



THE UNIVERSITY
of EDINBURGH

Fetal monitoring by mothers as part of the Liberian Task-Sharing Program February 2021

Goals: the prevention and reduction in maternal,
paediatric and neonatal mortalities and
morbidity

Training for mothers in the monitoring of their unborn babies during labour

By end of 2020, 2,034 fetuses so far monitored in 3 hospitals (CB Dunbar, CH Rennie and Martha Tubman Memorial) with 2 more hospitals to begin in the near future (Phebe and Tellewoyan hospitals both Funded by MCAI and Irish Aid)

Mothers trained by 3 nurse aid volunteers in each hospital supervised by a qualified obstetric and neonatal clinician

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“I tell the midwife thanks for the care that was given to me. It empower me to listen to my own baby heart beat and I hope that other women will do the same.”



Monitoring intrapartum fetal heart rates by mothers in labour in public hospitals: an initiative to improve maternal and neonatal healthcare in Liberia

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- In low-resource settings with few health workers, Fetal Heart Rate (FHR) monitoring in labour can be inconsistent and unreliable. An initiative to improve fetal monitoring was initially implemented in two public hospitals in rural Liberia; a country with an extremely low number of midwives and nurses in the world
- A major cause of early neonatal death is birth asphyxia (more than 50% of such deaths)
- The initiative assessed the feasibility of educating women in labour to monitor their own FHR and alert a midwife of changes detected

Methodology

- 474 women admitted in labour without obstetric complications were approached at CB Dunbar and CH Rennie Hospitals
- 461 consented to participate (97%) and 13 declined
- Those consenting were trained to monitor their FHR using a sonicaid for approximately 1 minute immediately following the end of every uterine contraction and to inform a midwife of changes. If changes were confirmed, standard clinical interventions for fetal distress (lateral tilt, IV fluids, glucose bolus and oxygen) were undertaken and, when appropriate, accelerated delivery by vacuum or Caesarean section. Participants provided views on their experiences
- Neonatal outcomes regarding survival, need for resuscitation, presence of birth asphyxia and treatment were recorded.

Results of initial program

- 461 out of 474 women gave consent, of whom 431 of 461 (93%) completed the monitoring themselves. 387 of 400 women who gave comments, reported positive and 13 negative experiences
- FHR changes were reported in 28 participants and confirmed in 26.
- Twenty-four of these 26 FHR changes were first identified by mothers.
- Fetal death was identified on admission during training in one mother
- 13 neonates required resuscitation, with 12 admitted to the neonatal unit
- One developed temporary seizures suggesting birth asphyxia.
- All 26 neonates were discharged home apparently well
- In 2 mothers, previously unrecognized obstetric complications (cord prolapse and Bandl's ring with obstructed labour) accompanied FHR changes.
- Resuscitation was needed in 8 neonates without identified FHR changes including one of birth weight 1.3 Kg who could not be resuscitated
- There were no intrapartum stillbirths in participants

Some of the comments by mothers

- “The monitoring was fine, it gave me courage to go through my pain knowing my baby was fine”
- “Mother expressed her interest in measuring her baby FHR. She further stated due to the exercise she will always come to hospital for maternity care during pregnancy”
- “I felt that I am important when you told me to be a part of my baby monitoring process. It helps me a lot”
- “The monitoring was good. It help even us that cannot read or write listen to our own baby”
- “I thank God for the programme I am happy to hear my baby heart-beat. Please continue it”
- “The monitoring was good, it helps me give the power to push my baby”
- “Listening to my baby heart sound was very helpful to me. I felt that my right was respected as I took in my baby monitoring. Thanks for this program. I am happy”
- “I am happy to hear my baby heart. I knew that I was carrying a live baby in my womb”

Subsequent fetal monitoring program in Martha Tubman Hospital: July to December 2020

- Total undergoing FHR monitoring in the 6 months = 223
- Total number of abnormal FHR identified = 27
- Total number with birth asphyxia (that is low Apgar scores and need for resuscitation) but with no FHR changes detected = 13
- Number with birth asphyxia on FHR monitoring forms but not on NICU register = 4
- Number with birth asphyxia on NICU records but not monitored = 20

Results summary for MTMH November and December 2020

November No stillbirth No neonatal deaths

- 37 underwent maternal FHR monitoring; 9 abnormal FHR detected + 1 where low Apgar scores but no change in FHR
- 3 babies born at MTMH with birth asphyxia were not monitored

December No stillbirth No neonatal deaths.

- 27 underwent maternal FHR monitoring 7 abnormal FHR detected + 2 where low Apgar scores but no change in FHR
- 1 recorded in NICU record as birth asphyxia but according to FHR monitoring chart was not birth asphyxia

Conclusions of this ongoing program

- Women in labour are able to monitor and detect changes in their FHR. Most found the experience beneficial.
- The absence of intrapartum stillbirths after admission and the low rate of poor neonatal outcomes is promising but warrants further investigation
- This form of task sharing has major implications for low resource settings where in labour fetal monitoring is so weak