# BRIDGING THE HUMAN-MACHINE GAP

## Humanising CTGs with Global Majority Women's Voices
## An e-PPIE Co-Production Project

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## BACKGROUND

Research on women's perspectives regarding cardiotocography (CTG) during labour is limited, particularly among women from the Global Majority, who are often underrepresented in clinical research. This lack of data perpetuates inequalities in maternal health and research. To examine the acceptability of CTG-driven digital tools and identify access disparities, a Patient and Public Involvement and Engagement (PPIE) project was conducted with women as co-researchers. Drawing from their negative maternity care experiences, the co-researchers emphasised the importance of humanizing CTG interactions rather than focusing solely on digital solutions for improving outcomes. This need was then transformed into a workshop.

## AIM AND METHODS

This project aimed to explore how to enhance the current provision of CTG care for women from the Global Majority. One online PPIE workshop with four co-researchers took place and two co-researchers contributed offline. The workshop included a live artist and two research-facilitators.

## FUNDING

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## FINDINGS

### THE POSITIVES

**REASSURANCE**

- The CTG trace was something concrete the women could see and hear
- It was reassuring when classed as high risk, or when there was reduced foetal movement
- The machine could prove women right
- They felt safe, as their health and the babies health were being checked

"It was comforting to hear my baby's heartbeat"

### THE NEGATIVES

**RELIANCE ON THE CTG MACHINE**

- More trust placed into the machine than the person.
- Stress and tears based on the information from it.
- Readings seem objective, but can be wrong.
- Women aren't believed until CTG corroborated.
- Despite experience in labour and contractions, clinicians needed proof before listening to women.
- Overly relying on the CTG, poor staff skills without it, resulting in surprise and bad preparation.

"I hated you for not believing me"

**STRUCTURAL PROBLEMS**

- Lack of consistency.
- Staffing shortages.
- CTG culture is too strong.
- Litigation, CTGs ingrained as a defensive practice into care.
- Care in general has moved away from being 'with woman'.
- Less personal, more guidelines, structures.
- Doesn't adequately account for individual needs.

"Where's her heartbeat gone?"

**RESTRICTION OF MOVEMENT**

"I had to drag the machine behind me"

- Un-natural, un-intuitive positioning required.
- Left for an hour and a half, unable to move.
- Felt trapped, couldn't get comfortable.
- Wires and machine were dehumanising.
- Bad positioning during labour can lead to worse outcomes/more interventions.

"I know my body. What about me?"

**FEELING INVISIBLE**

- Clinicians would walk straight into the room to the CTG- lack of privacy.
- Birth plan went out of the window.
- Not knowing what's normal, especially if it was their first or only child.

**(UN)INFORMED CONSENT**

- Staff judgement if women refused the CTG, had to pacify clinicians.
- Saying 'no' should always be an option
- Thought it was a mandatory part of the process.
- Women excluded from the decision making.
- Not knowing the role of the CTG or how it worked, made anxiety worse, caused catastrophising.
- Lack of explanation led women to research on the internet for reassurance.
- Impact of CTG-induced anxiety on labour.

"It wasn't asked, it was just done"

**CLINICIAN KNOWLEDGE**

"We're the ones who live with the outcome!"

- Limited knowledge of contractions. More skills needed (e.g. IA).
- Clinicians can be *too* reassured by good CTG trace.
- Clinicians should reflect on the limited evidence on CTGs, shouldn't be mandatory/routine care.
- User error is common.

**LITTLE TRUST AND RESPECT**

- Treated with suspicion, called 'troublemaker'.
- Feels like clinicians hide away from the truth, using the effect of anxiety on labour as an excuse.
  - Clinicians can come across as deceitful due to witholding of information.
  - Infantilising women.

"I felt like an inconvenience for wanting to understand"

### HUMANISING CTGs

#### WHAT COULD BE DONE?

**ANTENATAL EDUCATION**

- CTG information should be introduced early on in antenatal care.
- Women need awareness well before going into labour.
- Honest explanation of function and purpose, risks and benefits.
- Evidence-based and unbiased resources.

**TRUST**

- Listen to women, believe them.
- Consider needs of the individual, including positioning, privacy, information, birth plan etc.
- Include women in the decision-making at all times.

**TRAINING**

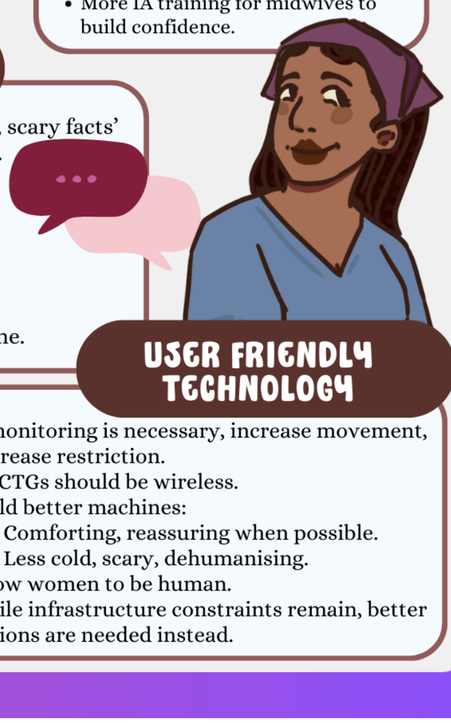
- Improve communication skills and discussions around CTGs.
- Understand that CTGs can be wrong, and should not be relied upon as only source of information.
- Reflect that CTG findings can trigger a cascade of interventions.

**IMPROVE GUIDANCE**

- CTGs should not the first port of call for baby's heart monitoring.
- A tool to use alongside other measures e.g. IA.
- Up to staff, not women, to challenge culture.
- Include protection for clinicans regarding litigation.
- More IA training for midwives to build confidence.

**OPEN COMMUNICATION**

- Clinicians should not shy away from 'icky, scary facts' because they think women can't handle it.
- Information is power.
- Do not hand off autonomy.
- Keep women in the loop.
- Leave ego at the door.
- Compassion, openness, and honesty.
- A chance to ask questions!
- Focus more on the person than the machine.



**USER FRIENDLY TECHNOLOGY**

- If monitoring is necessary, increase movement, decrease restriction.
- All CTGs should be wireless.
- Build better machines:
  - Comforting, reassuring when possible.
  - Less cold, scary, dehumanising.
- Allow women to be human.
- While infrastructure constraints remain, better options are needed instead.

## CONCLUSION

Co-researchers identified areas of improvement and future research questions to close the current human-machine gap between women, clinicians and CTG technology. These areas included the need for improving trust, communication and consent by providing unbiased and evidence-based information to support women's decision-making about CTGs. Equitable and accessible PPIE is instrumental in addressing health and research disparities and improving perinatal health.

## REFERENCES

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Let's link