



Addressing health barriers through technology

#Women4Health

DaringCircles Women & Access to Health

by the Women's Forum for the Economy & Society

Foreword from Chiara Corazza

Women are the majority of caregivers, and for example some 80% of mothers are the primary health care decision makers for their children. Despite this, the inequalities in women's healthcare compared to men are pervasive. The most effective or appropriate treatments for women are often unknown because there is less health data on women than men. Many women cannot access mental healthcare because of outdated attitudes and cultural stigma. For every 100 men aged 25–34 in poverty, there are 122 women, which means women are more likely to struggle to pay for healthcare.

There is plenty that businesses, universities, NGOs, and governments can do. They can provide funding or mentorship to women-founded tech companies, which are more likely to address issues affecting women. They can support campaigns and initiatives to end stigma. 80% of Indian women, for example, still feel obliged to seek permission from husbands or other family members to visit a health centre. They can fight prejudice against mental illness, create training programmes that address healthcare providers' unconscious gender bias, and sponsor research to address the lack of women's health data.

I am proud that the Women's Forum for the Economy and Society has made a start on this issue. We have brought together businesses and organisations to be partners to this Daring Circle and take a common position. We led a Call for Initiatives to identify startups working hard to improve women's access to health, and we facilitated mentorship between the top candidates and our partners. I extend warm thanks to them all, and everyone who has given their time and expertise to produce this paper.

Today, we are publishing an authoritative primer on six of the core inequalities women face worldwide and how technology can address them. These include a dearth of data on women's health, barriers to mental healthcare, limited information and physical barriers to care, lack of reliable health records and lack of time or ability to pay for access. But there is much more work to do. It is particularly important to raise the profile of women's access to health because it goes relatively unacknowledged compared to others, but affects billions of women around the world.

Our work demonstrates an idea which is at the heart of the Women's Forum: that when organisations work together they can achieve more than they can working alone. Coalitions, coordination and cooperation enable businesses to make progress on some of the most urgent issues facing our societies, such as improving women's access to health. This is how we engage for impact.



CHIARA CORAZZA

Managing Director
Women's Forum
for the Economy and Society

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About the Women & Access to Health Daring Circle

The Women & Access to Health Daring Circle seeks to advance solutions to improve women's access to health, and address the gender gap in access to health, understand the barriers to women leading in healthtech, support promising tech solutions, and raise these issues as a key strategic consideration of companies, governments, and other buyers of products and services.

The Daring Circle on Women & Access to Health is an initiative of the Women's Forum for the Economy & Society, bringing together an ecosystem of partners to develop tangible proposals and solutions to today's most pressing issues. Led by AXA and Sanofi, the Daring Circle's Strategic Members are BNP Paribas and Google in collaboration with RB as a Global Partner and Gavi, the Vaccine Alliance, as an Institutional Partner. The Circle is supported by Mercer as Knowledge Partner.

The Women's Forum for the Economy & Society is a global platform of actions to highlight women's voices and build together a more inclusive economy. With the Daring Circles, the Women's Forum's ambition is to drive innovative solutions at scale and at pace through collaboration between businesses, public entities, NGOs and the media to have impact on issues where women are disproportionately affected and where their leadership is most urgently needed. The Women's Forum for the Economy & Society is a Publicis Groupe company.

Our work

Our first research paper, 'Women & Access to Health: Addressing health barriers through technology' provides a briefing on six of the core inequalities women face worldwide and how technology can address them. The paper argues for closing the gender gap in who funds, designs, and builds that technology, and ensuring that women have access to investment, insurance, talent, skills, and support.

The Daring Circle also empowers and supports healthtech leaders. We led a competition to find the most promising startups improving women's access to health and awarded them prize money and access to mentorship from our partners.

We are facilitating mentorship between the partners and the five winning startups, which provide services ranging from supporting efficient and accurate vulvar and cervical examinations, to ensuring that babies' medical histories are available to health officials on a wearable necklace, and an at-home test to help women understand their fertility.

In the future, the Daring Circle will continue to provide research, recommendations, and communications to work towards closing the gap in women's access to health worldwide.

DaringCircles

by the Women's Forum for the Economy & Society

Key barriers to women's access to health

Globally, women are less likely than men to have access to qualified, equipped, and appropriate health services where and when they are needed. Women face six key barriers:

- 1 | Lack of healthcare providers informed by sex-disaggregated research and data** – A structural lack of research and data on the effects of certain therapies on women's health means that the most effective or appropriate treatments for women are often unknown.
- 2 | Barriers to accessing mental healthcare** – Cultural stigma and constraints particular to women prevent them from seeking and acquiring the mental healthcare they need.
- 3 | Limited awareness or access to information** – When girls and women have better access to information, they also have better health outcomes. Awareness is a particular issue for women who have less contact with health services, including in remote areas.
- 4 | Limited physical access to care** – In both the developing and developed world, rural inhabitants face lower life expectancy, poorer health status and a shortage of healthcare providers. Poor road or transport infrastructure and lack of safe transit or vehicle access means patients must walk to a clinic or hospital, and hinders health workers from reaching patients where they are.
- 5 | Lack of confidential or reliable health records or identification** – Women who are vulnerable or undocumented often lack identification and reliable, consistent health records and care, which can mean exclusion from health services.
- 6 | Lack of means to pay or time-poverty** – Finances are a key barrier to healthcare; people who lack the means to pay are at greater risk of health status deterioration, chronic illness and premature death than wealthier people. Globally, for every 100 men aged 25-34 living in poverty, there are 122 women.

In the coming decades, technology will inevitably change the shape of healthcare in the developed and developing worlds. While many of the above issues require infrastructural, societal or economic change, technology will make a difference too. It could replicate these inequalities or reduce them.

If we want healthtech to chip away at the gender-based global health inequalities in assumptions, thinking, data, and practice, we must close the gender gap in who funds, designs, and builds that technology. That means ensuring women have access to investment, insurance, talent, and equipping more women with skills, confidence, and support.

Companies, governments, universities, and international institutions need to do more to address these health inequalities and do more to ensure there is a pipeline of female talent to produce the next generation of women's healthtech solutions.

This paper also offers advice from current leaders in the healthtech space on how women can develop and grow successful healthtech companies.

“As a circle of partners, our goal is to improve women’s access to health and to get women’s leadership in healthtech onto the agenda of international institutions, companies, institutes of higher education and others.”

Key calls to action

As a circle of partners, our goal is to improve women's access to health and to get women's leadership in healthtech onto the agenda of international institutions, companies, institutes of higher education and others. Below is a high-level sample of our call for action to these different stakeholders, and we elaborate on and provide further advice in the full report that follows.



Raise the profile of the problem of men's symptoms receiving more research attention than those of women



Raise awareness of the link between education levels and health outcomes



Challenge stigmas against accessing mental health care



Assure that sponsorship of transport provision is recognised as a means to health outcomes, including the transporting of health workers and patients



Assure women providers, patients and advocates participate in the design and implementation of electronic health records



Raise the profile of wait times and charging for treatments as a matter of public health and gender equality



Introduction: women's access to healthcare and the promise of new healthtech models

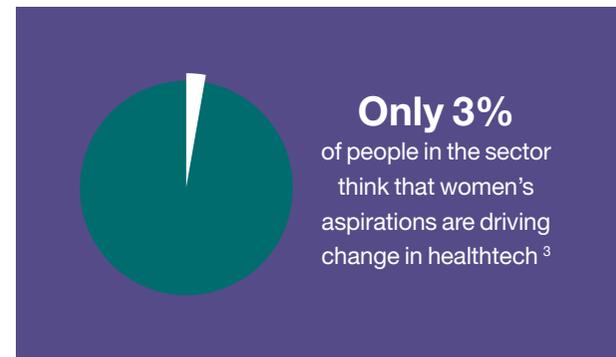
Around the world, people do not have equal access to healthcare, resulting in serious disparities in care and outcomes. Treatments and services that work, and trained healthcare providers, are not available equitably to all. These disadvantages in health access and outcomes are often amplified for women who have lower status in societies and households, and those who are limited in educational opportunities, economic power, or physical range.

