

UNMET
NEEDS IN
WOMEN'S
HEALTH
AND
SEXUAL
HEALTH:

A \$360B
GHOST
MARKET





GHOST MARKET REPORT

Women's health and sexual health are profoundly underserved sectors within healthcare, yet they represent some of the most significant opportunities for innovation, returns and impact. At Amboy Street Ventures, we have witnessed the untapped potential in these markets firsthand.

FOREWORD

From menopause to maternal health, and from sexual health to aging, the challenges are immense — but so are the rewards for those bold enough to invest in change.

Amboy Street Ventures adopted the Blue Ocean Strategy, as coined by the *Harvard Business Review*. Blue oceans represent markets that do not yet exist — spaces free from competition. Women's health is full of these untapped markets, where urgent needs persist without viable solutions. In this report, we call these markets "Ghost Markets."

This report quantifies the annual revenue potential of these Ghost Markets. Our findings are striking: a \$360 billion untapped opportunity exists in the U.S. alone. Behind this number is a clear reality: the opportunity is enormous, the demand is proven, and the solutions are emerging.

This work is more than a financial opportunity; it's a moral imperative. Every innovation highlighted in this report has the potential not only to generate outsized returns, but also to redefine what is possible in healthcare. By bridging these gaps, we can create a future where access to comprehensive, equitable and effective healthcare is the standard — not the exception.

This report is a call to action for investors, entrepreneurs, researchers and innovators to recognize the incredible opportunity in women's health and sexual health. By committing capital and resources to these areas, we can drive meaningful change and unlock a market that offers unparalleled financial returns.

Carli Sapir

Founder, Amboy Street Ventures



GHOST MARKET REPORT

TABLE OF CONTENTS

BY SECTION	PAGE #
Project Overview.....	05
Menopause	08
Sexual Health	15
Healthy Aging.....	21
Menstruation	26
Contraception	32
LGBTQIA+ Health	37
Maternal Health	41
Fertility	49

PROJECT OVERVIEW

Women's health and sexual health are significantly underserved areas within the **healthcare sector**. The current market sizes for these sectors are understated because many individuals are not receiving the necessary care, which limits the overall spend in this space. Addressing this gap is **critical for both improving health outcomes** and understanding the true potential of these sectors. Our proprietary work suggests that the market is ripe for expansion.

To gain a clearer picture of the women's health and sexual health market opportunities, in this report we identified **40 major unmet needs** within eight distinct categories: menopause, sexual health, healthy aging, menstruation/hormonal health, contraception, LGBTQIA+ health, maternal health, and fertility. These unmet needs highlight the areas where **existing solutions fall short** and where **greater attention** is required to meet the demands of patients and consumers alike.

Through this research, we calculated the "Ghost Market" — a term representing the market size (annual spend) if these unmet needs were fully addressed. Our findings revealed that the **women's health and sexual health sectors** possess a staggering

\$360 billion

Ghost Market in the U.S., underscoring the **immense potential and opportunity** for innovation in these areas.

Finally, for each unmet need, we have identified **innovations that are poised** to bridge the Ghost Market. By investing in these innovations, investors will **unlock significant financial returns** while transforming the landscape of women's health and sexual health.

KEY FINDINGS:

Although this report offers copious learnings, illuminating an astonishing number of white spaces in women's health, a few key takeaways emerged:

Menopause \$131B

- Nearly three-quarters of women who seek medical attention for significant menopause symptoms are left untreated ([source](#)). With a staggering 63 million menopausal women in the U.S., new solutions will bridge the \$131 billion Ghost Market.
- Due to the tremendous population experiencing menopause, even point solutions for specific menopausal symptoms will generate venture returns. For example, the Ghost Market for hot flashes solutions is \$19B, and for vaginal dryness solutions it's \$18B.
- Lack of access to prescription menopause care (due to inadequate provider training and limited payor coverage) creates two interesting opportunities:
 - Telehealth menopause specialty care with prescription capabilities
 - Non-prescription menopause symptom solutions

Sexual Health \$66B

- The sexual health sector represents a substantial yet unexplored market opportunity, with a Ghost Market of \$66 billion in the U.S. alone. Systematic neglect, stigma, and underinvestment have left significant gaps in care, including limited access to STI testing, inadequate solutions for vaginal microbiome imbalances/infections, insufficient support for low libido and limited access to sexual health education and sex therapy. Emerging innovations are poised to not only meet this pent-up demand but also deliver significant financial returns for investors willing to disrupt this neglected segment of healthcare.

Healthy Aging \$59B

- Cardiovascular disease (CVD) is the leading cause of death in the U.S. and world-wide. Women often experience different symptoms and are more likely than men to die from cardiovascular events like heart attacks and strokes. Only 22% of primary care providers and 42% of cardiologists feel extremely well prepared to assess CVD risk in women ([source](#)). Telehealth platforms specializing in women's heart health present a \$24 billion Ghost Market.
- While mental health and cancer detection are well-known problems among the aging population, incontinence has a very similar Ghost Market size and is vastly underserved. Of the 25 million adults in the U.S. suffering from urinary incontinence, 75-80% of those are women ([source](#)).

Menstruation and Hormonal Health \$53B

- Abnormal uterine bleeding (AUB) is a major unmet need with 35 million incidences in the U.S. each year. Because existing solutions are inadequate and invasive, a

QUALIFIERS:

- The Ghost Market represents the total addressable market size and is the total revenue an innovation could earn if it captures the entire population that is facing the unmet need. This report excludes serviceable addressable market and serviceable obtainable market calculations.
- The price of innovations is estimated based on proprietary market insights as well as publicly available information.
- This report only scratches the surface of unmet needs in women's health and sexual health. There are many underserved needs that are not mentioned in this report. As we continue researching innovations that are addressing major healthcare gaps and are poised for financial returns, we will continue to expand on this report's findings.



less-invasive innovation that treats AUB without impacting the patient's fertility could scale to meet this \$23 billion AUB Ghost Market.

CALL TO ACTION:

These findings highlight the vast scope of unmet needs across women's and sexual health. Addressing these challenges is not only an economic opportunity but also a moral imperative. By driving innovation and investment into these critical areas, stakeholders can improve health outcomes for millions, create equitable systems of care and unlock the full potential of the \$360 billion Ghost Market.

To help analyze the findings of this report, a table to compare the unmet needs can be [found here](#).

Contraception \$25B

- Expanding male contraception represents a \$10.2 billion Ghost Market opportunity. With 17 million men in the U.S. seeking alternatives to condoms and vasectomy, emerging technologies like injectable hydrogels, topical hormonal gels and non-hormonal pills could significantly reshape the contraception landscape, reducing the burden on women.

