

Empathy in the design and development of women's health technology

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The development of women's health technology can be significantly enhanced with an empathetic design process. Our Director of Women's Health, Kate Marchio, has identified three ways to boost empathy, potentially improving women's healthcare experiences and outcomes, while offering a route to commercial differentiation.



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As healthtech companies look to better address women's health and address the historic gender data gap, woman-centred product design has a critical role to play. It should be firmly rooted in an understanding of women's needs and feelings. In other words, empathy. Yet, while empathy is easy to define, it is difficult to pin down and harness in a product development context.

We believe three key approaches can be used to overcome this challenge and imbue women's health technology products with empathy. Enhancing design and development in this way could bridge gender disparities in healthcare experiences and outcomes. Companies that get it right have an opportunity to achieve competitive and commercial differentiation in this rapidly growing market.

The gender data gap

As Caroline Criado Perez explains in her book *Invisible Women: Exposing Data Bias in a World Designed for Men*¹ "for millennia, medicine has functioned on the assumption that male bodies can represent humanity as a whole". This assumption has led to serious shortfalls in the quality and value of healthcare for women.

Statistically, women are 50% more likely to be misdiagnosed than men following a heart attack². A study of post-operative patient treatment³ revealed that women are 'significantly' more likely to be prescribed sedatives, rather than painkillers, when presenting with pain. And healthcare needs that are unique to women – such as those related to menstruation and menopause – have a long history of under-funding and under-research.



1. Understand that empathy matters

Failure to understand, or respond to, how women feel can have a hugely detrimental impact on their healthcare outcomes.

Take the speculum used to provide access to the cervix in gynaecological examinations and procedures. The 'duck-billed' design most commonly used today has barely changed in a century. In fact, primitive forms of specula bearing a resemblance

to today's models have been found in archaeological digs dated to 79 AD. Yet while the device might be effective from a technical perspective, its enduring use does not reflect an empathetic approach. 'Fear of the speculum' and 'feelings of vulnerability during pelvic exams' are significant barriers to cervical screening globally.



The **World Health Organization's** Cervical Cancer Elimination Initiative⁴ launched in 2020 emphasises screening as a key strategic pillar. However, if the standard tool used in examinations hinders screening targets, progress will be limited. According to the Professor of Biomedical Engineering at Duke University, Dr Nimmi Ramanujam, "The mortality rate of cervical cancer should absolutely be zero percent because we have all the tools to see and treat it."⁵ Nevertheless, around 500,000 women are diagnosed with cervical cancer each year, and more than half die, with the majority of cases and deaths in low-income countries.

Clearly, it's time to challenge and rethink the status quo for cervical examination. Alternative approaches, based on woman-centred, empathetic design, could play a

critical role in the elimination of cervical cancer. A low-cost product developed by **Calla Health**, the Callascope⁶, is one contender. Directly inserted by the healthcare practitioner or the patient, it eradicates the need for a speculum and offers a simpler, more comfortable way to provide visual access to the cervix. The *Callascope* achieved FDA clearance in 2018, and it's around one tenth of the price of a traditional colposcope.

All stakeholders involved in women's health technologies need to understand the vital role of empathetic design in improving health outcomes. Empathy is a critical design factor, not a 'nice to have'.

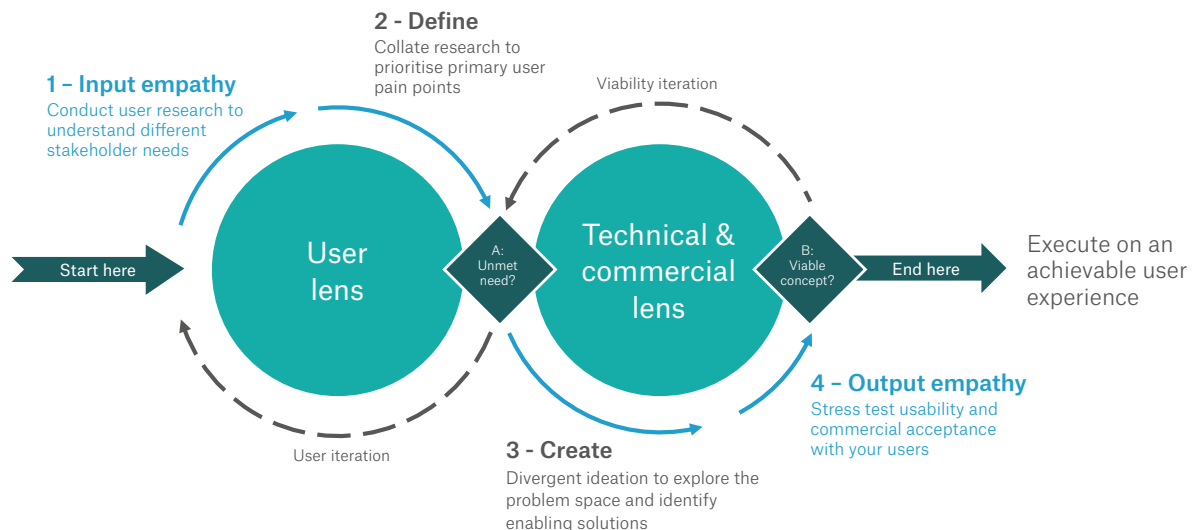
2. Develop and apply an empathetic design process

Achieving the necessary depth of empathy takes time and commitment. It’s about taking intentional steps to connect with women’s feelings and requires product developers to go beyond the usual design protocols.

