



# INTRAUTERINE RESUSCITATION

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25<sup>TH</sup>,APRIL,2025



# INTRODUCTION



- Intrauterine resuscitation (IUF<sup>R</sup>) is a set of procedures implemented during labor when a non – reassuring fetal heart rate pattern suggests fetal hypoxia or acidosis..
- The Fetal heart rate is considered non reassuring if there is absence of Variability and high frequency and increased depth of deceleration.
- A non reassuring fetal heart is considered an emergency therefore action should be thought of timely, to prevent birth asphyxia that has contributed to the high numbers in neonatal deaths.

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- ❑ In Uganda the incidence of a non –reassuring fetal heart is around 15.1% in Northern Uganda ( Elizabeth Ayebale et al, 2020)
  - ❑ Therefore every care giver ( midwife ,Doctor) must commit to monitor labor progress religiously and be able to detect any deviation from normal and act immediately for better outcome.
  - ❑ Therefore, the goal of IUFR is to improve oxygen delivery to the placenta and maintain umbilical blood flow , potentially reversing fetal distress.



# Risk factors to a non reassuring fetal heart in labor.

## Antepartum

- Any condition where placental insufficiency is suspected during antenatal visits puts a mother at having a high risk labor.
- ✓ Known fetal anomalies
- ✓ Maternal pre eclampsia / Gestation hypertension/Anaemia
- ✓ Maternal type 1 diabetes Mellitus
- ✓ Suspected fetal growth restriction.



## **Intra partum**

- ✓ Presence of meconium
- ✓ Presence of tachystole
- ✓ Signs and symptoms of intrauterine infection
- ✓ Un explained Vaginal Bleeding ( APH)
- ✓ Use of oxytocin or other uterine stimulants for labor induction or augmentation

# Labor monitoring

- ❑ Labor monitoring involve using various tools and devices to trace the progress of labor and asses the well being of both the mother and the baby.

These include ;

- ❑ **Partograph** – a graphical tool for recording maternal and fetal indicators ( uterine contractions , Fetal heart rate, cervical dilatation etc.
- ❑ **Hand held devices** e.g. Sonicaid and a pinard stethoscope –For intermittent fetal heart rate monitoring . This allows for labor exercises since there freedom of movement.




## Cardiotocograph (CTG)

- ❑ A device used to continuously record the fetal heart rate and maternal uterine contraction during pregnancy and in labor.
- ❑ It assesses fetal well being and detects potential signs of fetal distress.
- ❑ The ultra sound transducer is for fetal heart monitoring and detects the changes in the fetal heart rates,
- ❑ Toco- Transducer for measuring the contractions of the uterus by detecting changes in pressure on the maternal abdominal wall.
- ❑ This is done possible with the help of two flexible straps placed across the mothers abdomen.









## MINISTRY OF HEALTH

# LABOUR PROGRESS CHART (PARTOGRAM)

**Hospital or Health Centre:**

**Name:**

**Age:**

**L NMP:**

**Risk Factors:**

**PMTCT code:**

**Date of admission:**

**Gravida:**

**EDD:**

**IP no:**

**Time of admission:**

**Para:**

**Weeks of Gestation:**

**Membranes ruptured at:**

**FETAL HEART RATE**

180

170

160

150

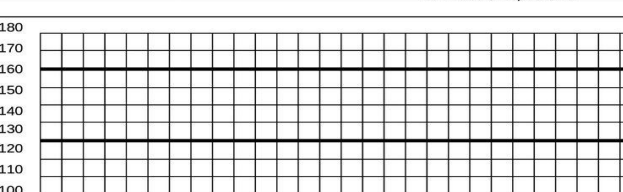
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130

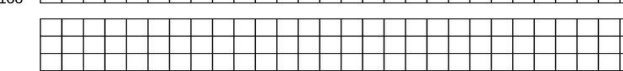
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110

100



**MEMBRANES LIQUOR MOULDING**



**CERVICAL DILATATION IN CM**

10

9

8

7

6

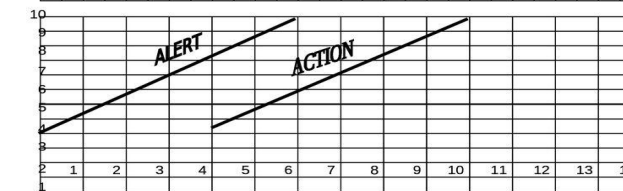
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4