Biases are detrimental to access and outcomes in traditional arenas of women's health such as maternity support, prenatal and antenatal care, and family planning.¹ Women are not only often denied access to quality care; they are also discriminated against in the delivery of this care. Gender is a social determinant of health.

Meanwhile, the health ecosystem is undergoing a dramatic transformation. New ways of diagnosing and treating illnesses are revolutionising the provision and practice of healthcare. Precision medicine defined by an individual patient's genetic code or unique biologic response is personalising treatment and changing how some of medicine's most stalwart challenges – lung cancer, melanoma, haemophilia – are prevented and treated. Digital platforms are transforming delivery models and allowing on-

demand real time expertise through sensors, telemedicine such as chat, or artificial intelligence (AI), eliminating the obstacles of time and distance. Long journeys to see a specialist or a crowded waiting room to see a community health worker are being replaced by digital providers that can see into your retina or distinguish a severely ill infant from one with simple colic.

These new digital platforms and products have the potential to improve access to care by delivering on-demand timely care anywhere. Freed from the high-cost models of bricks and mortar facilities, digital platforms have great potential to deliver both affordable and accessible care to millions more people.



About 90%
of US healthtech businesses
are still founded by men²



70%
of C suite executives
in healthcare
in the US are men⁴



Funding matters.
Women's health accounts for
only 4%
of the overall funding for R&D
or healthcare products

1. See: Kassebaum, Nicholas J., et al. (2016). Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015. *The Lancet*, 388(10053), pp.1659-1724.
Darroch, J. E., et al. (2017). Adding it up: investing in contraception and maternal and newborn health, 2017. Fact sheet. New York: Guttmacher Institute. IPPF. (2017). The human cost of the Global Gag Rule | IPPF. [online] Available at: <https://www.ippf.org/news/human-cost-global-gag-rule> [Accessed 12 Nov. 2019].
MacDorman, Marian F., et al. (2016). US Maternal Mortality Trends. *Obstetrics and gynecology*, 128.3, p. 447. Alabas, O. A., Gale, C. P., Hall, M., Rutherford, et al. (2017). Sex Differences in Treatments, Relative Survival, and Excess Mortality Following Acute Myocardial Infarction: National Cohort Study Using the SWEDEHEART Registry. *Journal of the American Heart Association*, 6(12), e007123.
2. Tecco, H. (2019). 2016 Year End Funding Report: A reality check for digital health | Rock Health. [online] Rock Health. Available at: <https://rockhealth.com/reports/2016-year-end-funding-report-a-reality-check-for-digital-health/> [Accessed 12 Nov. 2019].
3. [www3.weforum.org](http://www3.weforum.org/docs/WEF_FOJ_Executive_Summary_GenderGap.pdf). (2019). The Industry Gender Gap Women and Work in the Fourth Industrial Revolution. [online] Available at: http://www3.weforum.org/docs/WEF_FOJ_Executive_Summary_GenderGap.pdf [Accessed 12 Nov. 2019].
4. Berlin, G., Darino, L., Greenfield, M. and Starikova, I. (2019). Women in the healthcare industry. [online] McKinsey & Company. Available at: <https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/women-in-the-healthcare-industry> [Accessed 12 Nov. 2019].

Currently, however, women are underrepresented in healthtech. By the middle of this decade, only about 10% of US healthtech businesses were founded by women.⁵ The technology sector in general, including but beyond healthtech, faces a hiring and retention problem. Women represent only 24% of those working in the sector. Their representation in senior roles falls to 11%. More concerning, a recent survey reported only 3% of technology sector respondents agreeing with the statement that “Women’s economic power, aspirations (are) perceived as a driver of change in the industry”.⁶ Only 16% of the same group also agreed with the statement “Targeting female talent [is] perceived as key [to] future workforce strategy.” This implies that a great deal of work is needed to encourage more women to enter and lead in the technology sector.

“
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Technology and the future of women’s access to health

In this paper we put forward a new argument, and a new way of looking at the challenge of improving women’s access to health.

While many of the issues affecting women’s access to health require infrastructural, societal or economic change, technology will make a difference too. It can help to ensure that it does not replicate the inequalities outlined in this paper.

But it doesn’t just matter what the next wave of healthtech does. It also matters who develops it. To date, because of existing inequalities, much of the technology which serves women has been largely built by men. This is a limitation.

If we want the next wave of healthtech to circumvent bias against women in diagnosis and treatment, we must do more to make sure that women develop it. If we want to ensure that future innovations help to erase the stigma associated with seeking sexual, mental and reproductive health assistance, we must make sure that it is built by women who understand that stigma.

In short, if we want healthtech to chip away at the gender-based global health inequalities in assumptions, thinking, data, and practice, we have to do everything we can to close the gender gap in who funds, designs, and builds that technology.

“
If we want the next wave of healthtech to circumvent bias against women in diagnosis and treatment, we must do more to make sure that women develop it.
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5. Tecco, H. (2019). 2016 Year End Funding Report: A reality check for digital health | Rock Health. [online] Rock Health.

Available at: <https://rockhealth.com/reports/2016-year-end-funding-report-a-reality-check-for-digital-health/> [Accessed 12 Nov. 2019].

6. The Industry Gender Gap: Women and Work in the Fourth Industrial Revolution, WEF 2016, http://www3.weforum.org/docs/WEF_FOJ_Executive_Summary_GenderGap.pdf



The global women's health market is expected to reach **\$54.62 billion** by 2026 ⁷



The market is expected to grow at a compound annual growth rate of **4.2%**, particularly in North America and Asia Pacific regions ⁸

Building the ecosystem

This is not just a question of encouraging the women who work in healthtech. It is also about creating the right infrastructure for more women to enter the field in the first place. That means ensuring women have access to investment, insurance, talent, and equipping more women with skills, confidence, and support. Companies, governments, universities, and international institutions need to do more to make sure that there is a pipeline of female talent equipped with science, technology, engineering, and mathematics (STEM) skills, AI skills, and an understanding of how climate change will alter demand for women's healthtech solutions. (More analysis on how climate change will disproportionately affect women and women's health, see the forthcoming Women's Forum paper on 'Women and Climate Change' and the Women's Forum's 'Charter on Climate Action')

This paper seeks to answer questions such as how we can ensure both private and public sectors make sure women are part of this promising new health transformation? How do we ensure the gains in health do not skip another generation of women?

The opportunity

We also believe that the flipside of this risk is an opportunity: companies, regions, and countries which create the right conditions for solutions to emerge will close the gap in health access for women faster than those which do not. As a result, they will also see better health outcomes for their citizens, patients, and customers.

