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Connected Care

Freedom to move, freedom to focus on quality birthing care

Exploring how the Philips Avalon Beltless Solution can help enhance the labor and birthing experience for staff and laboring women

Investigating the real-world benefits of the Philips Avalon Beltless Solution



Study overview

Focus

In this study^{1, 2}, led by **Dr Deborah Fox** (Centre for Midwifery, Child and Family Health, University of Technology Sydney), the Philips Avalon Beltless Fetal Monitoring Solution was trialed on 110 laboring women at a public teaching hospital located in Sydney, Australia. A focus group pertaining to midwives' experiences of using CTG was conducted prior to the trial. After the trial, midwives were asked about their experiences of using the Avalon Beltless Fetal Monitoring Solution.

Setup

This single-site feasibility study was conducted between January and July 2020 at the Royal Hospital for Women (RHW) in Sydney.

- **Midwives** involved in the direct clinical care of at least one laboring woman trialing the Avalon Beltless Solution took part in pre/post-intervention interviews and focus groups.
- Laboring women were invited to trial the Avalon Beltless Solution at equal to or greater than 36 weeks gestation. These women had singleton pregnancies, were planning to give birth vaginally and had obstetric indications for continuous intra-partum fetal monitoring.

Objectives

The study aimed to test the clinical feasibility and utility of the Avalon Beltless Fetal Monitoring Solution in an Australian maternity care context, by means of a clinical pilot including qualitative evaluation.

Key findings

The study team found that the Avalon Beltless Solution enabled greater freedom of movement for women than wired CTG, helping optimize bodily autonomy. Midwives could focus less on the technology and more on supporting the physical and emotional needs of women during labor.

Birthing is dynamic – so your care delivery tools should be, too

Maternal and fetal caregivers understand the importance of closely monitoring fetal wellbeing during labor. Particularly in complex or high-risk pregnancies, continuous electronic fetal heart rate monitoring (CEFM) is recommended by international guidelines³ - with cardiotocography (CTG) often used during labor.



Movement is natural and beneficial during labor

Staff must work with the woman and her family to provide safe, woman-centered care that allows for the greatest possible comfort and birthing autonomy. However, conventional wired forms of CTG monitoring require the laboring woman to wear two tight elastic belts around her abdomen, and to effectively be 'tethered' to a machine by cables. This technology can restrict the woman's mobility during labor and may limit her choice of position while giving birth.

I think there's also a bit of stigma attached with being [...] strapped to the bed. I get a lot of women who are like "Oh, I couldn't think of anything worse than being strapped down to the bed." Evidence demonstrates that freedom of movement and positioning during childbirth can lead to a shorter duration of labor, lower likelihood of C-sections and fewer epidurals, and is not associated with any negative effects for women and their babies.^{4,5} Furthermore, freedom to move strengthens women's sense of choice and control during their birth experience.⁶

Philips Avalon Beltless Solution

Philips has developed the **Avalon Beltless Fetal Monitoring Solution** to help caregivers meet the growing demand for comfortable, reliable fetal monitoring technology.

A research team from the University of Technology Sydney, Australia, identified a need to explore how this innovative technology impacts the work of midwives, alongside the experiences of women as they give birth. This white paper outlines the study approach and provides insights into the real-world capabilities of the Avalon Beltless Solution.





Capturing real-world views and insights

This single-site feasibility study explored the views and experiences of the women, midwives and obstetricians involved, using focus groups and semi-structured interviews. In particular, the study team focused on the impact of the Avalon Beltless Solution in facilitating freedom of movement in labor.

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Identifying the challenges of conventional CTG monitoring



It becomes all about the machine

Some midwives participating in during the study noticed that when caring for women who were being continuously monitored during labor, the focus of the room often shifted from the woman to the machine.

The CTG machine dominates every birth room. It is the thing that people focus on... they talk to the machine. Husbands, partners watch it.

Midwife 8, Focus Group 1

Many midwives felt that having a CTG monitor fixed in the birth room was an unhelpful distraction for women in labor and could draw attention away from the physical sensations of childbirth.

"I've had women that want to face the machine so that they can see it and hear it." (Midwife 2, Focus Group 1)

"[The woman is saying] the green number went up to 40, I must be having a contraction." (Midwife 8, Focus Group 1)

Because many women with complex pregnancies and/or risk factors are known to experience increased feelings of stress and vulnerability⁶, it is desirable to provide fetal monitoring technologies that optimize physiological processes, strengthen women's capabilities and increase their sense of choice and control. In this way, Philips believes that technology can aid the creation of a birthing environment and care approach that supports the mother and midwife in focusing on the birth, rather than the machine.

Supporting women's bodily autonomy

Several midwives commented that **conventional wired CTG** could significantly restrict women's freedom of movement during labor and make the obstetric bed the primary focus of the room. This tended to result in women laboring on the bed rather than remaining active.

"[Wired CTG] is very restrictive for women's positioning in labor and their ability to move around." (Midwife 6, Focus Group 1)

Many midwives also observed that wired CTG resulted in a loss of autonomy for women as they had to ask for permission and assistance to detach from the machine to go to the toilet.

Wireless CTG (also known as telemetry) was often preferred over wired CTG alternatives where available, as this was deemed to support the woman's ability to remain mobile.

