

Digital Health Sandbox Challenge #2 Innovations to Support Women+ Health

The Massachusetts eHealth Institute (MeHI) seeks startups and entrepreneurs who are developing and validating digital health-based solutions that support women+ health to compete in the second [Massachusetts Digital Health Sandbox Challenge](#). We use the term “women+ health”, as defined by Rock Health, to encompass the health needs of cisgender women and transgender or nonbinary individuals whose health needs relate to those of cisgender women.¹ This Challenge is focused on finding digital health solutions that address women+ health including in the areas of maternal health, reproductive health, behavioral and cognitive health, physical activity, disease control, medication management, nutrition, and community connections. Challenge finalists will compete for \$150,000 in grant funding that will be used to fund validation projects at one of MeHI’s [Digital Health Sandboxes](#).

The estimated female population outnumbers the male population in Massachusetts by over 200,000, making up 51% of the state’s population. Across the globe, women constitute 49.7% of the population, however, women+ health research remains significantly underfunded. Although funding for women+ health and women+ digital health solutions has been increasing annually, women+ digital health funding accounted for only 13% of all digital health funding in the United States in 2022.² Additionally, while 70% of Femtech companies have at least one female founder, compared to the 20% average, less than 3% of venture capital funds go to female-led startups and female entrepreneurs are 63% less likely to get VC funding compared to men.³ Expanding digital health solutions tailored to women+ could greatly improve healthcare access and health outcomes for this underserved population.

Despite the increased research and development in women+ health, the United States still has the worst maternal mortality rate among high-income countries.⁴ The Massachusetts Department of Public Health reports that the rate of severe maternal mortality has nearly doubled over the past decade.⁵ One of the factors affecting maternal mortality rates is access to care. A 2022 March of Dimes report found that up to 6.9 million women in the U.S. live in maternity care deserts, and this problem continues to get worse. The report found a 2% increase in counties that are maternity care deserts since 2020.⁶ Digital health solutions can help address access to care as well as other factors that contribute to the country’s growing maternal mortality problem.

Health disparities impact women+ at all ages. A 2023 Mayo Clinic survey study found that 13.4% of women+ reported at least one adverse work outcome due to menopause symptoms, and 10.8% reported missing work in the preceding 12 months. Most women don’t feel supported by their employers or healthcare providers in addressing their menopause symptoms. An AARP survey in 2018 found that 42% of women have never discussed menopause with their healthcare provider and only 1 in 5 received a referral to a menopause specialist.⁷ In addition to other symptoms, menopause increases the risk of cardiovascular disease in women due to hormonal changes, and the mortality rate for heart attacks in women is two times higher than in men.⁸

The disparities in funding and care also extend to women+ cancers. Gynecological cancers receive significantly less support than other types of cancer, contributing to their higher lethality.⁹ When

¹<https://rockhealth.com/insights/building-comprehensive-women-digital-health-eight-sectors-serving-women-needs/>

²<https://techcrunch.com/2023/01/24/despite-2022s-headwinds-womens-health-startups-did-better-than-ever-before/>

³<https://www.cnbc.com/2023/06/12/a-subsection-of-tech-is-set-to-be-worth-1-trillion-but-taboos-are-holding-it-back.html>

⁴<https://www.commonwealthfund.org/publications/issue-briefs/2022/apr/health-and-health-care-women-reproductive-age>

⁵<https://www.mass.gov/doc/an-assessment-of-severe-maternal-morbidity-in-massachusetts-2011-2020-0/download>

⁶<https://www.marchofdimes.org/maternity-care-deserts-report>

⁷<https://www.aarp.org/health/conditions-treatments/info-2018/menopause-symptoms-doctors-relief-treatment.html>

⁸<https://www.healthline.com/health-news/how-reproductive-factors-can-affect-a-womans-heart-health>

⁹<https://doi.org/10.1016/j.ygyno.2018.10.021>

looking at years of life lost, a measure of premature mortality, the National Cancer Institute reported that in U.S. dollars per 100 incident cases from 2007-2014, prostate cancer received an average of \$1,821,000 per person-years of life lost, while ovarian cancer received \$97,000, cervical cancer received \$87,000, and uterine cancer received \$57,000. In addition, in an 11-year period, the funding-to-mortality ratio for most gynecological cancers has dropped, highlighting the urgent need for increased research and development of digital health solutions to improve mortality rates and increase support for women+ struggling with cancer.¹⁰

Leveraging digital health solutions to support women+ health extends beyond physical well-being and medical care to mental, behavioral, cognitive, social, and educational well-being. Women+ are more likely than men to experience depression, anxiety, PTSD, and eating disorders.¹¹ Additionally, 1 in 7 women will experience postpartum depression after giving birth.¹² Women experiencing postpartum depression often face deteriorated physical well-being, challenges in social interactions, and an increased risk of substance abuse.¹³ Digital health solutions can help address the specific mental health needs of women+.