The gaps we have identified constitute opportunities for multinationals, small and medium sized enterprises (SMEs), international, national, regional and local governments, investors, academics, entrepreneurs and would-be entrepreneurs. By creating the right ecosystem, networks, and incentives, we can begin to unpick the entrenched biases which have created the inequities, and start to close the gaps in health access for women around the world.

Improving women's access to health globally represents a significant market opportunity too. The global women's health market is expected to reach \$ 54.62 billion by 2026 ⁷, according to Grand View Research. The market is expected to grow at a compound annual growth rate of 4.2%, particularly in North America and Asia Pacific regions. 'Femtech' – startups which solve medical issues which have historically challenged women – is now an identifiable category targeted by investors. ⁹ Analysts Frost and Sullivan expect it to be worth \$50 billion worldwide by 2025. ¹⁰

7. <https://www.grandviewresearch.com/press-release/global-womens-health-market>

8. Grandviewresearch.com. (2019). Women's Health Market Worth \$54.6 Billion By 2026 | CAGR: 4.2%. [online] Available at: <https://www.grandviewresearch.com/press-release/global-womens-health-market> [Accessed 12 Nov. 2019].

9. Marks, G. (2019). 'Femtech' startups on the rise as investors scent profits in women's health | Gene Marks. [online] the Guardian. Available at: <https://www.theguardian.com/business/2019/jun/06/femtech-startups-womens-health-investors> [Accessed 12 Nov. 2019].

10. Ww2.frost.com. (2019). Digital Revolution in Women's Health. [online] Available at: https://ww2.frost.com/files/1015/2043/3691/Frost_Sullivan_Femtech.pdf [Accessed 12 Nov. 2019].

Projected global women's health market size (USD billions)



source : Grand View Research* - <https://www.grandviewresearch.com/industry-analysis/womens-health-market>

Methodology

- Through internal and expert interviews and responses to questionnaires from partners of the Women & Access Daring Circle, we identified six key barriers for women's access to health. From our research, we believe that they are the issues where healthtech can have an outsize impact, and where women's perspectives especially in healthtech development are most needed to move towards gender equality in health outcomes.

- To seek actionable advice on how women can increase their chances of success in developing healthtech, we spoke to five women who are either founders of health-related startups or have decades of knowledge in the space. We reached these interviewees in several ways: through their participation in a competition we organised, whose aim was to identify and support late-stage startups; through partner recommendations; and through the extended Women's Forum network. While the interviewee selection was to some extent opportunistic, research suggests their experiences are typical of women founders.

“

Through
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”

Calls to action

It is our aim, as a circle of partners, to get women's leadership in healthtech onto the agenda of international institutions, companies, institutes of higher education and other parties who have the opportunity to influence it.

We want:

- To see more technology-led solutions to these challenges.
- To see more women-led technology companies.
- To begin to tip the balance towards more equitable health outcomes, and for healthtech to develop in a way which supports that.

In fact, the partners of our Daring Circle on Women's Access to Health are already mentoring five leading health startups, which solve problems ranging from ensuring health officials do not miss key child health data to helping women understand their fertility. (The full list of mentees is listed in the 'Advice for Others' section below. The other startups mentioned throughout this paper are not formally connected to the Daring Circle or the Women's Forum).

It is our hope that this paper provides a valuable addition to the conversation about how to make sure that that women seize that opportunity to build, invest in, and benefit from the healthtech which will serve future generations of women.



Calls to Action for stakeholders in private, public, NGO, and academic sectors

This paper assesses five core issues where women have unequal access to health, and challenges businesses, governments, public health systems, NGOs, and academic institutions to play their part in addressing them with the following calls to action.

ISSUE 1

LACK OF HEALTHCARE PROVIDERS INFORMED BY SEX-DISAGGREGATED RESEARCH AND DATA

CALL TO ACTION	ACTORS
Raise the profile of the problem whereby men's symptoms receive more research attention than those of women (the 'male by default' problem), resulting in a 'one size fits all' approach to care, drugs, therapies and treatments.	Private, public sector, NGOs, academic sectors
Create training programs that address the problem of unconscious gender bias for healthcare providers and its consequences.	Private, public sector
Sponsor research focusing on women's health outcomes and raise awareness of the gap.	Private, academic, NGO
Healthcare and drug companies can publicly commit to redressing the 'male-by-default' problem in the drugs and therapies they produce or supply.	Private sector
Provide for a best practice on closing the gender health data gap.	Private sector, public sector, NGOs, academic
Take an amplifying role in raising awareness of the 'male by default' problem re drugs/therapies/symptoms and pushing it up the political agenda.	Private sector, NGOs, academic

“ Healthcare and drug companies can publicly commit to redressing the ‘male-by-default’ problem in the drugs and therapies they produce or supply. ”

ISSUE 2

BARRIERS TO ACCESSING MENTAL HEALTHCARE

CALL TO ACTION

ACTORS

All stakeholders need to challenge the stigma against accessing mental healthcare including mainstreaming ideas such as mental health issues are as ordinary as physical health issues, and fighting prejudice against people with mental illness.

Private, public, NGOs, academic

Fund accelerators to encourage, develop, invest in, and grow young companies seeking to improve mental health.

Private, public, academic

Recognise that social and cultural factors are likely to cause overdiagnosis of mental health issues for women. Raise awareness of the risk that the burden of social and economic inequalities may be a factor in this disparity.

Public, NGOs

Calls to Action for stakeholders
in private, public, NGO, and academic sectors

“
Raise awareness
of the link between
education levels and
health outcomes.
”

ISSUE 3

LIMITED AWARENESS OR ACCESS TO INFORMATION

CALL TO ACTION	ACTORS
Raise awareness of the link between education levels and health outcomes.	Private, public, NGOs, academic
Publicly acknowledge that accurate, up to date online information is key for enabling key health and diagnostic information to reach millions, if not billions of people. Technology companies should consistently review how they provide access to it to ensure they provide the right information.	Private, public, NGOs, academic
There is a role for international partnerships, institutions and NGOs in ensuring that the accuracy of health information is on the political agenda.	Private, public, NGOs, academic
Raise awareness of the connection between internet access and health outcomes.	Private, public, NGOs, academic

“ Encourage funded competitions to discover and encourage technology to fill existing gaps in access to physical care. ”

ISSUE 4

LIMITED PHYSICAL ACCESS TO CARE

CALL TO ACTION	ACTORS
Assure that sponsorship of transport provision is recognised as a means to health outcomes, including the transporting of health workers and patients.	Private, public, NGOs, academic
Speed the adoption and scale of existing technological solutions.	Private, public
Recognise that brain drain from developing countries is a gender issue.	Private, public, NGOs, academic
Encourage funded competitions to discover and encourage technology to fill existing gaps in access to physical care.	Private, public
National and international financial institutions can facilitate the flows of funds towards technological solutions to strategically identified gaps, either by matching funding, acting as guarantor of last resort for investment in young technologies, or helping match needs with funding.	Private, public

Calls to Action for stakeholders
in private, public, NGO, and academic sectors

“ Use new data gathering tools
and assure gender parity in collection. ”

ISSUE 5

LACK OF CONFIDENTIAL OR RELIABLE HEALTH RECORDS OR IDENTIFICATION

CALL TO ACTION	ACTORS
Assure women providers, patients and advocates participate in the design and implementation of EHR's.	Private, public, NGOs, academic
Assure that EHRs are integrated with social services and other support systems for women and children.	Private, public, NGOs
Use new data gathering tools and assure gender parity in collection.	Private, public, NGOs, academic



Encourage policies such as parental leave, which more fairly distribute the economic and time burdens of care giving.