LGBTQIA+ Health \$13B

- The current standard of care for mental health support often falls short for LGBTQIA+ individuals. Many face barriers such as stigma, lack of culturally competent providers and discrimination, leading to unmet mental health needs. Innovation bringing culturally competent mental health support to this community is tackling an \$8 billion Ghost Market.

Maternal Health and Pregnancy \$7.5B

- Marginalized groups, including women of color, sexual and gender minorities (SGM) and women with disabilities, face compounded challenges in accessing quality maternal care, leading to higher rates of complications, mortality and adverse outcomes. Startups are taking on a \$1.9 billion Ghost Market and creating maternal health platforms that provide culturally competent care, improve accessibility and offer coordinated services specifically designed for marginalized populations.

Fertility \$5B

- With fewer than 1,250 Reproductive Endocrinology and Infertility (REI) providers and significant geographic barriers to care, innovations in distributed and automated fertility care represent a \$3 billion opportunity to address underserved populations.
- With IVF success rates often below 40% for women over 35, investment in advanced therapeutics and precision medicine platforms could transform outcomes and access, driving substantial returns.

MENOPAUSE

Menopause is a **transformational phase** in a woman's life that has been historically underaddressed.

A Yale University review found that nearly three-quarters of women who sought medical attention for significant menopause symptoms were left untreated ([source](#)).

63M women are in menopause in the U.S. ([source](#)). That is a **tremendous population** that is left untreated.

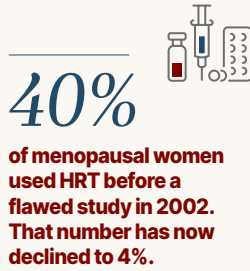
As societal awareness grows, stigma dissipates and scientific understanding deepens, the menopause market presents **substantial opportunities for innovation** and investment.

The following report illuminates six gaps in the menopause category that could pose lucrative investment opportunities, including inadequate provider training, payor coverage for menopause care, insomnia, hot flashes, vaginal dryness, and nutrition and weight management.

Inadequate Provider Training

PROBLEM: There is a significant gap in healthcare providers' knowledge of and training in menopause care. Only 20% of OB/GYN residency programs provide formal menopause training ([source](#)). Additionally, there is a general absence of updated education focusing on non-hormonal treatments and the debunked risks of hormone replacement therapy (HRT). Specifically, in 2002, administrators of the Women's Health Initiative study announced that HRT is linked to an increased risk of blood clots, stroke and breast cancer. Decades later, that study is now seen as flawed and debunked ([source](#)). Hormone therapy among women over 40 has declined to a low of 4% ([source](#)). That's drastically lower than the 40% of menopausal women who used it before the study in 2002 ([source](#)).

Research shows that Black women typically experience menopause at an earlier age compared to White women and often face more intense and longer-lasting symptoms. Despite these challenges, they are significantly less likely to receive proper care or treatment. Findings from the Study of Women's Health Across the Nation (SWAN) indicate that Black women transition into menopause about 8.5 months earlier on average and report hot flashes more frequently. However, they are less likely to access hormone therapy or other forms of medical support, emphasizing a critical need for equitable healthcare solutions ([source](#)).



POPULATION: Approximately 20% of OB/GYNs in the US have received formal menopause training during residency ([source](#)). Using basic logic, 80% of the 63M menopausal women (or 50M women) in the US could thus benefit from improved menopause care provided by access to better-trained healthcare professionals.

NEW TECHNOLOGY: Several companies are addressing this problem by providing menopause specialty care.

Respin Health: *Holistic therapies, coaching and community for women going through menopause*

Alloy: *Telehealth platform providing prescription menopause medication and access to trained menopause providers (Alloy women's health memberships cost around \$50 per year with additional prescription costs starting at approximately \$40 per month)*

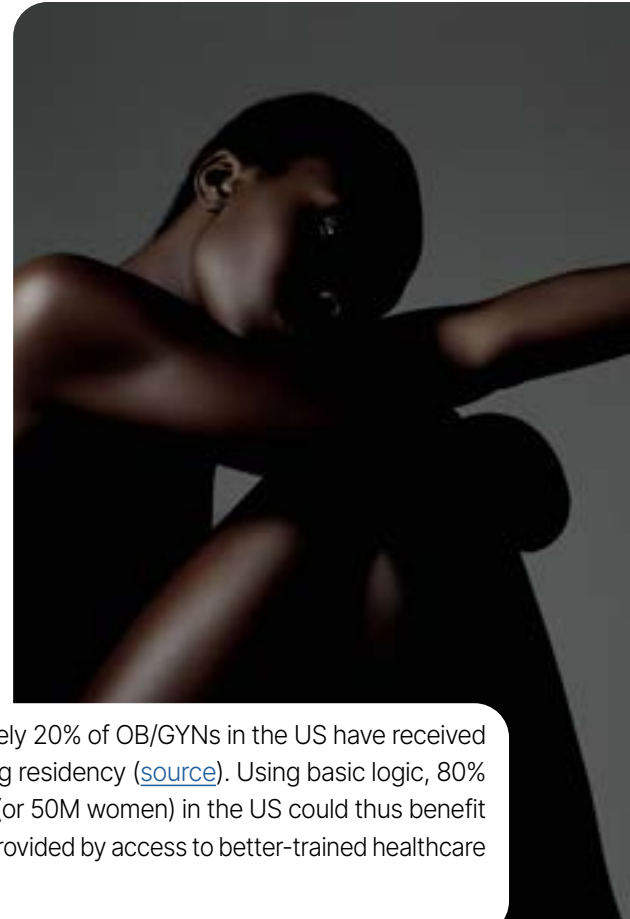
HerMD: *Brick and mortar clinics providing specialized menopause care that is covered by insurance*

Gennev: *Providing access to menopause-trained doctors and RDNs for the treatment of menopause symptoms via video appointments*

GHOST MARKET: Based on the price of the services noted above, an estimated cost of specialty menopause care is \$500 per patient per year.

- US Market: \$25B
- Population: 50M
- Cost: \$500
- 50M x \$500 = \$25B

Note: Many OB/GYNs work diligently to be qualified providers, including those certified by The Menopause Society and the American College of Obstetricians and Gynecologists, who are leading efforts in specialized menopause training.



Payor Coverage for Menopause Care

PROBLEM: Beyond menopause care being hard to find, payor coverage for menopause care remains inconsistent, creating significant barriers for many women seeking treatment. While traditional health insurance plans often cover medications that manage general menopause symptoms, they frequently fall short in covering specialized treatments, such as remedies for sexual dysfunction or bioidentical hormone replacement therapy (BHRT), which is a type of plant-based, “natural” hormone therapy, generally considered to have fewer side effects than synthetic hormone replacement therapy (HRT).

Beyond seeking solutions that are not covered by traditional payors, many women find themselves visiting specialists for consultations with providers who are outside of their insurance network due to lack of qualified in-network providers.