3

2

1



**DESCENT OF HEAD**

10

9

8

7

6

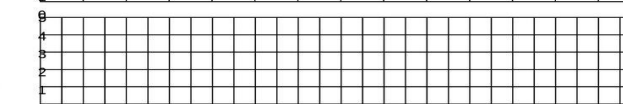
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**HOURS TIME**

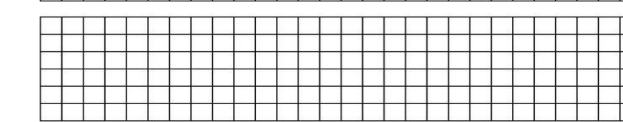
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**CONTRACTIONS PER 10 MINUTES**

10


8

6

4

2

1



**BP**

160

140

120

100

80

60

40

20

0



**TEMPERATURE**

100

98

96

94

92

90

88

86

84

82

80



**URINE**

4

3

2

1

0



**DRUGS GIVEN**



**OR IV FLUIDS**



**URINE TEST:**

CONTRACTION KEY:

**ALBUMIN**

LESS THAN 20 SECONDS

**SUGAR**

BETWEEN 20-40 SECONDS

**ACETONE**

MORE THAN 40 SECONDS



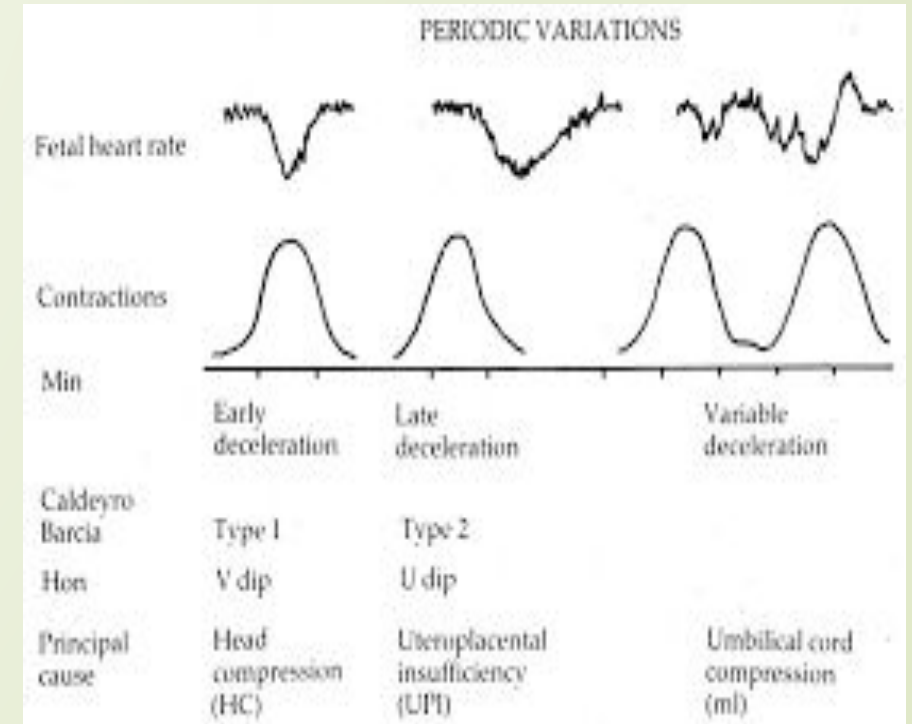


# Normal fetal heart Rates in Labor

- A normal fetal Heart Rate during labor typically fall between 110 and 160 beats per minute .
- A base line heart rate with in this range suggests normal fetal acid base status at that time of observation.
- It is important to remember that the baby's heart rate can naturally fluctuate above or below this range due to either fetal movements or response to contractions.
- This variation should be between 6 -25 beats.
- However if there is lack of variability or presence of deceleration , it could indicate a problem requiring further evaluation or intervention.

# Fetal Heart Decelerations

- ❑ Variable Deceleration- A temporary decrease in fetal heart rate below the base line rate (110b/m) and it occurs during contractions ,possibly indicating cord compression.
- ❑ Early deceleration occur during a contraction with the lowest point of the heart rate deceleration at the peak of the contraction. These decelerations are considered benign and a normal physiological response not requiring interventions.
- ❑ Late decelerations- Fetal heart deceleration is a gradual decrease of the fetal heart rate in response to a contraction with the lowest point of deceleration happening after the peak of the contraction .
- ❑ This type of deceleration can indicate reduced flow to the placenta leading to fetal distress. Needs emergency intervention.