ISSUE 6

LACK OF MEANS TO PAY OR TIME-POVERTY

CALL TO ACTION	ACTORS
<p>Raise the profile of wait times and charging for treatments as a matter of public health and gender equality.</p>	<p>Private, public, NGOs, academic</p>
<p>Campaign for universal healthcare provision and healthcare as a right as a matter of gender equality because systems which push the need for healthcare provision back onto the individual tend to produce outcomes skewed against women's health.</p>	<p>Private, public, NGOs</p>
<p>Encourage policies such as parental leave, which more fairly distribute the economic and time burdens of care giving.</p>	<p>Private, public, NGOs, academic</p>





Key barriers and solutions **from women healthtech founders**

Issue 1

Lack of healthcare providers informed by sex-disaggregated research and data

The US Institute of Medicine found that **there are gaps in research** both in health and treatments and in their application.

What it means

A structural lack of research and data on the effects of certain therapies on women's health means that the most effective or appropriate practices to treat women are sometimes not known. Even where there is data, clinicians can be under-equipped to treat women, or dismiss women patients due to entrenched biases and stereotypes about women's care. This is a particular issue for women in remote areas, who are particularly under-represented in health datasets.

“ A structural lack of research and data on the effects of certain therapies on women's health means that the most effective or appropriate treatments for women are often unknown. ”

Issue summary

A gap persists in research on, and understanding of, women's health outcomes. Women and men have different health outcomes, due to lifestyle, environmental, behavioural and biological differences at the molecular and cellular level.¹¹ These biological distinctions lead to differences in clinical outcomes. The US Institute of Medicine found that there are gaps in research both in health and treatments and in their application.¹²

Historic gender bias in the funding of medical research has put women at a disadvantage in the identification and testing of therapies exclusive to them. It was only in 1993, for example, that the U.S. Food and Drug Administration ended its ban on women participating and called for companies to analyse effects by sex in applications for new drugs.¹³

Fundamental differences in biology impact women's metabolic and hormonal processing of drugs and therapies.¹⁴ Women also suffer from higher prevalence of certain health conditions, such as autoimmune diseases and arthritis. In the United States, women are 1.5 more likely than men to suffer from arthritis and musculoskeletal disorders, 3 times more from autoimmune diseases, 2 times more from depression and anxiety, and 1.5 times more from Alzheimer's.¹⁵

Moreover, women's symptoms may look different from men's, but men's symptoms are regarded as the default. A 'one size fits all' approach to care can put women at a dangerous disadvantage in accessing care. Women are more likely to die of heart disease because the way they experience symptoms is not widely understood, and thus risk 50% greater possibility of delayed care in an emergency setting.¹⁶

Beyond a lack of sex-disaggregated data and sex-specific research, healthcare providers may harbour unconscious biases, with real impact on healthcare access and outcomes. Women wait an average of 16 minutes longer than men when receiving pain medicine in emergency rooms, and are 13% to 25% less likely to receive opioids when they are in pain.¹⁷ Female heart attack patients are also less likely to survive when treated by male physicians, compared to male patients treated by male doctors or all patients treated by female doctors.¹⁸

11. Liu, K. and DiPietro Mager, N. (2016). Women's involvement in clinical trials: historical perspective and future implications. *Pharmacy Practice*, 14(1), pp.708-708.

12. Women's Health Research. (2010). Progress, Pitfalls, and Promise. [online] Institute of Medicine of the National Academies. Available at: <http://www.nationalacademies.org/hmd/-/media/Files/Report%20Files/2010/Womens-Health-Research-Progress-Pitfalls-and-Promise/Womens%20Health%20Research%202010%20Report%20Brief.pdf> [Accessed 12 Nov. 2019].

13. Hiltz, P. (2019). F.D.A. Ends Ban on Women in Drug Testing. [online] *Nytimes.com*. Available at: <https://www.nytimes.com/1993/03/25/us/fda-ends-ban-on-women-in-drug-testing.html> [Accessed 12 Nov. 2019].

14. Sex differences in drug disposition. (2011). [online] Department of Oncology, Georgetown University Medical Center, Washington, DC 20057, USA. os35@georgetown.edu. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/21403873> [Accessed 12 Nov. 2019].



Women are more likely to die of heart disease because the way they experience symptoms is not widely understood, and thus risk 50% greater possibility of delayed care in an emergency setting.



Women's symptoms may look different from men's, but men's symptoms are regarded as the default.



How technology can help

The knowledge that doctors and clinicians have is based on a decades-old system of research that perpetuates entrenched gender and sex biases. It will take more than a handful of technology solutions to change the system.

However, emerging technological applications are helping individual users disrupt that inertia: some by attacking biases through the use of AI and other advanced technology, and others by making the case for and contributing to research that recognises sex differences.

- **Ada** is an AI-powered symptom-checker, informed by thousands of real-world cases. In the form of a mobile application, it allows for more accurate symptom-checking, helping surpass gender biases and a lack of gender-based data.

- **NextGen Jane** produces a smart tampon that looks at genomic signals from menstrual cells for a range of health factors that affect women's fertility and quality of life. It also allows 'data-forward' women to actively participate in their personal preventative care and contribute personally to the body of women-focused medical data.

- Similarly, **LifeStory Health** seeks to map biomarkers in menstrual blood under the motto of 'letting the data lead'. They also bring awareness of the gender bias in health research and want to drive solutions to better understand female biology. It uses this advanced understanding of female biology to expand clinical utility and create new testing paradigms.

► Calls to Action for stakeholders in private, public, NGO, and academic sectors

- Raise the profile of the 'male by default' problem in terms of both drugs and therapies and also the treatment of symptoms.
- Create training programs that address the problem of unconscious gender bias for healthcare providers and its consequences.
- Sponsor research focusing on women's health outcomes and raise awareness of the gap.
- Healthcare and drug companies can publicly commit to redressing the 'male-by-default' problem in the drugs and therapies they produce or supply.
- Provide for a best practice on closing the gender health data gap.
- Take an amplifying role in raising awareness of the 'male by default' problem re drugs/therapies/symptoms and pushing it up the political agenda.

15. Das, R. (2018). Women's Healthcare Comes Out Of The Shadows: Femtech Shows The Way To Billion-Dollar Opportunities. [online] Forbes.com.

Available at: <https://www.forbes.com/sites/reenitadas/2018/04/12/womens-healthcare-comes-out-of-the-shadows-femtech-shows-the-way-to-billion-dollar-opportunities/#7a83de856159> [Accessed 12 Nov. 2019].

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Barriers to accessing mental healthcare



Doctors ‘are more likely to diagnose depression in women compared with men, even when both genders have identical symptoms or similar scores on standardised measures of depression. There is evidence that social context may be a contributing factor: in countries where women have better employment opportunities, access to birth control, and other indicators of equality, this inequality is reduced.



What it means

Cultural stigma and constraints particular to women prevent them from seeking and acquiring the mental healthcare they need.