POPULATION: Approximately 63M women in the U.S. are of menopausal age and could potentially require menopause-related care. A Yale University review found that nearly three-quarters of women who seek menopause treatment are left untreated, based on insurance claims data ([source](#)).

Therefore, we assume three-quarters of menopausal women, or 47M women, may not find adequate care from in-network providers and may seek out-of-network care.

NEW TECHNOLOGY: Several companies are developing innovative solutions to address this unmet need by providing an added layer of menopause care that is more accessible and affordable, particularly through employer-sponsored benefits. These technologies aim to integrate menopause care into employee health benefits, ensuring that more women have access to comprehensive treatment options without the financial burden.

Maven: *Comprehensive women's health benefits that include menopause care, focusing on making care accessible through employer-sponsored plans*

Midi Health: *Virtual menopause care and Rx services, partnering with health systems and employers to offer better coverage and reduce out-of-pocket costs*

Companies listed in the previous section are also tackling this problem. [HerMD](#) (brick and mortar clinics providing specialized menopause care that is covered by insurance) is expanding geographically and [Alloy](#) (telehealth platform providing prescription menopause medication and access to trained menopause providers) is bringing down the price of menopause specialty care dramatically for an affordable cash pay option.

GHOST MARKET: Based on the price of the services noted above, an estimated cost of menopause care is \$500 per patient per year.

US Market: \$23.5B

Population: 47M

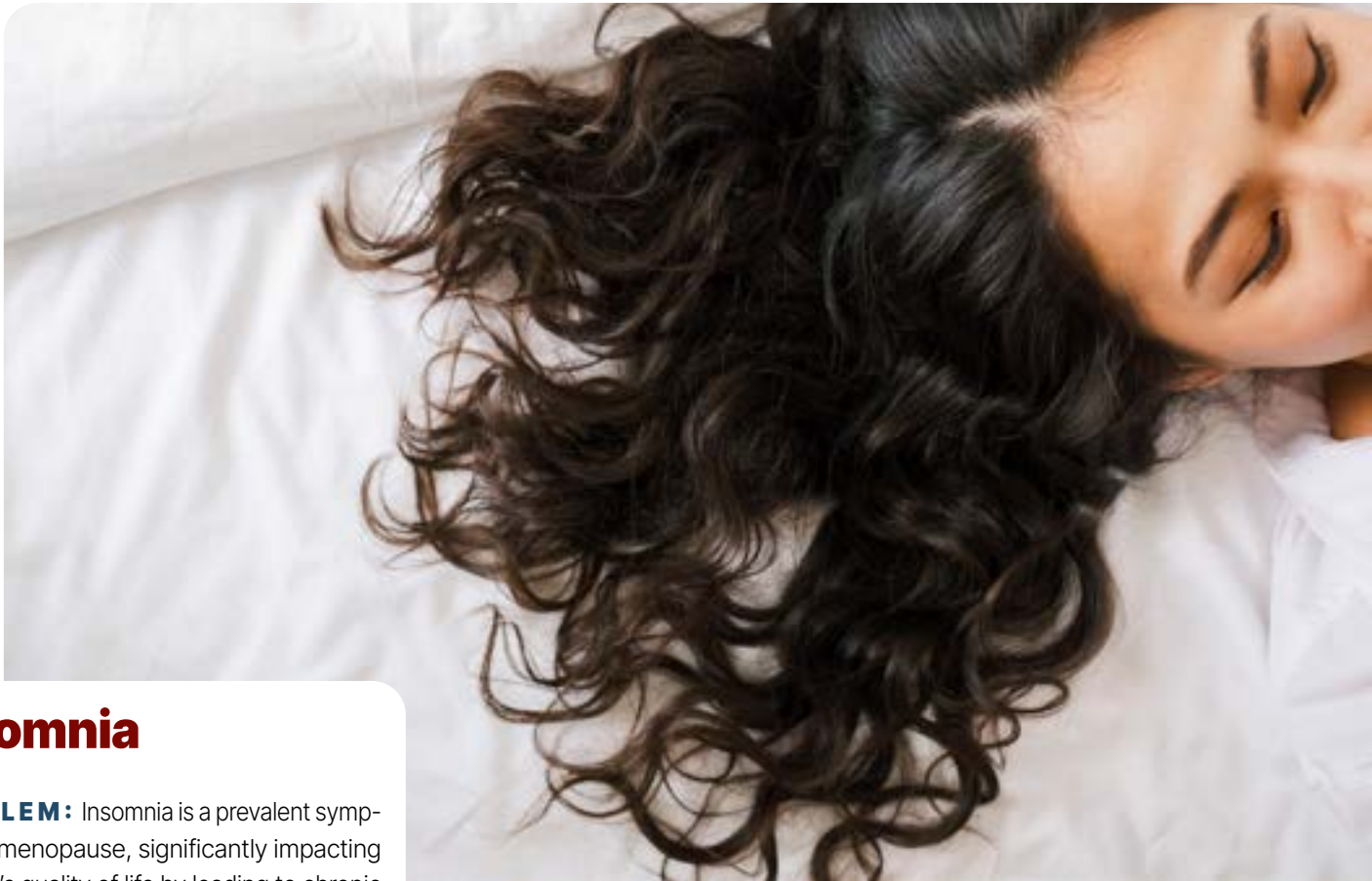
Cost: \$500

47M x \$500 = \$23.5B



63M women in the US are of menopausal age and could potentially require menopause-related care.

Many women find themselves looking for specialists outside of their insurance network.



Insomnia

PROBLEM: Insomnia is a prevalent symptom of menopause, significantly impacting women’s quality of life by leading to chronic fatigue, mood disturbances, metabolic disorders, weight gain and decreased productivity.

POPULATION: Approximately 50% of the 63M menopausal women in the US experience insomnia ([source](#)). Thus, we can assume a population size of 31.5M women who experience insomnia.

NEW TECHNOLOGY:

Caria: Menopause management app where the patient can track insomnia, along with other menopause symptoms, to better understand what care pathways are working (\$49.99/year)

Gennev: Insomnia supplements (\$25/2-month supply)

Gennev and **Midi Health:** Specialty menopause care through telehealth providers who understand menopause-related insomnia

treatment options — hormonal prescriptions, non-hormonal prescriptions, supplements, and lifestyle changes

While prescription treatments for insomnia may cause unwanted side effects, natural remedies and lifestyle changes often fall short in effectiveness. An ideal new solution in this space could be a natural product with proven efficacy similar to that of prescriptions.

GHOST MARKET: We estimate the potential annual cost of new menopause-related insomnia care (access to specialty providers, tracking apps, and effective natural products) to be \$150 per patient per year.

