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AI and Women's Health: Closing the Gap Before It Widens

How Responsible AI Can Rewire Healthcare for Equity, Innovation, and Global Impact



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Rewiring Healthcare for Equity and Impact



Women face profound inequities in healthcare, from underfunded research to delayed diagnoses, limited treatments, and a persistent trust gap. These disparities not only undermine women's well-being but also constrain global economic growth and innovation. Artificial intelligence (AI), if developed and deployed responsibly, can help close these gaps, but only if women's unique health needs are embedded into its design from the start.

The Research Gap

The numbers reveal a stark imbalance. Less than 2% of global healthcare R&D is dedicated to female-specific conditions beyond cancer. Meanwhile, conditions like premenstrual syndrome (PMS) — which affects 20–40% of women of reproductive age — receive a fraction of the funding allocated to chronic conditions like diabetes.¹

According to the World Economic Forum, women spend 25% more of their lives in poor health than men.² Many of their conditions remain under-researched, poorly diagnosed, and under treated. Only 10% of clinical trials report sex-specific results,³ leaving significant blind spots that cascade into care delivery.

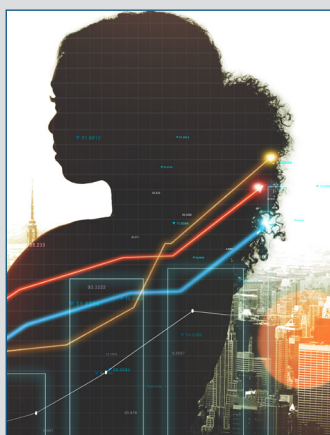
This neglect is not just a health issue; it is a systemic barrier to equity, economic growth, and innovation. Artificial Intelligence (AI) offers transformative potential, but it must be developed and applied with intentional focus on closing women's health gaps, accounting for women's unique biology, life stages, and social determinants of health.

The Human Cost: What Women Face Daily



We have all heard stories of misdiagnoses, lack of provider empathy, or women pushing through years of being poked and prodded with incomplete answers. Whether a woman presents with jaw pain and nausea that is misdiagnosed as a heart attack, or the years of debilitating pelvic pain are written off as “normal women's pain” or psychological stress, there is a clear opportunity to train AI-powered diagnostic tools that could analyze symptom trends, female physiological patterns, and prevent prolonged complications due to misdiagnosis.

The Economic Imperative



The statistics on women's underrepresentation in research are striking, but their implications go beyond individual health. The economic costs of neglecting women's health ripple across society, affecting productivity, healthcare costs, and even GDP.

The health gap is not just a clinical problem; it's an economic one. A 2024 McKinsey Health Institute analysis shows that “closing the women's health gap could boost the global economy by \$1 trillion annually by 2040.”⁴ Addressing just nine high-burden conditions disproportionately affecting women could unlock more than \$500 billion in economic gains each year.

Yet without dedicated focus, these opportunities are lost. The costs of neglect, increased disability, reduced productivity, and rising health expenditures ripple across societies and generations.



The Trust Gap

Even as AI offers new hope, trust remains fragile. A 2024 Pew Research study found that “43% of women worry AI cannot accurately diagnose health issues, compared with 27% of men.”⁵ The gap is not unfounded: historically, algorithms have been trained on datasets skewed toward men, leading to misdiagnoses.

One example: research published in *Circulation* found that AI models trained on male-dominated cardiac datasets were significantly less accurate at predicting heart disease in women, whose symptoms often differ from men’s.⁶ This reinforces the sense among women that digital innovation may repeat the same exclusions that have long defined healthcare.

The World Economic Forum’s 2023 report further underscores this gap: only 44% of experts said women’s perspectives are considered in AI design, compared with 75% for men.⁷ Without intentional course correction, AI risks entrenching, rather than reducing inequity, if they are built on incomplete or non-representative data sets.



2025 US Government Commitment

After decades of underinvestment, women’s health is finally gaining visibility at the highest levels of government. Yet, as these efforts grow, their future depends on sustained commitment — since political cycles and shifting priorities often stall or reverse progress.

The White House Initiative on Women’s Health Research unlocked over \$1 billion in funding in less than a year, channeling resources through NIH, ARPA-H, and other agencies.⁸ The Senate Appropriations Committee voted this year to provide NIH with a \$1.77 billion increase for fiscal year 2025, signaling a sustained commitment to research.⁹

Still, global political and funding cycles remain fragile. Some programs risk delay or rollback as priorities shift, making it essential for other actors to carry the torch.