At the start of the design process, empathy is applied to uncover unmet needs. Techniques such as observation (e.g. journey mapping, shadowing, journaling) and engagement (e.g. 1:1 user interviews, group chats, co-creation workshops) need to be handled sensitively. Talking about women’s health subjects can make both men and women feel uncomfortable. Some women would prefer to discuss these matters with other women rather than men. It’s important to create a safe space where women feel at ease so that real, valuable insights can be uncovered.

These traditional approaches for eliciting insights are just the start. They need to be combined with more immersive techniques involving active participation in procedures or full day-in-the-life scenarios. With ethnographic research like this, it pays to go the extra mile, experiencing the perspectives and potential vulnerabilities of the subject. So, to return to the speculum example, product developers might literally put themselves in the gynaecology chair.

For empathy to have a meaningful impact on women’s health technology, it needs to infiltrate the entire design process. As Figure 1 indicates, there is more to this than defining unmet needs. Ideation and testing processes need to revisit the insights and refer back to the empathy principles. It’s also useful to embrace additional feedback and input from women via co-creation strategies and iterative user testing.



Key
A = If you don't have an unmet user need – think again
B = If your concept isn't technically feasible or commercially viable, go back around and find a different way

Figure 1: Every design process should be infused with empathy

This mindset needs to be rigorously maintained right up to the point of market launch. As regulatory matters and commercial priorities such as manufacturability come to the fore, it may be necessary to reassert the importance of product features that are based on empathetic insights.



An empathy-driven HPV treatment

Sagentia Innovation was involved in a project for Cevira® by Photocure⁷. Cevira is an in-development treatment for cervical persistent oncogenic Human Papilloma Virus (HPV) infections and pre-cancerous lesions. It consists of a fully integrated drug delivery and light device applied intravaginally by a gynaecologist. The diseased area is selectively targeted by the device and the patient can continue with daily activities during

treatment. Once treatment is complete, the device is easily removed by the patient.

Cevira is injection moulded, so a parting line or seam inevitably occurs where the parts of the mould meet. Awareness of this design limitation, combined with an empathy-led product development process, enabled us to adapt the design so it wouldn't compromise women's comfort or prevent their use of the device.

3. Take action to ensure empathy is upheld

Even with the best intentions, it can be difficult to maintain empathy for the duration of product development. But proactive steps can be taken to ensure it is fully incorporated with the end-to-end process.

Firstly, think about ways to diversify the product development team. A multidisciplinary, representative team can bring immense value when it comes to addressing gender norms and biases. Think about this in terms of age, religion, and other factors besides gender. Criado Perez' *Invisible Women* highlights the pitfalls of healthcare solutions based on 'Reference Man' (Caucasian, aged 25-30, and weighing 70kg). It's important to avoid falling into the trap of creating a similar 'Reference Woman'.

Another worthwhile approach is to appoint an empathy champion who represents the

voice of the user at every stage of product development. Their job is to interrogate decisions and advocate for the user, ensuring empathetic insights are not side-lined and continue to be applied throughout the product development journey.

Finally, there is great value in bringing a 'beginner's mindset' to empathy-driven development of women's health technology. This is about identifying and challenging unconscious bias to ensure the design process is approached with a curious, open mind. This applies to women as well as men, since gender bias is deeply entrenched in the way most people see and experience the world. As Criado Perez explains, the gender data gap "is simply the product of a way of thinking that has been around for millennia and is therefore a kind of *not* thinking."



The commercial benefits of empathetic design

There's no disputing the fact that women's healthcare requires more attention, research, and funding to address gender disparities. Women's health technology has an important role to play. As well as facilitating better diagnosis and treatment it can gather better data to build a more complete picture of conditions that are unique to women or present differently in women.

Analysts predict rapid growth in this category: 2020 market size was \$40.2 billion, and it's projected to grow at an average CAGR of 13.3% to reach \$75.1 billion by 2025⁸. This is a potentially lucrative

space, but it's also competitive, and new developments need to be highly relevant with strong differentiation. Applying empathetic principles to women's health technology design and development is critical. This is equally true for existing health technology companies looking to make inroads and start-ups looking for financial backing. What's more, we have a responsibility as leaders in women's health to bring inclusivity, inclusion, and trust into the design process. By placing greater emphasis on women's needs and feelings we can make healthcare better for all women, everywhere.



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