US Market: \$4.7B
 Population: 31.5M
 Cost: \$150
 31.5M x \$150 = \$4.7B

insomnia is impacting women’s quality of life

31.5M women experience insomnia

new solutions could be a natural product



Hot Flashes

PROBLEM: Hot flashes, also known as vasomotor symptoms, are one of the most common and debilitating symptoms of menopause, causing discomfort and disrupting daily activities and sleep.

POPULATION: About 75% of the 63M menopausal women in the US experience hot flashes ([source](#)). Thus, we can assume a population size of 47M women who experience hot flashes.

NEW TECHNOLOGY: New hardware is scaling to meet this demand:

Embr Labs: Wearable device that provides personalized temperature control to manage hot flashes (\$299)

Amira Care: Mattress pad specifically designed to alleviate hot flashes, accepted by HSA/FSA (\$499)

The Menopause Society and the American College of Obstetricians and Gynecologists agree that the most effective treatment for hot flashes (approved by the FDA for this indication) is menopausal hormone therapy. Therefore, the companies listed making HRT accessible are also important solutions for hot flashes.

GHOST MARKET: Based on the prices of the current solutions listed above, we estimate the price of a solution for menopausal hot flashes to be around \$400 per patient.

US Market: \$18.8B

Population: 47M

Cost: \$400

47M x \$400 = \$18.8B

47M



women experience hot flashes. The most effective treatment is menopausal hormone therapy.

Vaginal Dryness

PROBLEM: Vaginal dryness, also known as vulvo-vaginal atrophy, is a common symptom of perimenopause and menopause that can lead to general discomfort, pain during intercourse, recurring UTIs, urinary incontinence and a decline in quality of life. Treatments include over-the-counter lubricants, as well as prescription estrogen (oral and vaginal estrogen) therapies. However, many women are reluctant to use hormone-based treatments or do not have access to prescriptions, and over-the-counter lubricants may not provide long-term relief.

POPULATION: About 50-60% of the 63M menopausal women in the US experience vaginal dryness, and some healthcare providers believe this estimate is lower than the actual incidence ([source](#)). Thus, we can assume a population size of 35M women who experience vaginal dryness.

NEW TECHNOLOGY: The following startups are developing non-hormonal products for long-term vaginal atrophy relief.

Bonafide: *Non-hormonal personal care products specifically designed to address vaginal dryness (\$52/month or \$625/year)*

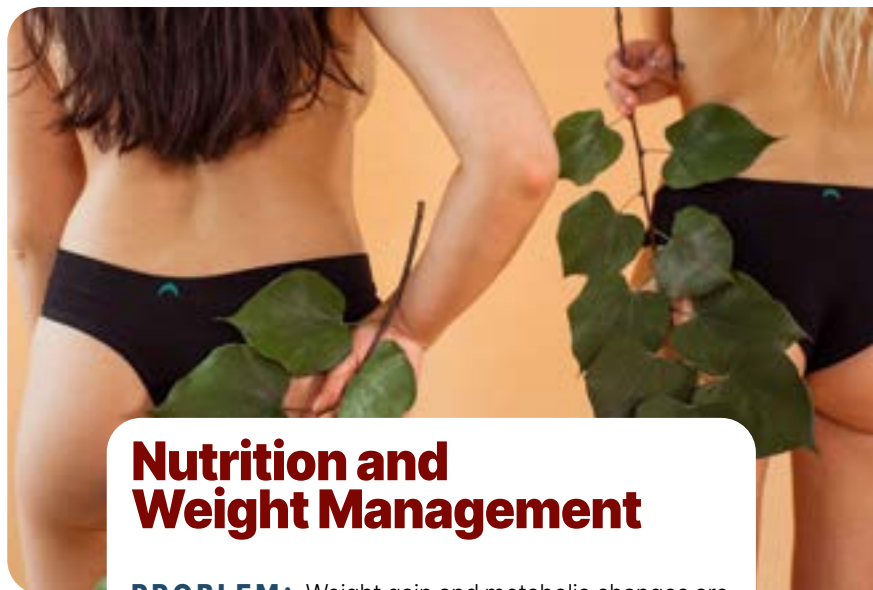
Azure Biotech: *Novel formulations for treating vulvovaginal atrophy (VVA), offering a targeted solution for vaginal dryness*

Joylux: *Red light therapy device used as a non-invasive treatment for vaginal dryness (\$395)*

Hormonal solutions like Estrin (owned by Pfizer) and Vagifem (owned by Novo Nordisk) are effective in treating vaginal atrophy. Therefore, the companies listed above that make menopause Rx accessible are also important solutions for vaginal atrophy.

GHOST MARKET: Based on the prices of the solutions listed above, we estimate the average annual cost of vaginal dryness solutions to be \$500 per patient per year.

US Market: \$17.5B
Population: 35M
Cost: \$500
35M x \$500 = \$17.5B



Nutrition and Weight Management

PROBLEM: Weight gain and metabolic changes are common during menopause, increasing the risk of cardiovascular disease, diabetes and other health issues. Current approaches include general dietary recommendations and exercise plans, which are often not tailored to the specific needs of menopausal women.

POPULATION: Approximately 60-70% of the 63M menopausal women in the US struggle with weight management ([source](#)). Thus, we can assume a population size of 41M women who experience nutrition and weight challenges during menopause.

NEW TECHNOLOGY:

Bodyline Clinic: *UK-based in-person and telehealth clinics specializing in menopause and weight loss, providing personalized care plans (starts at £100/month)*

Liminal: *Supplements and classes designed to address the specific nutritional needs of menopausal women (£42-£130/month)*

Winona: *Personalized care, including labs and access to doctors, focused on managing weight gain and other menopause-related health concerns*

