



THE REPUBLIC OF UGANDA

MINISTRY OF HEALTH

UGANDA'S BIRTH ASPHYXIA CARE BUNDLE

PREWAVED

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"7 steps to ensuring babies breathe at birth"

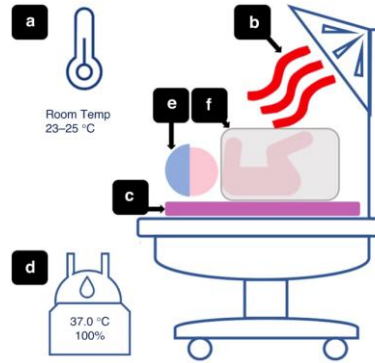
Birth ASPHYXIA BUNDLE (PREWAVED)



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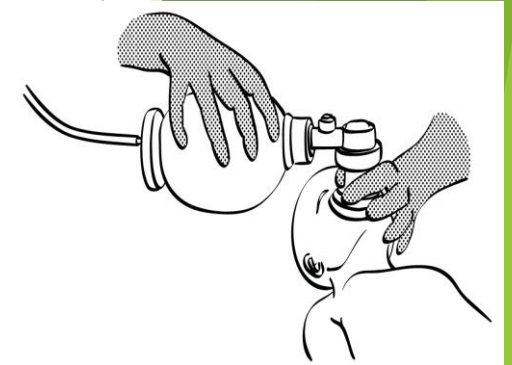
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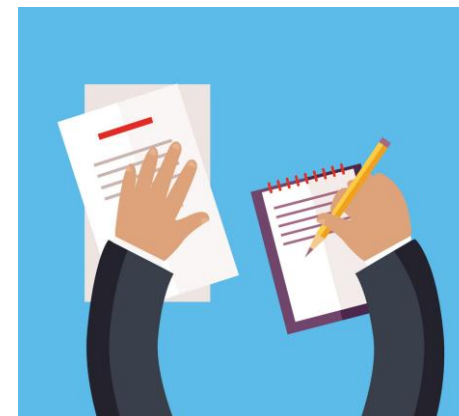
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Prediction

- ▶ **P**rediction of Risk - Early detection of babies at risk of birth asphyxia (ANC & labor)
- ▶ Most cases of birth asphyxia are preceded by identifiable antenatal, intrapartum, or fetal risk factors.
- ▶ Recognising these factors before delivery allows the healthcare team to anticipate complications, mobilize resources, and prevent delays in care.
- ▶ Guide on mode, timing and setting of delivery