The inequities present in our society and health system are particularly prevalent in the women+ community. People of color face an increased risk of maternal health complications and chronic diseases due to latent racial, economic, and social factors. In Massachusetts, women of color experienced the highest rate of labor and delivery problems.¹⁴ Black women have a 63% higher rate of severe maternal morbidity compared to white women, while Hispanic women have a 32% higher rate of severe maternal morbidity.¹⁵ Disparities extend beyond maternal or reproductive health, as marginalized women are also more likely to suffer from higher levels of hypertension, which is linked to chronic disease and cardiovascular problems.¹⁶ Additionally, women of color often face discrimination while seeking healthcare. Black and Hispanic doctors account for only 11% of all physicians in the U.S., while only 3% of doctors identify as LGBTQ+. Digital health and care matching can play a vital role in reducing disparities by increasing access to appropriate, culturally responsive care, reducing bias, and facilitating patients' access to doctors with similar backgrounds or experiences.¹⁷

Digital health innovations have the opportunity to address many of these challenges and can improve the quality of life for women+. MeHI launched this Challenge to discover and spotlight digital health solutions that can support the physical, mental, and social health of women+ while addressing the unique needs of underserved, underrepresented, and undertreated populations. We take a broad definition of digital health and are looking for solutions at the intersection of healthcare and technology. Applicants must propose a new solution that is not yet widely commercially available.

¹⁰ <https://doi.org/10.1016/j.ygyno.2018.10.021>

¹¹ <https://www.psychiatry.org/File%20Library/Psychiatrists/Cultural-Competency/Mental-Health-Disparities/Mental-Health-Facts-for-Women.pdf>

¹² <https://www.postpartumdepression.org/resources/statistics/>

¹³ <https://doi.org/10.1038/s41746-023-00756-4>

¹⁴ <https://apnews.com/article/maternal-morbidity-massachusetts-doubled-births-delivery-7ab4c63d2aa46d3416e376f77e4a2dc0>

¹⁵ <https://www.bcbs.com/the-health-of-america/reports/racial-disparities-in-maternal-health>

¹⁶ <https://www.wbur.org/news/2023/02/06/maternal-health-blood-pressure-boston-medical-center>

¹⁷ <https://www.hlth.com/digital-content/hlth-matters/blog/improving-maternal-health-outcomes-with-digital-solutions>

Challenge Areas And Solutions Sought

The following are examples of challenges that we believe can be addressed by digital health solutions. This is not an exhaustive list, and any applicants with ideas that improve the health and well-being of the women+ population are encouraged to apply.

All applicants should consider how their solution is targeting and supporting the unique needs of underserved populations, including addressing racial inequities, geographic limitations, accessibility concerns, broadband access, and digital literacy, among others. Applications that effectively address these considerations will be prioritized.

Mental Health:

Women+ face unique mental health challenges that can be supported with digital health solutions. Key challenge areas include:

- The risk of suicide linked to postpartum depression;
- The impact postpartum depression has on physical well-being and social health;
- The increased risk of substance abuse in women due to postpartum depression;
- The impact on women+ who experience sexual violence, including the 3.8 million American women who have sexual violence-related PTSD and other related mental health disorders;
- The increased risk for women+ to experience major depressive episodes during menopause

Maternal Health:

Digital Health solutions can address inequities in maternal health, as well as improve maternal health care quality and maternal health outcomes. Key areas of focus include:

- Expanding access to maternity care services for the 6.9 million women who live in “maternity care deserts;”
- Decreasing the rate of maternal death, of which 84% of cases are preventable;
- Addressing inequities and maternal complications for women of color, who are two times more likely to experience perinatal complications than white women;
- Reducing the rate of severe maternal health complications in Massachusetts, which nearly doubled in the last decade.

Reproductive Health & Menopause:

Digital Health solutions can support women+'s reproductive health and menopause with accessible and personalized solutions to improve health outcomes and quality of life. Key opportunities include:

- Supporting the 6.1 million US women who struggle with reproductive disorders, which include any disease impacting fertility;
- Addressing the annual global loss of over \$150B of economic productivity and healthcare costs because of menopause;
- Reducing the risk of bone density loss and osteoporosis due to menopause;
- Addressing the impact menopause has on quality of life measures, including physical, social, and mental impacts.