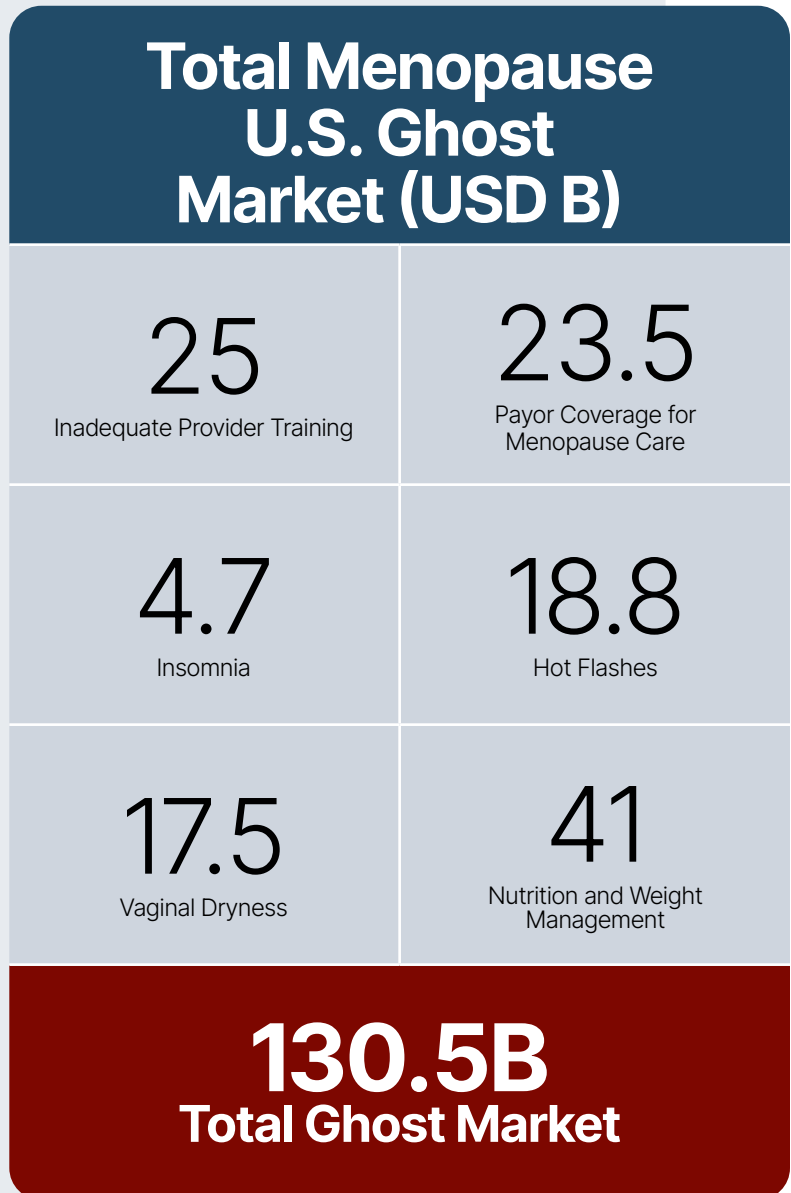
GHOST MARKET: Based on the prices of the solutions listed above, the average annual cost of new menopause nutrition and weight loss programs is estimated to be \$1,000 per patient per year.

US Market: \$41B
Population: 41M
Cost: \$1,000
41M x \$1,000 = \$41B

SECTION TWO | MENOPAUSE

SECTION SUMMARY

With increasing demand for accessible, affordable and effective solutions, this market represents a unique opportunity to drive impact and returns. Investors and innovators should address health disparities in menopause and seize this high-growth market opportunity.



SEXUAL HEALTH

Sexual health, a fundamental aspect of overall well-being, has been marginalized within the broader healthcare landscape.

Despite its critical importance, this category has faced **systematic neglect** from providers, patients and investors alike.

Sexual health encompasses physical, emotional, mental and social well-being, yet access to **comprehensive sexual health services** remains limited.

Investments in **sexual health** have also lagged behind other healthcare sectors. This underinvestment is further reflected in the **lack of innovative solutions** and technologies aimed at improving sexual health outcomes, as highlighted by a 2021 report from McKinsey & Company, which noted that **only 3%** of healthcare startups focus on sexual health ([source](#)).

The following report illuminates five gaps in sexual health that could pose lucrative investment opportunities, including access to STI testing, understanding the vaginal microbiome, low libido during perimenopause, menopause and postmenopause, sexual health education, and sex therapy.



Access to STI Testing

PROBLEM: Approximately one in five individuals in the U.S. are living with a sexually transmitted infection (STI), with 26M new infections each year in the U.S. ([source](#)). Infections include human papillomavirus (HPV), herpes simplex virus (HSV), trichomoniasis, chlamydia, gonorrhea, human immunodeficiency virus (HIV), hepatitis B virus (HBV), and syphilis. Nearly one in two STIs are acquired by people ages 15 to 24 years old ([source](#)). However, screening is not included in primary care and requires separate scheduling. Stigma, scheduling difficulty, time to receive results, and treatment cost are all reported barriers to access STI testing. Disparities in infection rates and access to testing are also significant between racial/ethnic groups. According to the CDC, for chlamydia, gonorrhea, and syphilis, Black males and females had higher rates of infection than their White peers ([source](#)).

POPULATION: In the U.S., STIs affect one in five individuals, with nearly 68M infections requiring treatment in a given year ([source](#)).

NEW TECHNOLOGY:

Testmate: Rapid at-home, urine-based STI tests to detect chlamydia and gonorrhea in both men and women. Results are available in under 30 minutes

Dame: Sexual health products, including at-home STI testing kits for gonorrhea, chlamydia, HIV and syphilis. A sample is collected at home and sent to a lab for analysis. (~\$70/test)

GrapheneDX: A platform for at-home testing, including at-home STI tests

GHOST MARKET: Based on the average price points of the innovations listed above, we will assume a \$45 price for the purpose of our market calculations.

US Market: \$3.1B

Population: 68M

Cost: \$45

68M x \$45 = \$3.1B

1 in 5

individuals in the U.S. are living with sexually transmitted infections, with 26 million new ones each year.



 = an Amboy St Ventures portfolio company

Vaginal Microbiome Imbalances and Infections

PROBLEM: Researchers are finding that the composition of the vaginal microbiome contributes to rates of bacterial vaginosis (BV), urinary tract Infections (UTIs), STIs and infertility. It likely also contributes to the contraction/prevention of HPV, and can potentially influence a woman's risk of cervical cancer. A bacterium called lactobacillus is often regarded as a helpful player in maintaining balance and preventing dysbiosis; however, things like antibiotics can disrupt healthy bacteria and cause infections like BV. BV often goes undetected, but can increase susceptibility to STIs, including HIV, and are associated with an increased risk of pelvic inflammatory disease (PID) and other complications, including infertility ([source](#)). Recommended treatment for BV includes antibiotics; however, approximately 80% of women with BV will experience recurrence, and there is a rise in incidents of BV strains resisting conventional treatments ([source](#)).

While BV is the most common vaginal condition for women ages 15-44, the rate for Black women is higher ([source](#)). These findings point to a greater need for diverse sampling and research on the relationship between microbial communities as it relates to health outcomes. While bacteria within the biome can be an indicator for major health concerns, it is hard to interpret microorganisms' relationships across diverse populations. While factors such as douching, having multiple sexual partners, and hormonal shifts are associated with BV, the exact cause remains unclear ([source](#)).

More broadly, vaginal discomfort caused by imbalances in the microbiome manifest as yeast infections, cytolytic vaginosis, vulvodynia and aerobic vaginitis. Understanding the microbiome can provide more comfort and clarity for vaginal health concerns.