Issue summary

Women bear a disproportionate diagnostic burden of some mental health conditions. Twice as many women experience depression over their lifetime as men. Women are twice as likely as men to experience post-traumatic stress disorder, and women are twice as likely as men to experience generalised anxiety disorder or panic disorder. According to the American Psychiatric Association, doctors “are more likely to diagnose depression in women compared with men, even when both genders have identical symptoms or similar scores on standardized measures of depression.”¹⁹

Twice as many women experience depression over their lifetime as men. Women are twice as likely as men to experience post-traumatic stress disorder, and women are twice as likely as men to experience generalised anxiety disorder or panic disorder. In countries where women have better employment opportunities, access to birth control, and other indicators of equality, this inequality is reduced.

There is evidence that social context may be a contributing factor: in countries where women have better employment opportunities, access to birth control, and other indicators of equality, this inequality is reduced. Similarly, in countries where women’s role has not improved over time, the inequality in depression has not improved over time either.²⁰

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Women in low income countries are less likely to access mental healthcare than women in high income countries, probably because in low income countries, mental healthcare is more likely to require out-of-pocket expenditure. Women are less likely to use mental health services when they face economic or structural barriers.²¹

Lack of access to mental health provision is a particular issue in remote and rural areas, and developing countries.

In particular, changes in roles and physiology brought about by reproductive cycles and women's mental health are closely linked: studies show that psychological symptoms such as depression, anxiety and disordered eating increase when girls reach puberty, are linked with reproductive events like the menstrual cycle and childbirth, and drop noticeably after menopause.

A wide range of obstacles prevent women from understanding and accessing the mental healthcare they need. People do not seek help for mental health issues because they lack knowledge about mental illness or do not know how to access treatment, live in societies that harbour prejudice against people with mental illness, or expect to face discrimination against people with mental illness. They may fear being labelled: in a UK survey, nearly half of pregnant women did not tell their midwife or doctor about their symptoms of antenatal depression; 44% did not do so because they did not want to be labelled 'mentally ill'. Meanwhile, women may face familial or community barriers. Both financial stress and feeling unsafe in one's home or community can be mental health stressors. They can be obstacles to women seeking help as well.

How technology can help

Emerging technology-based solutions can help break down barriers to accessing mental healthcare, by providing information, accessible and private therapy services, and addressing some of the key mental health stressors women face, such as domestic violence, safety, and reproductive health. They can help women gather information and offer support by forming communities and helping to break taboos about women's mental and physical health.

Technology can also help tackle stressors by ensuring women's safety and privacy, such as by helping women confidentially report threats to their safety. The anonymity of a distant provider via chat or telemedicine may ease the fear of local stigmas. Technology solutions may also use other healthcare issues as a way in to mental health: for instance, women bringing their

infants to clinics for vaccinations or wellness visits can then be screened for postpartum depression.

- **AnxietyHelper** is a mental health toolkit providing info on mental illnesses, resources and tools to cope with day to day life.
- **iCouch** aims to have a positive global impact in the way mental healthcare work is provided and implemented. It makes sure that help is available anywhere where people need it without any cultural or physical barriers by connecting practitioners and patients via secure video session.
- **Bright Sky** is an app allowing users to locate their nearest domestic violence support centre by searching their area, postcode or current location. Designed to log incidents of abuse without any content being saved on the device itself, the app also enables users to record incidents in a secure journal tool, using text, audio, video or photos.
- **Safetipin** is a social enterprise providing a number of technology solutions to make cities safer for women.
- **Yapili** offers African patients an affordable, anonymous and secure channel to seek medical care via telemedicine from practitioners in other countries, for mental health and other health issues like pregnancy, diabetes, hypertension, and HIV.

► Calls to Action for stakeholders in private, public, NGO, and academic sectors

- All stakeholders need to challenge the stigma against accessing mental healthcare including mainstreaming ideas such as mental health issues are as ordinary as physical health issues, and fighting prejudice against people with mental illness.
- Fund accelerators to encourage, develop, invest in, and grow young companies seeking to improve mental health.
- Recognise that social and cultural factors are likely to cause overdiagnosis of mental health issues for women. Raise awareness of the risk that the burden of social and economic inequalities may be a factor in this disparity.

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Issue 3

Limited awareness or access to information

What it means

Women's lack of access to relevant, actionable information to manage their own care as well as the care of others.

Issue summary

Information is power: when girls and women have better access to information, they also have better health outcomes. For example, women in 32 countries who remained in school after primary school were five times more likely to know basic facts about HIV than illiterate women.¹⁷



Women in
32 countries
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For Americans born between 1914 and 1939, an additional year of schooling reduces the probability of dying in the next 10 years by 3.6 percentage points¹⁸. Awareness is a particular issue for women in remote areas and rural communities, where people tend to have less contact with health services than in metropolitan areas. Low awareness of gender differences in symptoms to look out for is also an issue, and public and private health providers could play a much bigger role educating the consumers and citizens how symptoms differ.

In the developing world, there is a clear link between years of education for girls, and outcomes such as improved maternal and child health, fewer maternal and child deaths, and lower risk of contracting HIV.

Access to health information is one of the mechanisms by which this works. For example, in Malawi, only 27% of women without any education know that HIV transmission risks can be reduced by taking drugs during pregnancy, but that figure rises to 59% for women with secondary education.¹⁹ Therefore, the gender gap in school enrolment must be closed. Every day, 60 to 70 million girls are not in school, and more than half a billion girls and women worldwide are illiterate—about twice the number of illiterate males.²⁰

Inadequate access to information is an issue in developed and developing countries alike. When women have better access to health information and awareness of health issues, they can better manage their health and their families' health and contribute more fully to the communities and societies they live in.



Information is power:
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have better access to
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20. Global Partnership for Education (2018). 12 years to break down the barriers to girls' education. 24 September 2018 <https://www.globalpartnership.org/multimedia/infographic/breaking-down-barriers-girls-education>



How technology can help

Technology-based tools and solutions have high potential for helping women and their communities access health information. Information can be delivered via text message, mobile applications and other platforms, and mobile health applications have been shown to contribute to improved healthcare through diagnosis, monitoring, treatment and management.

In the developing world, or anywhere resources are scarce, mobile platforms can provide cost-effective solutions tailored to end users, such as voice messaging for those who cannot read. Information may flow the other way as well: in sub-Saharan Africa, mobile birth registration platforms address the challenges of traditional paper-based systems, and provide health authorities with up-to-date birth data.

Women are also likely to seek out health information on the internet. The Pew Internet & American Life survey found that internet users, especially women, seek out information about sensitive topics that are difficult to discuss with others, including one's own doctor, and that those with chronic conditions are more likely to look for information online. Whether clinicians approve or not, patients use social media to seek out health information – not all of it scientific or accurate.

However, we observe that many of the technology solutions available help address knowledge gaps in childcare, fertility and reproductive health—and leave women's general health and wellness relevant throughout their life stages less addressed. A gender gap in internet access and usage needs to be closed as well. Worldwide, the internet penetration rate is 51% for men

and 45% for women, and the gap is especially wide in Eastern and Southeastern Asia where only 28% of women have access to the internet compared to 42% for men. If these gaps are closed, we believe mobile healthtech can provide valuable information to women at scale.

- **GDM-Health** is a prescribed digital therapeutic for the management of gestational diabetes at home. The application was born out of clinical need for women who develop diabetes while pregnant but do not know how to monitor or manage the disease as it is often temporary.
- **Text4baby** is a US-based free service that texts health information, vaccine and check-up reminders to new mothers based on inputted birth date. This technology merely requires a mobile phone and allows women to acquire information on child care in the absence of readily available education.
- **GiftedMom** is a startup democratising health information access in Africa by using a remote health support platform and bots. It provides pregnant women and moms living in rural areas with life-saving health information and connects them with specialised care or service providers. Their vision is to have a world free of maternal and infant deaths.

