

The Future of Electronic Fetal Monitoring

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Background. Electronic fetal monitoring (EFM) has been used for intrapartum fetal surveillance over nearly five decades. EFM has not been shown unequivocally to improve perinatal outcomes. Most ancillary methods like fetal scalp blood sampling, oximetry or fetal ECG analysis intended to improve EFM's prognostic accuracy for fetal status have been abandoned in the United States. Shortcomings of visual interpretation of fetal heart rate (FHR) patterns persist and although automated systems for FHR analysis have been developed, such systems have not been widely used or scientifically proven to enhance intrapartum fetal surveillance.

Objective. To present future directions for intrapartum fetal surveillance systems that leverage the experience gained from traditional EFM and that could improve both risk assessment and prognosis.

Methods/Results. To review established and proposed techniques for improving the prognostic capability of EFM.

Conclusions. Alternative technologies to enhance the value of EFM exist. If industry sponsors could be recruited, these technologies could be applied in the foreseeable future and make significant and tangible impact on improving perinatal outcomes.