

## Heart Rate Monitoring with Handheld Doppler Device during Neonatal Resuscitation at Resource Limited Setting: Editorial

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### Abbreviations

LMIC: Low to Middle Income Countries; LRS: Low Resource Settings

The success and response to neonatal ventilation during neonatal resuscitation at birth is assessed by monitoring the heart rate. Thus, heart rate is the reliable indicator of neonatal ventilation during neonatal resuscitation. As per the NRP present guidelines, the heart rate assessment methods include. 1. Palpating umbilical cord pulsations, 2. Calculating the heart rate by auscultation 3. By pulse oximetry and 4. By ECG monitoring. One cannot count the heart rate accurately with precision by palpation of Umbilical cord pulsations and by auscultation of the neonatal heart. They are more dependent on experience of the resuscitator and prone for bias while counting especially when the heart rate is around hundred. Heart rate assessment by pulse oximetry depends on accuracy of application of probe, device quality, hypothermia and peripheral vasoconstriction of the baby's extremity or recording peripheral part. ECG based assessment is more accurate but needs skilled personnel and not easily available at low resource setting (LRS) in many maternity delivery rooms in LMIC countries.

Handheld fetal Doppler devices are portable devices, cheaper, easy to apply and use and used by many obstetricians in delivery rooms at LMIC countries. These devices reasonably provide the heart rate assessment with accuracy and precision. Moreover, the heart sounds are audible to naked ear and the heart rate is displayed with accuracy in no time or within very few seconds after probe placement. The audible heart sounds with variation in heart rates according to response to resuscitation can be appreciated by the patient relatives or parents when neonatal resuscitation done in their presence. One need not apply the ultrasound gel

medium for the probe placement as the wet moisture of the liquor is sufficient to act as medium for the probe. I have used this method for assessing the heart rate response while doing bag valve mask ventilation. I have found that this innovative handheld Doppler device technique very useful, effective and accurate in neonatal heart rate assessment and in decision making. The probe can be held in position on precordium by any supporting staff member especially when the neonatal resuscitation was carried out by single resuscitator at resource limited setting. This innovative technique using handheld Doppler device for assessing neonatal heart rate should be practiced by other resuscitators in their respective maternity-neonatal units for more data and for wider clinical application before recommendation [1].



Figure 1: Handheld fetal Doppler device

### Conflict of Interest

No conflict of interest.

### Funding

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### Bibliography

1. Neonatal Resuscitation Program, 8<sup>th</sup> Edition, AAP.