"The vaginal microbiome is central to many aspects of women's health across the reproductive life span. This includes

acquisition of vaginal infections and impact to fertility and maternal preterm birth in the earlier period of a woman's life. Vaginal dysbiosis has implications later during the peri- and menopausal transition with impacts related to vulvo-vaginal atrophy. Later in life, UTIs, incontinence, and OAB [overactive bladder] can be correlated with vaginal dysbiosis. This is a central theme for which there is much more research that needs to be conducted and ultimately translated into clinical utility." — Elizabeth Attias, President & CEO Atom Strategic Consulting

POPULATION: In the U.S., approximately 22M reproductive-age women experience BV ([source](#)). Also, 12% of all women experience at least one UTI each year, or 17M women in the U.S. ([source](#)).

NEW TECHNOLOGY:

Evy: *At-home vaginal microbiome testing and comprehensive treatment programs to provide personalized education about vaginal health*

Hey Jane: *Virtual care for medication abortion, birth control and intimate care needs, including BV and UTI treatment*

PhioGen: *Precision antibiotic for treatment of recurring UTIs*

GHOST MARKET: For this market calculation we will use a price point of \$129 based on the cost of Evvy's at-home vaginal microbiome test. We estimate the affected population to be 39M women.

US Market: \$5B
Population: 39M
Cost: \$129
39M x \$129 = \$5B



22M

reproductive age women in the U.S. experience bacterial vaginosis. 12% of all women experience at least one UTI each year.

 = an Amboy St Ventures portfolio company

Low Libido during Perimenopause, Menopause and Postmenopause

PROBLEM: The average life expectancy of women in the U.S. is 81 years. Thus, women are spending up to 40% of their lives in either perimenopause, menopause or postmenopause ([source](#)), yet their sexual pleasure is often overlooked. A primary symptom of perimenopause and menopause is low libido. Low libido can be multifactorial. For example, hypoactive sexual desire disorder (HSDD) is a persistent or recurrent absence of desire for sexual activity. HSDD is thought to occur during the early years of perimenopause; for some women, HSDD can arise even earlier in life. However, sexual pleasure is a topic that many women do not feel supported in exploring during this stage of life. With the changing narrative around menopause, together with the growing amount of women entering this life stage, there is a need for more innovation.

POPULATION: In the U.S., more than 63M women are over the age of 50, which is the typical start of menopause ([source](#)). More than a third of women in perimenopause or menopause report having sexual difficulties, from a lack of interest in sex to trouble having

an orgasm ([source](#)). Therefore, the affected population is approximately 21M women.

NEW TECHNOLOGY: There is demand for a “female Viagra” to enhance libido.

Addyi: FDA-approved pill for female hypoactive sexual desire disorder (HSDD), typically priced at \$100-\$300/month depending on the pharmacy and insurance

Dame Products: Female sexual pleasure supplements that enhance libido (\$26/month)

Alice Confections: Chocolates that use natural ingredients to increase sexual desire (\$44/month)

GHOST MARKET: Based on the solutions mentioned above, the average price of libido enhancements can range from roughly \$26-\$300 a month. For this analysis, we will use the average of \$140 per month, or \$1,680 per year.

US Market: \$35.3B
 Population: 21M
 Cost: \$1,680
 21M x \$1,680 = \$35.3B

low libido can be multifactorial

the affected population is approx. 21M women

there is a need for a “female Viagra”

Vaginal Atrophy

Vaginal atrophy remains significantly underserved with limited treatment options and attention compared to other sexual health issues and a large Ghost Market. Refer to the Menopause section to review this market.





89M
adults in the U.S. have not received sexual health education.

Sexual Health Education

PROBLEM: In the U.S., the number of women who have never received sexual education grew from 30% in 2002 to 34% in 2015, with recent data indicating similar trends ([source](#)). Only 30 states and the District of Columbia require public schools to teach sex education ([source](#)).

POPULATION: Currently, of the 258.3M U.S. adult population, ([source](#)) 34-40% do not receive sexual education ([source](#)). Using the lower end of the range, we conservatively assume 89M people in the U.S. do not receive sexual education.

NEW TECHNOLOGY: To bridge this gap, the following companies are making sexual health education more accessible.

Rosy: Sexual health and pleasure resources, audio erotica, and other support (\$50-\$150/month)

Allbodies: Live and on-demand sexual health classes (\$15-\$50/class)

QUIVR: Personalized sexual education and coaching for women (\$250/session)

GHOST MARKET: Based on the current solutions listed above, we estimate a price of \$200/year.

US Market: \$17.8B
Population: 89M
Cost: \$200
89M x \$200 = \$17.8B

Sex Therapy

PROBLEM: Sexual health challenges, such as low desire, arousal difficulties, performance anxiety and relationship dissatisfaction, can impact a woman's emotional well-being, as well as her relationships. While sex therapy is designed to address these issues, the current system is failing to meet growing demand. With only 1,276 certified sex therapists in the U.S. ([source](#)), access to professional help is limited, especially in underserved areas. Traditional in-person therapy is often costly, time-consuming and stigmatized, further discouraging individuals from seeking support.

POPULATION: It is estimated that 9-19% of the adult population could meet criteria for sex dysfunctions and/or psychosexual variables ([source](#)). These include issues with lack of sexual desire or arousal, sexual and relationship satisfaction, and psychological distress. There are 258.3M adults in the U.S. over 18 ([source](#)). 9% of this population equals 23M adults (both men and women) who could be seeking sex therapy.

NEW TECHNOLOGY: Some platforms are offering personalized sex therapy, mindfulness and coaching as an avenue to both increase access to and offer additional resources.

Coral: Platform for increasing sexual satisfaction through personalized lessons (\$20/lesson)

Ferly: Guided audio to help bring mindfulness into sexual encounters (£12.99/month)

Lover App and Rosy: Education, therapy, coaching, tutorials and different plan types offer a look into supporting sex therapy for more people (\$50-\$150/month)

GHOST MARKET: Based on the solutions listed above, a median price would be around \$200/year, far less than traditional therapy. For the estimated population, as we noted earlier, we use 23M.