"I would try the [beltless device] first... Because if you can get it working, it just frees up the rest of your time... Every time they move, you're readjusting... So if it can free up those issues, then it's worth a shot every time." (Midwife 12, Focus Group 2)

Overall, the **Avalon Beltless Solution** was favored by midwives over CTG devices when the trace was continuing reliably. It was thought to be the most comfortable for women due to the lack of belts and the lightweight nature of the device.

[...] It works really well and I love it.

Midwife 3, Focus Group 2





Being 'with woman', not with machine



All participating midwives were frustrated by the need to constantly 'fiddle' with CTG transducers to maintain good contact with the fetal heart rate. This 'fiddling' often disturbed the laboring woman, and most were concerned that this interrupted the woman's focus. Furthermore, the loss of contact and need to reposition the transducer was a disincentive for women to move in labor.

I think I'm worrying more about maintaining that contact than [encouraging the woman to try] all these positions because you're afraid you're going to lose contact.

Midwife 6, Focus Group 1

Some midwives reported that the Avalon Beltless Solution allowed them to be more available and present with the woman. Unlike conventional CTG transducers, once applied to the abdomen the Avalon Beltless Solution required no further adjustments when the woman or fetus moved. This meant that the midwife gained the freedom to provide more woman-centered care:

I feel like you can just [...] be there with them and talk them through what they're doing [...] being present, instead of constantly worrying about where the fetal heart is instead of focusing on how they're laboring and talking them through.

Midwife 13, Focus Group 2

Most midwives participating in the study felt that the Avalon Beltless Solution positively impacted their workload and reduced stress. Several also commented on advantages for women requesting an epidural, as it enabled fetal monitoring to continue while the woman was crouching forward for epidural insertion.

Woman-centered innovation designed to transform obstetrical care

Midwives participating in this study felt the restrictive nature of wired CTG made it an undesirable option for monitoring the fetal heart rate, as it left women feeling strapped to the bed with a reduced freedom of movement. By comparison, wireless CTG was felt to provide greater scope for ambulation, but the need to constantly re-position the transducers restricted the ability of midwives to be 'with woman', rather than 'with machine'.

The goal is to help midwives focus on the woman and her unborn baby, while supporting the mother's freedom of movement and ability to give birth in the way that is most natural to them. Compared to conventional CTG methods, the study concluded that the Avalon Beltless Solution could enable midwives to provide more woman-centered care for those experiencing complex pregnancies.

This feasibility study found that most stakeholders were positive about the potential for the Avalon Beltless Solution to replace conventional CTG devices. Particular benefits highlighted by participating women included the comfort afforded by the beltless design and the lightweight nature of the device, while midwives reported that when no technical difficulties occurred, they were able to focus less on technology and more on supporting women's physical and emotional needs during labor.

Philips Avalon Beltless Solution: A better move for women and caregivers

Recently awarded the **2021 Frost & Sullivan Product Leadership Award**, the Philips Avalon Beltless Solution has been recognized by industry experts as a revolutionary innovation in the fetal and maternal monitoring market with unmatched rankings in quality and reliability, coupled with superior device design and an ability to meet the needs of mothers during the pandemic.

Part of the Philips Obstetrical Care Solution

The Philips Avalon Beltless Solution is an integral element of our comprehensive Philips Obstetrical Care Solution, together with our IntelliSpace Perinatal Obstetrical Information System. Together, this combination helps ensure effective, reliable surveillance of both mother and fetus.

To find out more about the Philips Avalon Beltless Solution and the broader Philips Obstetrical Care portfolio, please contact your local Philips sales representative or visit www.philips.com/fetalmonitoring.





Fox, D., Coddington, R., Scarf, V., Wanting to be 'with woman', not with machine: Midwives' experiences of caring for women being continuously monitored in labour, Women and Birth, 2021, ISSN 1871-5192. https://doi.org/10.1016/j.wombi.2021.09.002
Fox, D., Coddington, R., Scarf, V. et al, Harnessing technology to enable all women mobility in labour and birth: feasibility of implementing beltless non-invasive fetal ECG applying the NASSS framework, Pilot Feasibility Stud 7, 214, 2021, ISSN 2055-5784. https://doi.org/10.1186/s40814-021-00953-6.
Ayres-de-Campos, D., Spong, C. dY., Chandraharan, E., & FIGO Intrapartum Fetal Monitoring Expert Consensus Panel (2015). FIGO consensus guidelines on intrapartum fetal monitoring: Cardiotocography. International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics, 131(1), 13-24. https://doi.org/10.1016/j.ijgo.2015.06.020.
Lawrence A, Lewis L, Hofmeyr G, Styles C. Maternal positions and mobility during first stage labour. Cochrane Database Syst Rev. 2013;(10):CD003934. https://doi.org/10.1002/14651 858.CD0003 934.pub4
Priddis H. Dahlen H. Schmied V. What are the facilitators: inhibitors, and implications of birth positioning? A review of the literature. Women Birth. 2012;25(3):100-6

Priddis H, Dahlen H, Schmied V. What are the facilitators, inhibitors, and implications of birth positioning? A review of the literature. Women Birth. 2012;25(3):100–6. Berg M. A midwifery model of care for childbearing women at high risk: genuine caring in caring for the genuine. J Perinat Educ. 2005;14(1):9-21. doi:10.1624/105812405X23577

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