► Calls to Action for stakeholders in private, public, NGO, and academic sectors

- Raise awareness of the link between education levels and health outcomes
- Publicly acknowledge that accurate, up to date online information is key for enabling key health and diagnostic information to reach millions, if not billions of people. Technology companies should consistently review how they provide access to it to ensure they provide the right information.
- There is a role for international partnerships, institutions and NGOs in ensuring that the accuracy of health information is on the political agenda.
- Raise awareness of the connection between internet access and health outcomes.

21. Tokosi T.O, Fortuin J, Douglas T.S. (2017) The Impact of m-Health Interventions on Breast Cancer Awareness and Screening: Systematic Review Protocol. JMR Research Protocols 2017 6(12):e246, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5754564/>
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Issue 4

Limited physical access to care

What it means

These issues represent a lack of physical access to care, whether as a result of pure distance, actual physical barriers, or a shortage of doctors or other health providers in a particular area. One particular manifestation of this barrier is the 'last-mile' - or the connectivity between a patient and her network of healthcare providers and services. This lack can be exacerbated by the urban-rural divide.

Unfortunately, the issues discussed above all exacerbate the issue of limited physical access to care. The lack of sex-disaggregated research and data, barriers to accessing mental healthcare, and limited awareness and access to information all impact women's access to appropriate healthcare.

Issue summary

In both the developing and developed world, rural inhabitants face lower life expectancy, poorer health status and a shortage of healthcare providers. Poor road or transport infrastructure and lack of safe transit or vehicle access means patients must walk to a clinic or hospital, and hinders health workers from reaching patients where they are. Rural patients may travel hours to the nearest specialist – or never be treated in-person.

The urban-rural divide in physical access to healthcare is present even in the developed world. Only 55% of rural households in the UK are within 8 kilometres of a hospital, compared to 97% of urban households, and the further they live from healthcare, the less they use health services. The American College of Obstetricians and Gynecologists notes that such rural distance from services weighs especially on women, who face a particular lack of access to care.

Besides distance and infrastructure, a shortage of healthcare providers also limits women's physical access to care. In the developed world, as modern medicine allows people to survive serious diseases and conditions, the number of practitioners is not keeping up with the demand to support people in their recovery and management of chronic conditions. In particular, specialists in women's health are in high demand but undersupplied in communities around the world. By 2020, the United States will have a shortage of up to 8,800 OB-GYNs.



80%

of Indian women still feel obliged to seek permission from husbands or other family members to visit a health centre.

The shortage of healthcare practitioners is worsened by a brain drain from developing countries. In Kenya, for example, more than 50% of those trained as doctors are practicing overseas, leaving just 20 doctors per 100,000 people. In some countries, the migration of just one or two specialists in a given field may halve the country's skill base in that field.

Disproportionately, it is women who forego their health in the face of such physical barriers. They may not be able to access safe transit options or drive a vehicle, and their mobility may be limited by social and cultural factors. For instance, the India Human Development survey found almost 80% of women had to seek permission from husbands or other family members to visit a health centre. Even in 2012, 33% were not allowed to go alone to seek medical care.

These barriers to physical care have serious repercussions on women and their families. For example, 99% of maternal deaths occur in low- and middle-income countries, and three-quarters of those due to complications such as postpartum haemorrhage, infections, and pre-eclampsia. When women die in childbirth, their families' lives and health are affected in turn.

How technology can help

Technologies that enable remote therapy, diagnostics and patient monitoring allow healthcare providers to reach more women wherever they are. Given the rising volume of remote care technologies, a differentiating factor in the marketplace for startups is recognising the unique needs of women, whether addressing the challenges they face in caring for themselves or caring for their families.

If telemedicine can avoid overburdening already overworked healthcare workers, it has the potential to address the issue of women's physical access to health services. Telemedicine services can enhance the quality of decentralised care solutions like health kiosks, which provide basic medical supplies and primary care in rural areas. Drones, already employed to deliver blood and just-in-time medications, can be another logistics solution for decentralised care.

- **Maven** is a US-based online clinic that offers women and families healthcare via its digital care platform, avoiding the geographical barriers women face in receiving care.

- **eCompliance** is an innovative, portable biometric tracking system created to treat tuberculosis in rural and slum communities across India where patients, especially women, cannot visit a health centre in person.

- **Unima** is a Mexico-based portable application that moves the diagnostics process out of the lab setting and into remote and rural areas in order to treat and prevent conditions such as tuberculosis, diarrhoea, HIV and malaria through a technology-driven platform.

- **Synapse** enables healthcare providers to configure CareKit apps (remote patient monitoring) to track health in real-time, prescribe a treatment plan, and communicate with a patient without her having to travel to the site of provider.

► Calls to Action for stakeholders in private, public, NGO, and academic sectors

- Assure that sponsorship of transport provision is recognised as a means to health outcomes, including the transporting of health workers and patients.
- Speed the adoption and scale of existing technological solutions.
- Recognise that brain drain from developing countries is a gender issue.
- Encourage funded competitions to discover and encourage technology to fill existing gaps in access to physical care.
- National and international financial institutions can facilitate the flows of funds towards technological solutions to strategically identified gaps, either by matching funding, acting as guarantor of last resort for investment in young technologies, or helping match needs with funding.

Issue 5

Lack of confidential or reliable health records or identification

What it means

These issues are related to the data infrastructure needed to organise women's care, including reliable records that contribute to the consistency and coherence of care, as well as accurate personal identification to allow individuals to exercise ownership.

Issue summary

Patients benefit from continuity of care by their doctors, which is linked to lower mortality rates. However, vulnerable populations such as people on the move and undocumented persons often lack identification and reliable, consistent health records and care.

Women in these subgroups are disproportionately excluded from health services due to such lack of identification and health information, causing delayed access to screening and treatment which prevent access to safe care and perpetuate health inequities.

Even in most EU countries, undocumented women and girls lack access to mammograms, cervical cancer screening, family planning, or health check-ups that would help them to prevent conditions like heart disease, cancer and diabetes.²⁵

Lack of documentation also makes it harder for authorities to identify gender-based violence. For women without residence status, or whose residence status is precarious or uncertain, the insecurity of their situation and legal barriers to obtaining health services are drivers of poorer health outcomes. In 2014, of pregnant women in situations of vulnerability, 54% had no access to antenatal care.

Reliable health information is also a challenge beyond vulnerable groups. In health systems in the UK and the US, for example, there have been large-scale efforts to encourage providers to adopt digital records. Many providers have migrated to digital systems, but challenges remain. In some cases, these solutions are just 'digital remakes' of conventional systems and do not unlock the potential that digital solutions can offer.

Even in most EU countries,

undocumented women and girls lack access to mammograms, cervical cancer screening, family planning, or health check-ups that would help them to prevent conditions like heart disease, cancer and diabetes.



25. http://www.euro.who.int/__data/assets/pdf_file/0017/330092/6-Migrant-womens-health-issues-irregular-status.pdf?ua=1

How technology can help

In the developed world, electronic health records (EHR), while not a perfect solution, have the potential to improve the efficiency and effectiveness of care, as well as serving as a useful tool for research. EHR could help enhance understanding of health for entire populations, especially linked with enhanced collection of social/behaviour measures, vital records and integration with technologies which detect collect physical data such as heart rate and sleep patterns. This could improve both clinical care and population health.