Cancer & Cardiovascular Health:

Female cancer and cardiovascular diseases are significantly underfunded. Digital Health solutions can address the issues related to gynecological cancers and cardiovascular disease. Key areas of opportunity include:

- Addressing the health outcomes gap for heart disease: women+'s mortality rate for heart attacks is two times higher than men's;
- Managing cardiovascular issues linked to hormonal changes during a woman+'s reproductive age;
- Creating digital solutions for medication management, symptom tracking, and monitoring related to female cancers and cardiovascular diseases;
- Supporting women struggling with gynecological cancers, including creating spaces for women to connect, share experiences, and seek emotional support;
- Decreasing the mortality rate of gynecological cancers.

Solutions to these challenge areas may include the following, but all applicants with relevant solutions are encouraged to apply:

- Remote monitoring devices
- Wearable tech solutions
- Ambient intelligence
- Mental and behavioral health platforms
- Telehealth solutions
- Care coordination tools
- Assistive technology devices
- VR / AR tools
- Mobile applications
- Virtual programming and services

Program Overview

The [Massachusetts Digital Health Sandbox Challenge Program](#) is designed to accelerate digital health solutions that address key healthcare challenges in Massachusetts. The program is funded and administered by the [Massachusetts eHealth Institute \(MeHI\)](#) at the [Massachusetts Technology Collaborative](#).

MeHI puts out an annual call for applications to source, support, and validate solutions in defined areas. The first Challenge, the Healthy Aging Challenge, sought solutions that addressed the physical, mental, and social health challenges facing older adults. Eight startups from across the nation were provided access to cutting-edge research institutions, industry leaders, and funding opportunities. The second Challenge seeks solutions that support women+ health.

Applicants from across the country can apply. A group of external expert reviewers will evaluate applicants and recommend 6-8 companies to participate in the program. Reviewers will evaluate applications on the proposed solution's uniqueness in the market, potential commercial viability, and ability to support women+ health. Companies selected by MeHI will take part in a virtual, two-month Introduction to the Massachusetts Digital Health Ecosystem program sponsored by MeHI. The introduction will include a speaker series featuring prominent voices from across the ecosystem, including venture capitalists, successful digital health innovators, and leading researchers.

During the introduction to the ecosystem, participants will be matched with Sandboxes - cutting-edge research and development organizations - from the [Massachusetts Digital Health Sandbox Network](#). The Sandboxes will assist participants in scoping projects to test and validate their solutions to bring them to market faster. MeHI will support participants in preparing detailed project plans outlining how the award funding would be used to complete the scoped Sandbox project.

The program will culminate in a judged competition where participants will pitch both their product and their proposed Sandbox project. Expert judges will select three winners to each receive **\$50,000** in funding to complete their validation project. The funding will be paid directly to the Sandbox and must be used to cover the Sandbox partner's fees. This level of funding can typically cover user experience testing, access to cutting-edge lab facilities and subject matter experts, or a small pilot in a healthcare setting.

Benefits to Participants

While only the top three solutions in this Challenge will receive grant funding to complete their Sandbox projects, all participants will benefit from the program. Benefits include:

- Connect with key partners in the Massachusetts digital health ecosystem through the Introduction to the Massachusetts Ecosystem Speaker Series
 - Understand the digital health funding landscape in MA
 - Learn about and connect with leaders in related, key industries in MA
 - Hear from experts about how to navigate and work with health systems and payers
 - Gain an understanding of other programs and resources in MA that are aimed at supporting digital health startups
- Accelerate time from R&D to production
 - Benefit from cohort learning
 - Work with experts to assess your testing needs
 - Meet with Sandboxes to understand the research and testing opportunities
 - Partner with a Sandbox to scope a detailed validation project
- Gain Funding Access
 - \$50,000 in Sandbox funding each for the top three companies
 - Everyone will be prepared for investor meetings

Timeline

RFA Release: Tuesday, September 26, 2023

Information Session: Wednesday, October 18, 2023

Early Application deadline: Friday, November 3, 2023

Final Application deadline: Monday, December 1, 2023

Finalists selected: Friday, January 12, 2024

Kickoff meeting: Friday, January 26, 2024

Virtual Speaker Series: January-April, 2024

Pitch Prep: January-April, 2024

Final Pitch Event: Thursday, May 16, 2024

The kickoff meeting and speaker series will be virtual events hosted over Zoom. The final pitch event is being planned as an in-person event in Massachusetts. All finalists must be prepared to attend the event in person. The date for the final event is subject to change.