# Intrauterine resuscitation Interventions

- Intra uterine interventions aim to improve oxygenation to the fetus and reduce risk of fetal acidosis when non reassuring fetal heart rate patterns are detected.
- These interventions include ;
  - ✓ Explain to the mother and the care taker the changes in the fetal rate and the interventions to rectify the problem.
  - ✓ Reassure the mother and care taker to allay their anxiety
  - ✓ Repositioning the mother ,
  - ✓ Oxygen Therapy
  - ✓ Intravenous Fluids
  - ✓ Tocolysis
  - ✓ Amnioinfusion



## **Maternal Repositioning**

- Changing the mothers position often to the left laterall position is the first line intervention to improve utero placental blood flow and reduce umbilical cord compression.

## **Intravenous Fluids**

- A fluid bolus of 500-1000mls of a crystalloids improves maternal hydration and blood volume thus improving fetal perfusion .

## **Oxygen Administration**

- Administration of oxygen 10-15lt per minute with a non re-breather Mask increase the oxygen available to the fetus thus correcting fetal hypoxia.




## **Tocolysis**

- If uterine hyper stimulation is contributing to fetal distress, tocolytics, may be administered to relax the uterus and improve placental perfusion.

## **Amnioinfusion**

- If Umbilical cord compression is suspected , amnioinfusion can help relieve pressure on the cord and improve fetal oxygenation.
- If membranes are ruptured and there are recurrent variability.

(infusion of fluid into the amniotic cavity)



# Nursing Mnemonic for a non reassuring fetal heart ( VEAL- CHOP-MINE)

## FHR PATTERN( VEAL)

V-Variable deceleration  
E- Early Deceleration  
A – Acceleration  
L – Late deceleration

## CAUSE( CHOP)

C- Cord compression  
H- Head compression  
O – Okay  
P– Placental Insurf

## MANAGEMENT( MINE)

M- Maternal reposition  
I – Identify labor progress  
N – No intervention  
E – Execute Interventions