While the gathering and retention of women's health records is a question of efficiency in the developed world, in moments of crisis or movement, it is a question of survival. Technology can enable women to take ownership of their health data, especially when they cannot otherwise exercise control over their care; and it can increase the efficiency and availability of health data for providers, leading to better care. However, these solutions must meet users where they are, via systems and devices they already use or are likely to use and must have security and privacy safeguards in place.

- **OneRecord** is a record retention application that allows the patient to store health information, instead of relying on traditional, provider-based platforms. This app prides itself on putting the patient at the centre of her healthcare by giving her access and ownership of her medical records and health information in one place.
- **Iryo** deploys blockchain-based electronic health records in refugee camps in Jordan, enabling people to store health data on their mobile phones, and take it with them.
- **KEA Medical** is a Hospital Information System that connects African hospitals through a single database to manage patient medical information. Following registration, each patient gets a QR Code linking to its Universal Medical ID code. This system allows doctors to have quickly reliable health information on the patient during a consultation, hospitalisation or an emergency.

► Calls to Action for stakeholders in private, public, NGO, and academic sectors

- Assure women providers, patients and advocates participate in the design and implementation of EHR's
- Assure that EHRs are integrated with social services and other support systems for women and children
- Use new data gathering tools and assure gender parity in collection

Issue 6

Lack of means to pay or time-poverty

What it means

These are issues related to money, time and other resources needed to acquire care.

Issue summary

Whether in developing or developed markets, it can take significant time and money to access care. Finances are a key barrier to healthcare and thus people living in poverty are at greater risk for health status deterioration, chronic illness and premature death than wealthier people. They are also less likely to have a family physician or to obtain preventive and secondary care.²⁶ And they are likely to be women: globally, for every 100 men aged 25-34 living in poverty, there are 122 women. Single-mother families are over-represented among the poor.²⁷

Even if services are free at the point of access, women often need to take the time out to travel to clinics and wait for services to be provided - all while being disproportionately burdened with the care of others. In some instances, small charges for basic services that seek to plug holes in financially strapped public health systems further discourage the poorest from access.

The working poor may have restrictions on taking time off work to seek care. Long wait times or the need to travel across town can be an inconvenience for some but put others in economic peril.

Women in particular have more unpaid responsibilities, such as caring for children and relatives, and the demands on their time can be compounded by their multiple roles as both users of healthcare themselves and as 'chief medical officers' of their families. In one survey,



in a survey of women in developed countries, **62%** say they lack the time to do what they know they should to stay healthy.

77% of women don't do what they know they should to stay healthy; 62% said they lack the time to do so.²⁸

Women often face informal barriers to financial inclusion such as limited access to assets. In some countries, there are explicit barriers to women's financial inclusion such as unequal laws on inheritance, property ownership. Both kind of financial inclusion can hinder women's ability to pay for treatment or care.

Healthcare needs can also be a cause of poverty, directly and indirectly. Each year, more than 100 million people are pushed into poverty because they have to pay directly for their healthcare.²⁹ Workplace and employment discrimination can be compounded by health and care needs, especially for women, putting their employment at risk. For example, one in five mothers in the UK reported harassment or negative comments from employers or colleagues related to pregnancy or flexible work.³⁰ Women, rather than men, are more often the ones taking time off when their children are sick.

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29. World Health Organisation (2014). *WHO Global Health Expenditure Atlas*. <https://www.who.int/health-accounts/atlas2014.pdf>

30. UK Government Department for Business, Innovation and Skills and the Equality and Human Rights Commission (2016). *Pregnancy and maternity-related discrimination and disadvantage*.

Summary of key findings. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/509500/BIS-16-145-pregnancy-and-maternity-related-discrimination-and-disadvantage-summary.pdf

How technology can help

Everybody should be able to afford healthcare, regardless of their available funds or time and regardless of their gender.

Technology is particularly well placed to address issues of time poverty or ability to pay because it tends to reduce costs and enable access to expertise remotely. Telemedicine is particularly useful to link remote or understaffed health clinics to larger or better staffed facilities, enable health professionals to monitor patients remotely (particularly for monitoring of pulmonary, cardiac, or foetal medical data), and in some cases even transmit expertise and experience for more complex operations.

Women often face difficulty staying in or returning to the workforce due to health or care needs. In some cases it can stem this economic loss by enabling fast and affordable access to care for women and their families, eventually benefiting society as a whole.

For instance, technology can streamline patient appointments, insurance and paperwork to lower the cost of care and increase access.

- **Nabta Health** is smart, cloud-based period and ovulation tracker. Women from across all emerging markets can use Nabta to understand their healthcare needs and take an active role in planning their fertility, pregnancy and neonatal care. They are now in the process of building a payment gateway that will allow low-income users to apply for micro-loans to finance certain medical procedures that are not typically covered by insurance or to even finance the immediate baby care they need.

- **CoPatient** provides an insurance check service run by a team of experts who review medical bills so patients do not pay more than they have to, given that medical bills can be confusing and even sometimes incorrect.

► Calls to Action for stakeholders in private, public, NGO, and academic sectors

- Raise the profile of wait times and charging for treatments as a matter of public health and gender equality.
- Campaign for universal healthcare provision and healthcare as a right as a matter of gender equality because systems which push the need for healthcare provision back onto the individual tend to produce outcomes skewed against women's health.
- Encourage policies such as parental leave, which more fairly distribute the economic and time burdens of care giving

Women healthtech founders as a vehicle for change

Women are more likely than men to identify the issues which affect them disproportionately. As a result they are more likely to develop solutions, found companies to bring them to market, invest in them, and promote them.

While many of the issues affecting women's access to health require infrastructural, societal or economic change, women healthtech founders can make a difference. Technology will overturn traditional healthcare practices in the coming decades; women-led companies can help to ensure that it does not replicate the inequalities outlined in this paper.

To that end, we spoke with women founders who are active participants in this transition to better understand their experiences and help others in the future. We found a hopeful and diverse group of women; engineers, doctors, students, journalists, investors, serial entrepreneurs, and often investors themselves. Despite the diversity in their backgrounds and geography they were surprisingly aligned on the key role of mentors, community and networks in helping them overcome obstacles inherent in the journey of taking an idea to the marketplace. They were also aligned on the key challenges too. The challenges fall into three categories- raising capital in a male dominated investor area, gaining credibility and data. They had some sage advice for other women starting out. Importantly they were clear on how the community in the Women's Forum could help support other women entrepreneurs.



Challenges for women founders

Women healthtech founders face two major obstacles in establishing funding.

Firstly, healthcare requires more funding than other sectors and secondly, technology relating to women's health issues are competing in a heavily male dominated investment culture, with a lower understanding of and empathy with women's health issues.

One founder noted that "healthtech is very different than, say, consumer goods – the ramp up is slower and the numbers are against you. You have to know that going in; you need more capital". Investors have a great deal of competition for their time and money and women's health issues may not engage their interest or passion in the same way as for other opportunities. Women and women's health become marginalised in the process.

"When you talk about women's health," she said, "it becomes a niche problem and male investors do not relate to the issues because they do not experience them and they do not relate to women entrepreneurs in the same way they relate to male entrepreneurs".