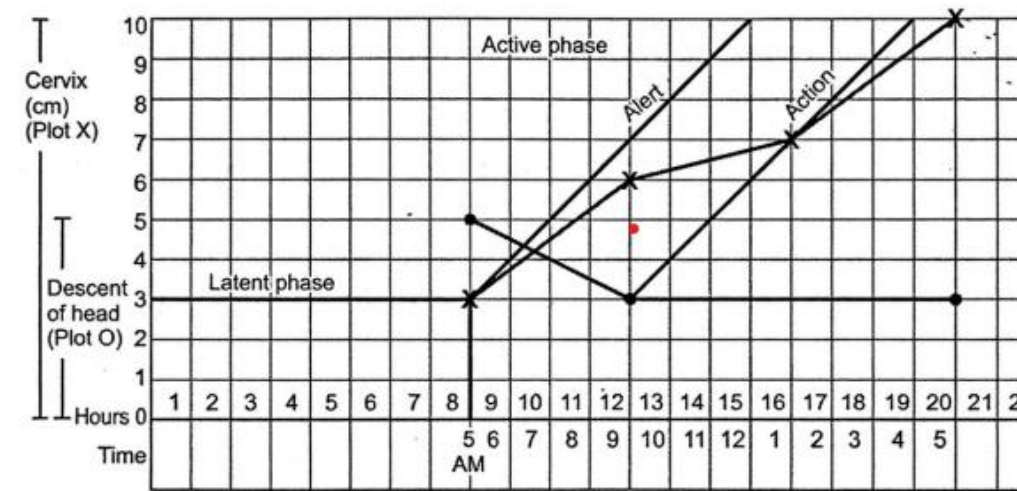
Maternal Risk Factors

▶ Antenatal

- ▶ Hypertensive disorders of pregnancy (pre-eclampsia/eclampsia)
- ▶ Severe maternal hypotension or shock
- ▶ Antepartum haemorrhage (placenta previa, placental abruption)
- ▶ Severe maternal anaemia
- ▶ Diabetes mellitus and other chronic medical conditions
- ▶ Maternal infections (e.g., chorioamnionitis, sepsis, malaria)
- ▶ Previous stillbirth or previous birth asphyxia
- ▶ Teenage pregnancy and advanced maternal age
- ▶ Low maternal educational attainment, which may delay care-seeking
- ▶ Multiple pregnancy

Intrapartum Risk Factors

- ▶ Monitor labor closely to detect conditions associated with fetal hypoxia:
 - Use a Partograph or WHO Labor Care Guide to monitor labor progress.
 - Prolonged second stage of labor
 - Obstructed or prolonged labor
 - Malpresentation (breech, transverse lie, face presentation)
 - Uterine hyperstimulation from inappropriate oxytocics use
 - Meconium-stained amniotic fluid
 - Blood-stained amniotic fluid
 - Cord prolapse, presentation or cord compression
 - Delayed decision-making or delayed delivery in the presence of fetal compromise



Fetal Risk Factors

- Identify fetuses at increased risk of oxygen deprivation before or during labor:
 - ▶ Prematurity
 - ▶ Low birth weight
 - ▶ Macrosomia
 - ▶ Intrauterine growth restriction
 - ▶ Multiple gestation
 - ▶ Tight nuchal cord
 - ▶ Oligohydramnios or polyhydramnios
 - ▶ Abnormal fetal heart rate patterns (<120 or >160 beats/minute)
 - ▶ Persistent fetal heart rate decelerations
 - ▶ Reduced fetal movements
 - ▶ Evidence of fetal distress or fetal hypoxia

ACT

When risk factors or warning signs are identified, immediate action is required to prevent progression to fetal hypoxia and birth asphyxia.

➤ Enhance Surveillance

- ▶ Intensify maternal and fetal monitoring.
- ▶ Monitor fetal heart rate according to national guidelines.
- ▶ Use a Partograph or WHO Labour Care Guide to track labour progress.
- ▶ Reassess risk continuously throughout labour and delivery.
- ▶ Use a CTG or frequent intermittent auscultation

➤ Address Reversible Causes

- ▶ Treat maternal hypotension, anemia, malaria, dehydration, hypoglycemia, and infections promptly.
- ▶ Discontinue oxytocin and initiate corrective measures in cases of uterine hyperstimulation.
- ▶ Reposition the mother and optimize maternal oxygenation and hydration.

ACT

➤ **Escalate and Intervene**

- ▶ Refer mother for delivery in a CEmONC as soon as risk is identified
- ▶ Notify senior obstetric staff early.
- ▶ Expedite delivery when fetal compromise is suspected.
- ▶ Start intrauterine resuscitation if delivery will be delayed
- ▶ Perform operative vaginal delivery or Caesarean section when indicated.
- ▶ Avoid unnecessary delays in decision-making and intervention.

➤ **Prepare for Birth**

- ▶ Alert the neonatal resuscitation team.
- ▶ Ensure availability and functionality of resuscitation equipment, oxygen, suction devices, and ventilation equipment.
- ▶ Conduct a pre-delivery team briefing for all high-risk births.