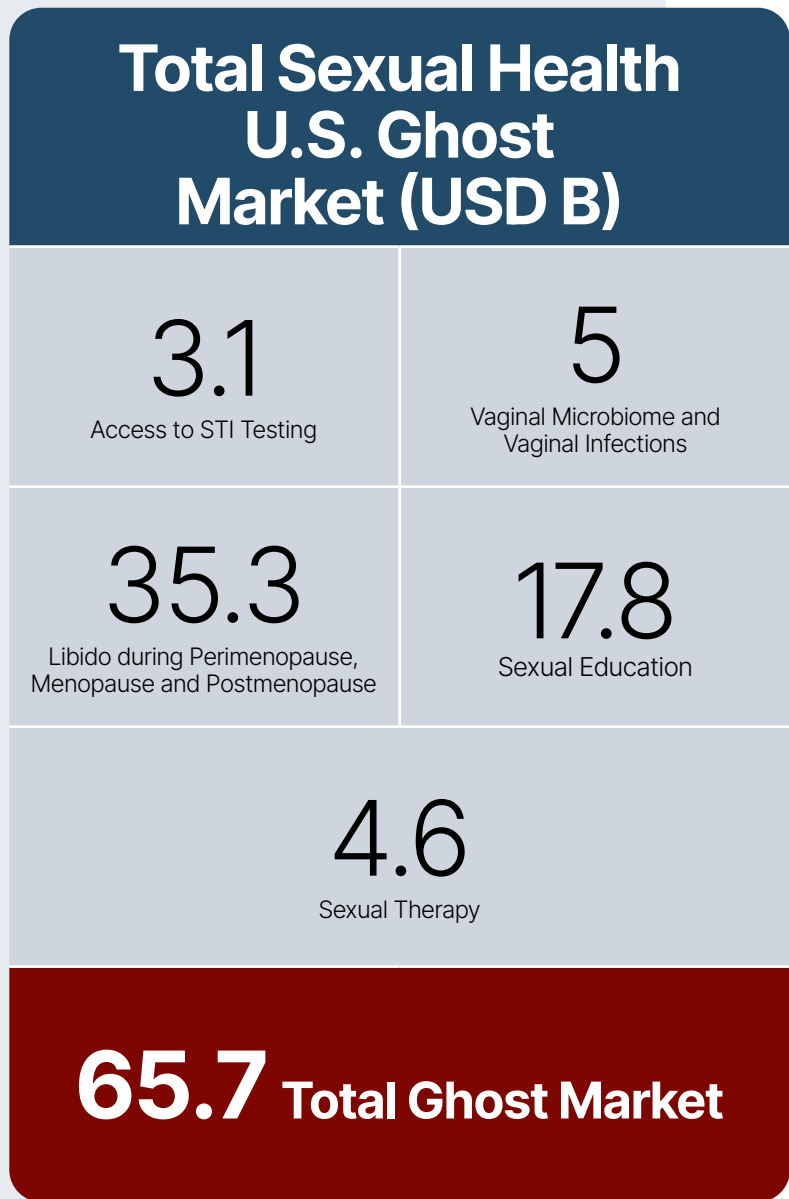
US Market: \$4.6B
Population: 23M
Cost: \$200
23M x \$200 = \$4.6B

SECTION THREE | SEXUAL HEALTH

SECTION SUMMARY

Sexual health has long been a category overlooked by providers, patients and investors. But with a market size over \$60 billion, there is a significant investment opportunity.

Emerging companies are poised to transform the way consumers manage their sexual health. Innovations in digital health, consumer packaged goods (CPG) brands and education are at the forefront of this change.



HEALTHY AGING

As women age, they face **unique health challenges** that require specialized approaches and innovative solutions. Addressing these unmet needs is critical for improving health outcomes and **fostering innovation and investment** in eldercare.

This section delves into the specific **health needs of aging women**, identifying gaps in current healthcare practices and highlighting potential **areas for growth** and development.

The following report illuminates six gaps in the aging category that could pose lucrative investment opportunities, including urinary incontinence, bone health, cancer screening, cognitive health, mental health and heart health.

89M

women in the US suffer from incontinence.



Urinary Incontinence

PROBLEM: Urinary incontinence disproportionately affects older women, leading to discomfort, embarrassment, and a decreased quality of life. Many women do not seek treatment due to stigma or the ineffectiveness of current solutions.

POPULATION: Of the 25M adults in the U.S. suffering from some form of urinary incontinence, 75-80% of those are women ([source](#)). That means about 19M women in the U.S. suffer from urinary incontinence.

NEW TECHNOLOGY:

Origin: Brick and mortar clinic network providing pelvic floor physical therapy (\$150 per consultation)

Flyte: Medical device for the effective treatment of stress urinary incontinence (\$1,650)

Attn Grace: Skin-safe protection for bladder leaks (\$15/28 pads)

Jude: Natural, clinically tested supplement for bladder health (\$28.50/month)

GHOST MARKET: Based on the emerging technologies listed above, from pelvic floor physical therapy to incontinence pads, we averaged out the cost to be around \$500 per year. As we noted earlier, we use a population size of 19M.

US Market: \$9.5B
Population: 19M
Cost: \$500
19M x \$500 = \$9.5B



Bone Health

PROBLEM: Postmenopausal women are at a significantly higher risk of osteoporosis, leading to fractures, decreased mobility and long-term care needs. Bone, hip and pelvis fractures are the primary causes of disability and often death for elderly women. Standard care includes bone density scans, targeted physical activity, and calcium/vitamin D supplements. However, adherence is often low, and many women are not regularly screened until a fracture occurs.

POPULATION: Of the estimated 10M Americans with osteoporosis, more than 8M (80%) are women ([source](#)). Another 44M Americans have low bone density ([source](#)).

NEW TECHNOLOGY:

Bone Health Technologies (OsteoBoost): FDA-cleared wearable for treatment of osteopenia (\$995)

MightyHealth: Online platform to lose weight, reduce joint pain, or improve mobility and balance (\$29.99/month)

GHOST MARKET: Based on the current prices of wearable devices, bone density monitoring and exercise programs, like [OsteoBoost](#) and [MightyHealth](#), we are estimating the cost to be \$400 per patient per year. As we noted earlier, we use a population size of 8M.

US Market: \$3.2B
Population: 8M
Cost: \$400
8M x \$400 = \$3.2B

Cancer Screening

PROBLEM: Older women face a heightened risk of specific cancers such as breast, ovarian, cervical and uterine cancer. Beyond breast cancer, which is well studied and has received significant investment for the development of screening methods, reproductive cancers are largely under-researched and underfunded. General understanding of the disease pathophysiology is limited despite uterine cancer being the most common GYN cancer. Early detection is crucial, yet often delayed due to inadequate screening and diagnostic tools. Current care includes routine screenings and conventional treatments like surgery and chemotherapy. However, delays in screening and a lack of personalized treatment contribute to poorer outcomes for many older women.

POPULATION: Around 63% of U.S. women ages 40-74 undergo mammograms every two years. With about 77M women in this age group, this equates to approximately 48M mammograms biennially, or 24M annually ([source](#)). Approximately 62% of adults ages 50-75 are screened for colorectal cancer. For women in this group (roughly 74M), that accounts for around 23M women annually, with screenings like colonoscopies and FIT tests ([source](#)). For this Ghost Market calculation, we will assume 23M women would undergo more precise, less invasive or more affordable cancer screening.

NEW TECHNOLOGY: AI-driven genomic testing and non-invasive diagnostic tests are revolutionizing cancer detection.

Imagen AI: AI-based precision oncology, dedicated to decoding cancer using biopsy images

AOA Inc.: Less invasive, early detection platform focused on women's health (between \$500 and \$1,000 [\[source\]](#))

Blue Box: Non-invasive urine test to diagnose breast cancer

GHOST MARKET: Based on the solutions listed above, we are estimating the cost to be \$275 per patient. As we noted earlier, we use a population size of 23M.

