curve.

▲ Gentle, steady traction during contractions. No rocking pulls

For first contractions downward traction. During following contractions more upward.

One hand protects perineum while completing birth. During last contraction, ask mother to push gently and hold back baby's head with other hand.

PART 3 Procedures

SHOULDER DYSTOCIA

SHOULDER DYSTOCIA

HELPERR mnemonic*

- H Call for HELP! Always at least 3 health providers
- E <u>Evaluate if episiotomy is needed</u>
- L Legs up* (McRoberts: 2 people push flexed knees firmly onto chest by flexion of hips)
- P Suprapubic <u>Pressure</u>* downwards to assist extraction of baby's shoulder
- Enter vagina and do rotational maneuvers:*
 apply pressure to baby's anterior shoulder in direction of sternum
 - if not working, apply pressure to baby's posterior shoulder in direction of sternum
- R <u>R</u>emove the baby's posterior arm*
 grasp arm at humerus, keep arm flexed at elbow and sweep arm across baby's chest
- R <u>R</u>oll patient to her hands and knees and repeat E and R

A Do not apply fundal pressure. This will further impact the shoulder

* SHOULDER DYSTOCIA - OBSTETRIC MANEUVERS

L-P. Legs up and suprapubic E. Rotational maneuvers R. Remove baby's posterior arm **R.** Roll woman to her hands and knees and repeat ØÐ

PART 3 Procedures

GUARDING AND REPAIR OF PERINEUM

An unrepaired or poorly repaired tear can lead to bleeding, anaemia, abscess formation, wound breakdown, loss of control over bowel movements and gas, and rectovaginal fistula. Therefore, ALWAYS guard perineum, inspect vagina/perineum/cervix routinely after birth, and carefully repair perineal tears



GUARDING PERINEUM

ALWAYS guard perineum

Fingers of one hand support perineum, while second hand applies pressure to fetal head to control speed of crowning (ask mother to stop pushing and breathe the head out)

▲ ONLY perform episiotomy when a too tight perineum prevents head to come after several pushes



REPAIR OF PERINEAL TEARS

Examination and classification

- Ensure good lightening and suitable position of the woman (the entire genital tract must be visualized)
- Classify perineal tear (place a gloved finger in the anus: feel for tone or tightness of the sphincter, and look for protrusion of the finger into vagina)



3rd-4th degree

Both superficial perineal muscles and anal sphincter torn. It is 4th degree if tear in rectal mucosa

All 3rd-4th degree sutures must be supervised by a specialist doctor and preferably in operating theater

Suturing

PART 3 Procedures

- Use absorbable sutures 2-0 (3-0 for rectal mucosa). Needle size depends on tissue thickness.
- Only provide antibiotic prophylaxis for 3rd-4th degree tears



NEONATAL RESUSCITATION

Second Edition

Helping Babies Breathe



A CALL for HELP! Always be at least two health providers

▲ For bag-mask ventilation, position of the head is slightly extended to open airway (if too extended, airway will not be open). If heart rate is increasing, bag-mask ventilation is working.





A How is the mother? Mothers of asphyxiated babies are at increased risk of PPH (page 19)

Consider referral after successful resuscitation (to higher level hospital with neonatal intensive care unit)

After successful resuscitation, the baby is at risk of hypothermia and hypoglycemia. Therefore, skin-to-skin with mother, and assure good breastfeeding (if not, give cup-feeding or insert nasogastric tube)

PART 3 Procedures

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For more information, please see the PartoMa website: publichealth.ku.dk/partoma

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PartoMa

workers holding the lives of others in their hands Achievable guidance should be a basic right for health