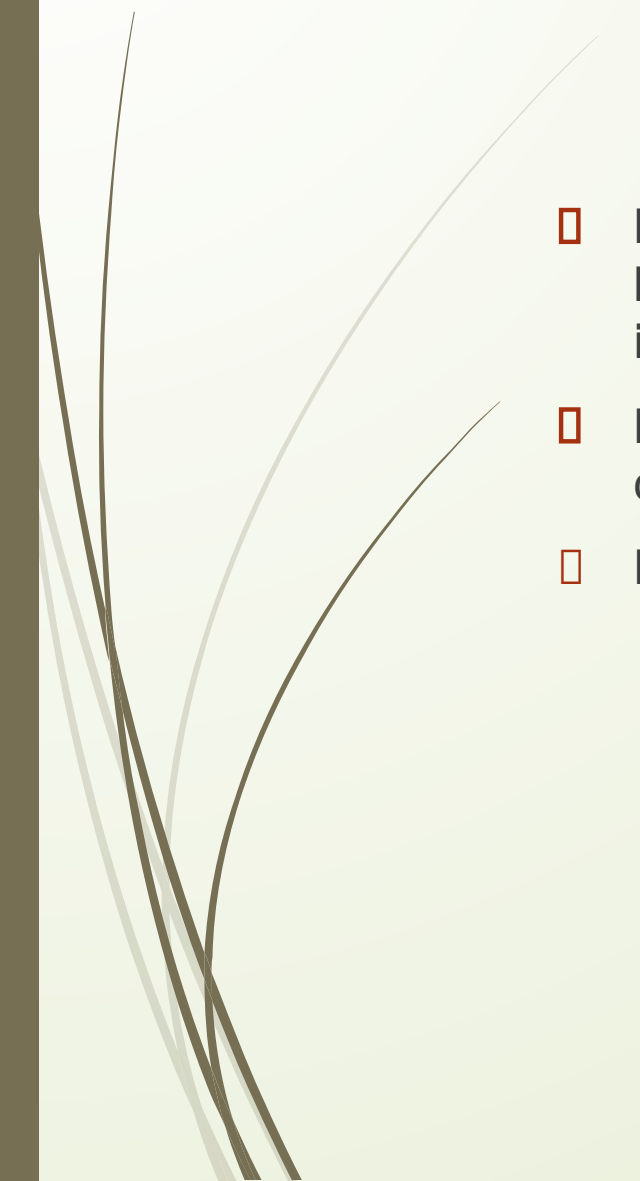




# Multidisciplinary Approach

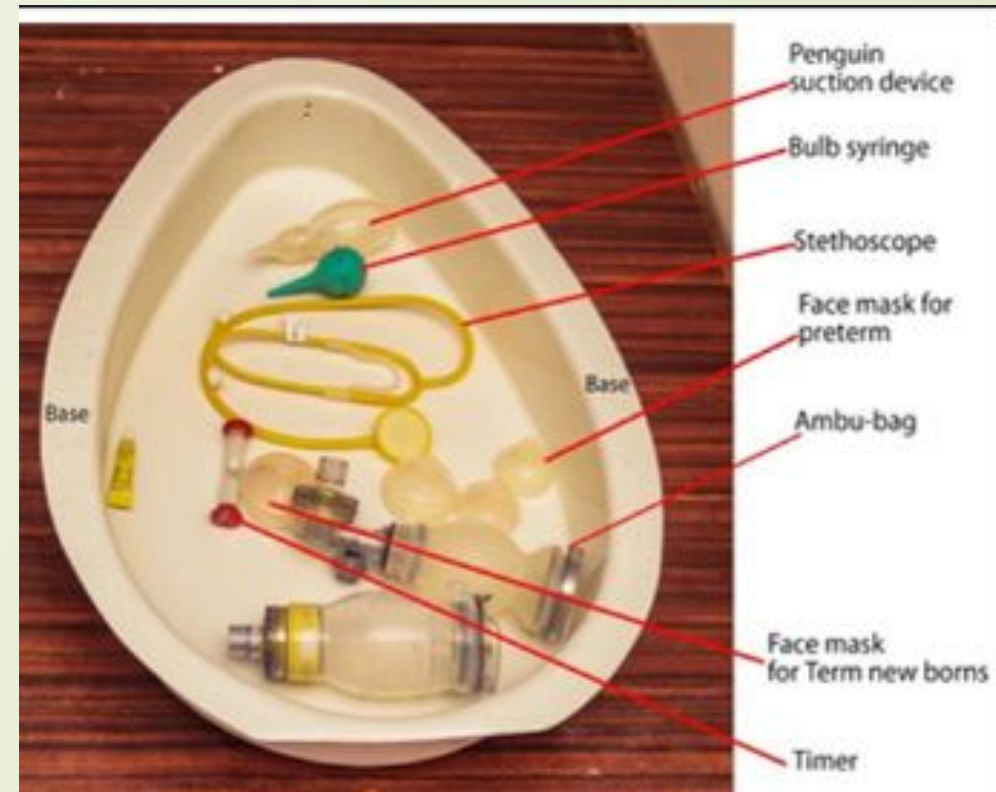
In an emergency , effective communication is vital and the ASBR model frame work is used in clinical practice to communicate clearly and effectively.


- **A-Attention** : Get the Teams attention immediately. **Eg shout for help or ring an emergency bell.**
- **S- Situation**: Briefly state what is happening **e.g. Hello Dr. i have a Non reassuring fetal heart rate with prolonged bradycardia**
- **B – Background**: Give background information **e.g.. I have SK a prime Gravid at 38 weeks in active labor on oxytocin 5 IU , fully dilated pp. at station 1 , no caput, moulding Grade 1.**

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- **E- Evaluation.** State your assessment : **eg Fetal heart rate has been bradycardia( 100b/min – 108b/min) for 6 minutes , no response to intrauterine resuscitation.**
  - **R- Recommendation:** Clearly state your what you need to happen as a midwife in care **eg I recommend Assisted Vaginal delivery.**
  - Document all proceedings accurately.

# Prepare for delivery mode and outcome.

- ❑ The mode of delivery depends on gestational age , cervical dilatation ,fetal station and the response to intra uterine resuscitation.
- ❑ Vaginal Assisted delivery is preferred if mother is in second stage and no contra indication .
- ❑ Resuscitation equipment should be aligned and functional.
- ❑ Cesarean section is indicated if there is persistent NRFHR despite intrauterine resuscitation.
- ❑ Inform Theatre to prepare( Surgical Team should be ALERT)
- ❑ Obstetrician
- ❑ Neonatologists or any skilled personel in New born resuscitation.





# Pros and Cons of external Monitors

## **PROS:**

- ❑ Less invasive than internal monitors.
- ❑ The amniotic sac does not have to be ruptured.
- ❑ Poses little risk to mom or baby, and you can have it removed at any time.
- ❑ Allow mom to assume a variety of positions.
- ❑ Some facilities offer wireless, belt-free external fetal monitoring called telemetry, which allows mom to move freely.