Intrauterine resuscitation

- ▶ There are four primary types of interventions
 1. Tocolytic therapy
 2. Intravenous fluid administration
 3. Maternal position changes
 4. Maternal oxygen administration

Interventions

1. Tocolysis/tocolytic therapy

Tocolysis involves **stopping the contractions**, which leads to increased blood flow and oxygenation

- ▶ Discontinuation or decrease of uterotonic agents is recommended
- ▶ During induction of labor or delivery, uterotonic agents such as IV oxytocin or intravaginal prostaglandins are commonly used
- ▶ In cases where an EFM suggests a non-reassuring fetal state with the concomitant use of uterotonic agents, with or without the development of tachysystole, the decrease of the infusion dose or discontinuation of oxytocin, the withdrawal of pessaries, or the removal of prostaglandins from the vagina (without performing any kind of cleaning) must be part of the management
- ▶ Tocolytic drugs can be used in cases of hyperstimulation, delay of preterm delivery
- ▶ Indicated when immediate delivery is not possible, need to transfer to high facility, or need to give ACS.
- ▶ Indomethacin, nifedipine, terbutaline, salbutamol, magnesium sulphate

Interventions

2.IV fluid administration for intrauterine resuscitation

- ▶ Fetal oxygenation is highly dependent on placental perfusion, and optimal intravascular volume is required to keep it normal
- ▶ It has been demonstrated that the maternal administration of 1000 mls of intravenous crystalloids increases foetal oxygen saturation in about 14% in non-hypoxic fetuses vs. 10% after administration of 500 mls volume
- ▶ Therefore, it is expected that the impact of maternal administration of high crystalloid volumes in hypoxic fetuses is greater
- ▶ No role of dextrose in resuscitating the fetus,

Interventions

2.IV fluid administration for intrauterine resuscitation. . .

- ▶ The rapid administration of 1000 mls intravenous crystalloid bolus is a measure that must be applied whether there is, or no, maternal arterial hypotension and it may be contraindicated in special cases such as patients with pre-eclampsia or with cardiac diseases
- ▶ However, this intervention is not necessarily associated to an increase in maternal blood pressure
- ▶ This process allows an increase of maternal cardiac output, decreases the blood viscosity, and also acts like a temporary tocolytic effect in response to increased uterine blood flow and placental perfusion.

Interventions

3. Maternal position changes

- ▶ The best labour position for optimizing oxygenation of the foetus can vary depending on individual circumstances
- ▶ Often recommended positions that improve maternal circulation include:
 - i. Left-lateral position
 - ii. On all fours or the the knee-to-thorax position in cord prolapse
 - iii. Upright positions
 - iv. Side-lying with a tilt to prevent compression of the vena cava
 - v. Semi-reclining

Interventions

3. Maternal position changes

- ▶ Certain labour positions might lower blood pressure, such as lying flat on the back or in a supine decubitus position compressing the aorta and inferior vena cava
- ▶ Repositioning the client into a more favourable position for foetal oxygenation can increase the blood flow by decompressing these large vessels to increase the venous return to the maternal heart, improving the cardiac output and the blood flow to the placenta
- ▶ Positions knee-chest, steep Trendelenburg, relieve pressure of presenting part against the cord.
- ▶ Reducing the presenting part, returning the cord and back-filling the bladder can be used

Interventions

4. Maternal oxygen administration

- ▶ Normal fetal saturation is approximately 40% to 60%
- ▶ To get the highest possible amount of oxygen from the client to the fetus, a high concentration of oxygen needs to be given, making a nasal cannula insufficient
- ▶ It has been demonstrated that maternal administration of high oxygen concentrations (FiO_2 of 60% in 10-15 l per min) with devices such as a mask with reservoir bag, increase the oxygen saturation in hypoxic fetii approximately from 26% to 37%
- ▶ A non-rebreather mask with 10 litres per minute gives sufficient oxygen
- ▶ Nevertheless, the administration of oxygen has no benefit in a well-perfused parturient.



THANK YOU