Private Organizations Carrying Momentum



While public investment is critical, private innovators and advocacy organizations are stepping up to keep the momentum alive. From femtech startups raising record rounds to cross-sector alliances like WHAM (Women’s Health Access Matters) and WHIT (Women’s Health Innovation & Translation), these actors are ensuring the research and AI revolution does not lose steam, even when policy windows shift.

Equally important are groups shaping awareness and policy. The Society for Women’s Health Research (SWHR) has been a leading voice in highlighting how sex differences affect health outcomes and in advocating for greater inclusion in research and trials. Globally, networks like the ECHalliance - The Global Health Connector are convening stakeholders to surface challenges and opportunities in women’s health, ensuring that innovations and AI-driven approaches address needs across diverse populations.¹⁰

Together, these efforts underscore a shared message: momentum cannot stall if AI is to fulfill its promise in reshaping women’s health.



AI Making a Difference

Despite challenges, real-world examples show AI's power to improve women's health when inclusivity is prioritized from the start.

United Kingdom – AI in Breast Cancer Screening

The NHS is running the world's largest breast cancer AI trial to test whether algorithms can support radiologists in reading mammograms. Early findings suggest AI can improve detection rates and reduce false positives, while also highlighting the importance of ensuring performance across diverse patient populations such as South Asian and Afro-Caribbean women.¹¹

Rwanda & Sub-Saharan Africa – AI-Assisted Cervical Cancer Screening

Pilot projects in Rwanda and other African countries are using AI-powered smartphone imaging tools to help nurses and primary care workers detect cervical abnormalities in low-resource settings. These programs are expanding screening capacity, improving early detection, and demonstrating how AI can bridge critical health equity gaps.^{12, 13}

Global Model – IARC Cervical Screening AI

The International Agency for Research on Cancer (IARC) has developed an AI system that outperforms traditional cytology screening methods for cervical cancer. Designed to work offline and optimized for low- and middle-income countries, the tool is a major step toward scalable and equitable cancer prevention worldwide.¹⁴

A Path Forward

The opportunity is clear: by leveraging AI responsibly, we can accelerate breakthroughs in diagnostics, personalized care, and prevention for women worldwide. But progress depends on intentional collaboration between governments, private innovators, advocacy organizations, and women themselves.

Key priorities include:

- 1 Inclusive Data:** building sex- and gender-specific datasets to prevent algorithmic blind spots with particular attention to diverse ethnic and socioeconomic populations.
- 2 Equity in Innovation:** prioritizing conditions disproportionately affecting women, not just those with large existing markets, including region-specific health challenges
- 3 Trust Building:** ensuring transparency, accountability, and the meaningful inclusion of women in every stage of AI development, with particular focus on engaging communities that have been historically excluded from medical research.
- 4 Global Collaboration:** sharing datasets, algorithms, and best practices across countries to ensure AI solutions work for women worldwide, not just in high-resource settings.

The Revolution's Next Phase

Women's health is finally receiving long-overdue attention — but the work is not finished. AI has the potential to transform care, improve equity, and unlock enormous societal value. Achieving that potential requires not only investment but also trust, transparency, and the active participation of women in shaping the digital tools that will define their care.

If AI is to rewrite the future of women's health, now is the time to embed equity into every line of code and every dataset we build. The revolution has begun. Now, let's keep it going.



Sources:

¹Women's Health Access Matters (WHAM), 2023; ²World Economic Forum, Closing the Women's Health Gap, 2023; ³Society for Women's Health Research (SWHR), Clinical Trials Report, 2022; ⁴McKinsey Health Institute, Closing the Women's Health Gap, Jan 2024; ⁵Pew Research Center, AI and Healthcare Survey, 2024; ⁶Circulation Journal, "Artificial Intelligence and Sex Differences in Cardiovascular Care," 2021; ⁷World Economic Forum, Global Gender Gap Report, 2023; ⁸The White House, Fact Sheet: Women's Health Research Initiative, 2024; ⁹White House, FACT SHEET: Biden-Harris Administration Announces \$110 Million in Awards from ARPA-H's Sprint for Women's Health to Accelerate New Discoveries and Innovation, October 23, 2024; ¹⁰ECHAlliance, The Global Health Connector, 2024; ¹¹The Guardian, "NHS to launch world's biggest trial of AI breast cancer diagnosis," February 4, 2025; ¹²Paris Peace Forum, "Cervicaid: Cervical Cancer AI Screening Aid," 2023; ¹³BMC Digital Health, "Artificial intelligence-based approaches for cervical cancer screening in Africa," 2024; ¹⁴International Agency for Research on Cancer (IARC), "IARC-developed AI outperforms standard tests in a leap towards global health equity," November 2024.