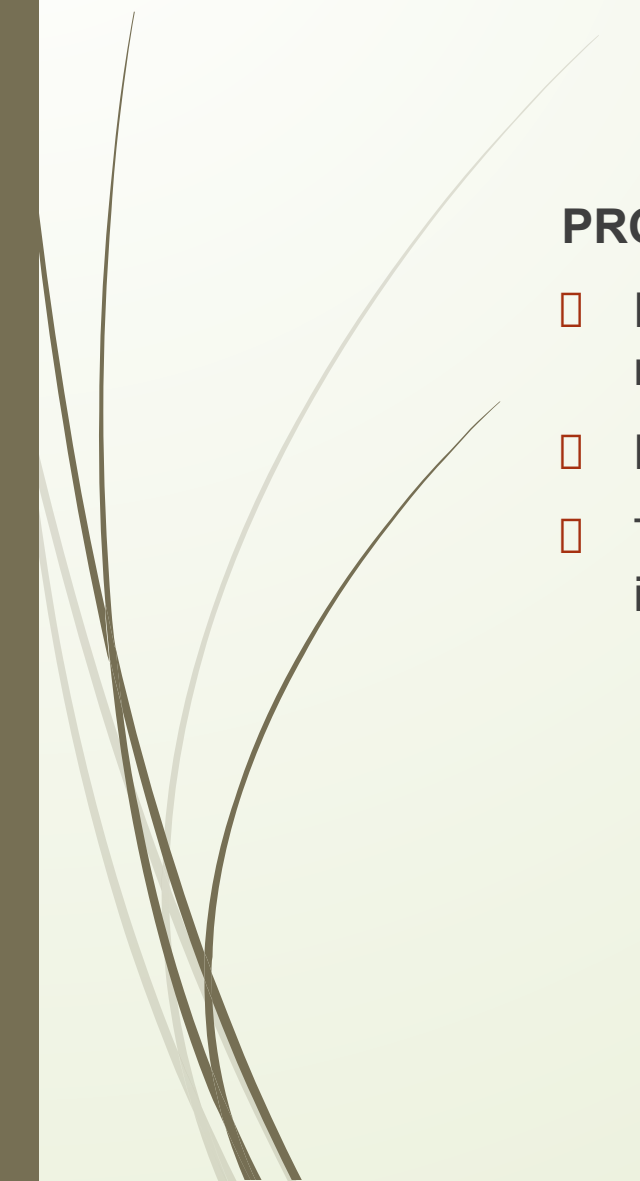
## CONS:

- ❑ Less accurate than internal monitors
- ❑ May restrict mom's movement since they require cords attached to a computer.
- ❑ Signal from the units can be easily disrupted if baby or mom are moving around a lot.
- ❑ May accidentally detect mom's heart rate.
- ❑ Often not effective in obese mothers (3), because they're unable to measure the tension of the uterus through the skin as easily.



# Pros and Cons of Internal Fetal Monitors:

## **PROS:**

- ❑ Provide continuous information about baby's heart rate. As baby wiggles and moves, the heart rate tracing will not get lost.
  - ❑ Provide accurate information about the intensity of contractions.
  - ❑ This can be helpful during a Pitocin induction to help the provider gauge the intensity of the contractions, to be sure they're not too strong.
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## CONS:

- ❑ Internal fetal monitors in labor are invasive.
- ❑ After they're placed, mom is virtually unable to move because movement could tug out the monitors.
- ❑ Require rupture of the amniotic sac, as well as some cervical dilation.



# conclusion



- ❑ Non reassuring fetal heart rate patterns are clinical red flags indicating potential fetal hypoxia or acidosis .
- ❑ Management includes rapid assessment , intrauterine resuscitative measures and timely delivery if the condition does not improve
- ❑ The decision on mode of delivery should be based on clinical findings , response to resuscitative efforts and the urgency of the situation.
- ❑ Multidisciplinary team work and continuous monitoring are essential to optimize both maternal and fetal outcome.



# Reference



- ❑ The essential Maternal and New born Clinical Care Guide lines for Uganda ( MOH- August, 2022)
- ❑ Antepartum Fetal Surveillance: ACOG Practice Bulletin, Obstetric and Gynecol.2021(PubMed)
- ❑ ACOG guidelines on Antepartum Fetal Surveillance. ( Sept. 2000).
- ❑ Fetal Heart Monitoring Practices at Public Hospitals in Northern Uganda,2020, E.Ayebale et al.

Thank you for Listening