Early Application Opportunity: Applications submitted by midnight on November 3, 2023 will be reviewed by MassTech staff and will receive initial feedback by November 17, 2023. Early applicants may incorporate the feedback and resubmit their application by the final deadline of December 1, 2023. **Please note this opportunity is applicable only to applications received by midnight on November 3, 2023. Those received after November 3rd will be reviewed through the normal application process.**

Eligibility

- Applicants must propose a new solution that is not yet widely commercially available.
- Applicants do not need to meet a minimum requirement of revenue or investment to participate in the program, however this program is aimed at companies that have at least a minimum viable product that is ready to be validated with a Sandbox organization. Companies that have participated in an accelerator program previously will receive preference.
- Applicants may be located anywhere in the US. MeHI has set a goal of 50% of the participating companies having a presence in Massachusetts.
- The Introduction to the Massachusetts Ecosystem speaker series will be virtual, however, participants must be willing to participate in a live pitch event at the end of the program. The pitch event will take place in May 2024 and is currently being planned as an in-person event in Massachusetts.
- Participants must agree to participate in annual follow-up surveys after the end of the program. The survey will ask about company metrics, including:
 - Number of jobs created at your company
 - Number of new customers gained
 - Number of new patents, copyrights, or trademarks obtained
 - Diversity of your board members and/or executive team

How to Apply

Click [here](#) to apply

For more information visit: <https://massdigitalhealth.org/challenge-2-innovations-support-women-health>

Contact: Ben Stevens, Program Associate: stevens@masstech.org; 617.371.3999 X212

Terms

Applicants are cautioned to read this application carefully and to conform to its requirements. Failure to comply with the requirements may serve as grounds for rejection of an application.

Any and all responses, applications, data, materials, information and documentation submitted to MassTech in response to this application shall become MassTech's property and shall be subject to public disclosure. As a public entity, MassTech is subject to the Massachusetts Public Records Law (set forth at Massachusetts General Laws Chapter 66). There are very limited and narrow exceptions to disclosure under the Public Records Law. If an applicant wishes to have MassTech treat certain information or documentation as confidential, the applicant must submit a written request to MassTech's General Counsel before submitting the materials. The request must precisely identify the information and/or documentation that is the subject of the request and provide a detailed explanation supporting the application of the statutory exemption(s) from the public records cited by the Respondent. If the General Counsel approves the request, the applicant shall clearly label the relevant information and/or documentation as "CONFIDENTIAL" in the application. Any statements in an application reserving any confidentiality or privacy rights that is inconsistent with these requirements and procedures will be disregarded.

This application, as may be amended from time to time by MassTech, does not commit MassTech to select any applicant, award any contracts, or pay any costs incurred in submitting this application. MassTech reserves the right, in its sole discretion, to withdraw the application, to engage in preliminary discussions with prospective applicants, to accept or reject any or all applications received, to request supplemental or clarifying information, to negotiate with any or all qualified applicants, and to request modifications to applications in accordance with negotiations.

MassTech may provide reasonable accommodations, including the provision of materials in an alternative format, for applicants with disabilities or other hardships. Applicants requiring accommodations shall submit requests in writing, with supporting documentation justifying the accommodations, to the Program Associate. MassTech reserves the right to grant or reject any request for accommodations.

About the Massachusetts eHealth Institute at the Massachusetts Technology Collaborative

The [MassTech Collaborative](#) is an economic development agency that strengthens the competitiveness of the tech and innovation economy by driving strategic investments, partnerships, and insights that harness the talent of Massachusetts. MeHI is a division of MassTech and the Commonwealth's entity for healthcare innovation, technology, and competitiveness. MeHI partners with industry, government, and healthcare organizations to support the Massachusetts Digital Health Initiative. MeHI also helps all the Commonwealth's providers harness the benefits of electronic health records and the Mass Hlway, the statewide health information exchange. For more information, please visit <https://mehi.masstech.org> and follow @MassEHealth. Learn more about the Massachusetts Digital Health Initiative at www.massdigitalhealth.org.

About the Massachusetts Digital Health Sandbox Network

The [Digital Health Sandbox Network and Grant Program](#) was launched in 2019 and is administered by the Massachusetts eHealth Institute at MassTech. The program is designed to support digital health companies in their product development and expand the user base for cutting-edge research and development facilities. There are currently twelve Sandboxes in the Network offering a variety of real-world and simulated environments, state-of-the-art equipment, subject matter expertise, and consulting services to digital health companies to support their clinical, technical, and user product validation.