“
When you talk about
women's health, it becomes
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”

Women founders also validated that their experience reflected what the literature has already suggested – that they are held to a different set of standards. Women are viewed through a lens of experience and men through a lens of potential. One woman commented "We get asked different questions than the men". This is not just in founders but also in science in general. "Our partners in academia or science networks often have women who are innovating, and then they vanish at the funding rounds and it is the men who go the last mile." Building credibility was an early area of focus. Women founders built credibility through publications, past ventures, and deep resumé. It is also clear that "it is a chicken and egg [issue] because fundraising builds credibility and you need experience to raise funds." This perceived link between fundraising and credibility too often limits young women from jumping in as they wait till they have built up a resumé and network and find themselves starting companies at the same time they are building families. Having more women on the investment teams clearly made a difference; "Female investors are just more passionate. They understand the problems and the conversion rate to investor is higher". Women also noted that accelerators or funds that were dedicated to women were important venues for success. All founders noted that their strength as women was that they knew the customer. As one founder stated "The way I pitch to investors is that we are in this business because we understand the patients well – eventually you are going to touch a patient and if you are connected to patients that brings value." Though women are interrogated at a different level they do more homework. A new spirited group is emerging.



“

In emerging markets there can be such bias. You go with a junior team member who is male and they will only talk to them! I was in a meeting in India about financial inclusion and six out of the eleven startups were run by women. They were all women from financial services and they left as they got sick of being treated badly. So I am pleasantly surprised as I am meeting a lot of women innovators. They are innovating because they have no choice. They are faced with a lot of challenges but they are quite fed up. So adversity is an accelerator.

”

Advice for others

The Women's Forum for the Economy and Society is committed to ensuring that the next wave of technology does not replicate the inequalities outlined in this paper. To that end, we include here advice from current leaders in the healthtech space on how women can have a better chance of developing and growing successful healthtech companies.

Ironically, one of the consistent pieces of advice all women founders had been given was to bring a man along. This is not advice they all took or would give. Rather they are eager to have more women take a risk and join their ranks: We need more women, was their message, "and if you don't get started we will never get there". These women are looking for company and are eager to help. Perhaps this is because mentors and networks were so important to their own journeys. Their advice was often focused on how to acquire capital. They recommended targeting impact investors, women investors, finding accelerators, doing your homework and "learn how to adapt to the investors narrative". Other tactical advice unique to the health sector was 'do not shirk regulation' and 'get good lawyers and HR people up front'. Interviewees also advised being flexible and prepared to change; "We pivot many times – that is how the healthcare system works". This is a group that relies on women's networks, and their comments were aimed at inspiring others to overcome defeatist narratives.

“

Stop doubting yourself and
stop overthinking – for instance early on
I thought a lot about what should I wear?
As a society we think about this a lot.
Now I don't do this as much.
The best outfit to wear is confidence.

”

How the Women's Forum community can help

Three key themes emerged and really it comes down to one word – network, network and more networks. Networks that help with investment, networks that help with data and networks that are willing to pilot. As one founder said, “women need to support other women buying, investing and opening up their network. “The dearth of women investors was noted and given the success most of these founders have with women investors it was thought that assuring that there are dedicated funds for women would allow women’s health not to be viewed as a niche. The goal is not just funding women founders in traditional women’s health areas but broader “companies aimed at women are being led by women but we need women leading male spaces – so a female perspective is brought to these areas too”. Governments, NGOs and others need to assure women are present in the dialogue. One founder noted “I know people don’t like quotas but I think we should have them and we should ask for this to be an example to level the playing field, and to create specific funds for female entrepreneurs.”

Early on women founders were struck by the limitations on data, particularly in emerging markets or in health areas notable for stigma. Public data is often lacking in volume, transparency or gender representation. Because of this, most founders we spoke with are doing some type of research on their own.

“
Our only option was [doing] our own research to assure accuracy as we found in some areas that our finding was different than what was publicly available. We felt it was because of a lot of bias - when you talk to the end consumer the picture was different. For instance, we decided to focus on MS. Women are more predisposed to MS and we don’t have an idea how many people in India have this. There is not data and there is stigma. If a young girl has this that family does not come out and [say so].
”

So organisations with datasets can help accelerate speed to market by sharing their data. And the founders plead for more accuracy and sharing in data echoed a broader theme in health where ‘bad data leads to bad solutions and poor results.’

Lastly, the Women’s Forum community can help by partnering with these companies. “What startups need is proof that they work. So agreeing to pilot or help them establish proof is particularly useful. For corporates, opening up their networks of buyers, customers and suppliers and trying something new that is led by women founders will help with the credibility gaps. And perhaps it is not such a risk – these women make a strong argument for their advantage “When women run and lead healthtech business they represent the consumer better. Ignoring women is bad business.”

Through the partners of our Daring Circle, the Women’s Forum is facilitating mentoring for the five finalists of our competition:

- **MobileODT.com**, which gives women’s health clinicians enhanced digital tools to support efficient and accurate vulvar and cervical examinations. It currently enables accessible visual assessments for more than 40,000 patients in 27 countries.
- **Docthers.com**, which creates custom health and wellness solutions for employees and contractors in companies and their wider value chain.
- **Khushibaby.org**, which has developed an inexpensive digital necklace for babies to make their medical history wearable, helping ensure that health officials do not miss child health data, such as vaccination records.
- **Vytalapp**, which makes apps for families, provides health check reminders, trackers and emergency wallet cards, amongst other services.
- **Adiahealth.com**, which helps women understand their fertility by providing them with an at-home hormone test, access to experts, and personalised programmes.



Conclusion

Healthcare is at a crossroads. Health delivery is about to take a monumental leap from stationary, time and expertise-dependent to mobile, on demand, and making use of new data sources such as social media, for insights. Technology has the potential to improve women's access to health. However this revolution is in jeopardy of being led by men for men unless gaps in women's leadership and funding are addressed. We have outlined some key calls to action for both the public and private sector. The key commitment must be to assure that women are represented and giving input to the global conversation at the highest levels. Women scientists, founders, innovators, investors and entrepreneurs must be supported, nurtured and mentored to assure we have ample representation.

We call on all companies, academic and intergovernmental institutions to use their resources and influence to accelerate women's leadership in healthtech. This can be through collective or individual efforts, but it is clear that business as usual is not allowing women ample opportunity. Dedicated funding sources or accelerator programmes dedicated to women are necessary to ensure that women have ample support. Women must continue to open up their networks to ensure that new generations of female leaders are in the pipeline. Men, too, must address and be accountable for the bias that holds women to a higher standard. Healthcare needs are growing and becoming more costly to treat, and we will only solve this problem and address the challenges at hand when both halves of the world's intellectual capital is harnessed and included.

“

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This report was prepared by:

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For enquiries or further information, please contact: daringcircles@womens-forum.com



The Women & Access to Health Daring Circle is an initiative of the Women's Forum for the Economy & Society, bringing together an ecosystem of partners to advance solutions that harness technology to address the barriers to women's access to health in developed and developing countries. Its aim is to support promising tech solutions through funding and mentorship of healthtech entrepreneurs and raise these issues as a key strategic consideration of companies, governments, and other buyers of products and services. Led by AXA and Sanofi, the Daring Circle's Strategic Members are BNP Paribas and Google, in collaboration with RB as a Global Partner and Gavi, the Vaccine Alliance, as an Institutional Partner. It is also supported by Mercer as a Knowledge Partner.

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