US Market: \$6.3B
 Population: 23M
 Cost: \$275
 23M x \$275 = \$6.3B



Beyond breast cancer, reproductive cancers are largely under-researched and underfunded.

Cognitive Health

PROBLEM: Cognitive decline as well as Alzheimer's disease and other types of dementia affect older women disproportionately, significantly impairing quality of life and placing a heavy burden on caregivers.

POPULATION: In the U.S., over 5M women ages 65+ are affected by cognitive decline or dementia ([source](#)).

NEW TECHNOLOGY:

Lumosity: Brain training program to exercise memory, flexibility and more (\$11.99/month)

Rippl: Dementia care platform partnered with the Alzheimer's Association

There are drugs coming up through the FDA process like Remternetug and Buntanetap that are being developed by larger companies to address early-stage Alzheimer's disease.

GHOST MARKET: Based on the current prices of cognitive training apps, AI-driven diagnostics and care platforms we are estimating the cost to be \$900 per patient. As we noted earlier, we use a population size of 5M.

US Market: \$4.5B
 Population: 5M
 Cost: \$900
 5M x \$900 = \$4.5B

Mental Health Care

PROBLEM: Older women disproportionately face mental health challenges such as depression and anxiety compared to their male counterparts. Despite the prevalence of these issues, they are frequently underdiagnosed and undertreated. Traditional care for mental health in older women includes psychotherapy and medication. However, many older women face barriers to accessing care, especially those in rural areas or with mobility issues. Additionally, the stigma surrounding mental health deters many from seeking the help they need.

POPULATION: In the U.S., more than 20% of people ages 55 or older may have some type of mental health problem ([source](#)). There are approximately 54M women over the age of 55 in the U.S. ([source](#)). Therefore we assume that approximately 11M women ages 55 or older experience mental health challenges.

NEW TECHNOLOGY: Telepsychiatry platforms, virtual care services and digital mental health are emerging to bridge gaps in access, offering convenient support for older women.

Encounter Telehealth: *Psychiatric evaluations, medication management, counseling and therapy services for older adults*

SilverCloud Health: *Evidence-based digital mental health and well-being courses for aging adults*

GHOST MARKET: Based on the price of current technologies like digital mental health solutions for older women and standard Medicare reimbursement rates, we are estimating the cost to be \$1,000. As we noted earlier, we use a population size of 11M.

US Market: \$11B
 Population: 11M
 Cost: \$1,000
 11M x \$1,000 = \$11B



A woman's risk of heart disease increases with age and after menopause.



Heart Health

PROBLEM: Heart disease is the leading cause of death for women in the U.S., with one in three women dying of either heart disease or stroke ([source](#)). A woman's risk of heart disease increases with age and after menopause. Hormonal changes in a woman's body during perimenopause and menopause have been shown to impact cardiovascular health. Yet, 80% of these heart disease-related deaths are preventable. There is a severe lack of women-centered research and tailored medical intervention when it comes to heart disease.

POPULATION: More than 60M women in the United States have some form of heart disease, including high blood pressure, coronary artery disease, heart failure and stroke ([source](#)).

NEW TECHNOLOGY: Telehealth platforms and virtual care services are emerging to bridge gaps in access, offering convenient support for older women.

Systole Health: *Virtual group cardiometabolic care that provides personalized medical care and community (\$50/month)*

Devyn Health: *Comprehensive heart and metabolic health programs specifically tailored for women with diabetes and pre-diabetes, gestational diabetes, PCOS, high blood pressure, high cholesterol and preeclampsia, and for women taking HRT or undergoing radiation*

HelloHeart: *Employee benefit app that helps patients track their heart health and get real-time tips to manage their heart health*

GHOST MARKET: Based on the price of the technologies listed above, we are estimating the cost to be \$400 per year. As we noted earlier, we use a population size of 60M.

US Market: \$24B
 Population: 60M
 Cost: \$400
 60M x \$400 = \$24B

SECTION FOUR | HEALTHY AGING

SECTION SUMMARY

The aging women’s health market represents a significant and growing opportunity. Emerging technologies are poised to transform the eldercare market, particularly in addressing the unique health needs of aging women. Innovations in digital health platforms, wearable devices and AI are at the forefront of this change. However, industry leaders emphasize the importance of aligning these innovations with Diversity, Equity and Inclusion (DEI) principles to ensure that all women, regardless of background, benefit from these advancements.



MENSTRUATION

Although menstruation is a normal human function, it is an **area of women's health that is underserved** in several domains.

According to the World Bank, over **300 million** women are menstruating daily, with more than **2 billion** women menstruating each month ([source](#)).

However, it was not until recently that more robust **conversations surrounding solutions**, impact, access and support **have started** to take hold.

The following report illuminates four gaps in the menstruation category that could pose lucrative investment opportunities, including abnormal uterine bleeding, endometriosis, access to period care and hormonal support.

Abnormal Uterine Bleeding (AUB)

PROBLEM: Abnormal or dysfunctional uterine bleeding accounts for 5% of emergency department visits ([source](#)). Abnormal uterine bleeding (AUB) is common during perimenopause due to hormonal fluctuations, with up to 30% of women experiencing such irregularities. Fibroids, a condition when non-cancerous growths develop inside and outside of the uterus, can also result in heavy bleeding. AUB occurs in 20-30% of women and accounts for 40-60% of all hysterectomies ([source](#)). Although AUB impacts a significant number of women, heavy menstrual bleeding has been culturally normalized and therefore is not adequately addressed. The current standard in care for AUB often includes hormonal medications or surgical options such as a hysteroscopy and hysterectomy (a procedure to remove the uterus) or uterine ablations (a minimally invasive surgical procedure that destroys the lining of the uterus to treat abnormal uterine bleeding). Hysterectomies and uterine ablations are not ideal for patients planning to start a family as the procedures render patients permanently infertile. Additionally, there are no FDA-approved drugs or devices for AUB and neither is there an ICD-10 code for the condition.

POPULATION: One in three women will experience AUB at some time in their life ([source](#)). In the US, there are 35M cases of AUB annually (29M OB/GYN visits + 6M ER visits).

NEW TECHNOLOGY:

Innovations aim to replace hysterectomies and other invasive treatments by providing less invasive solutions that are more targeted, in-office, and designed to reduce recovery time while improving patient outcomes.



OCON Therapeutics: Intrauterine drug delivery system with their IUB Seed product, which is a targeted, non-hormonal, in-office procedure for AUB that doesn't require a hospital setting or anesthesia, with minimal recovery time

Avana Health: Women's healthcare company focused on treating AUB and postpartum hemorrhage (PPH). Their treatment plan for AUB uses a combination of drug and device. An ideal solution would also allow patients to maintain their fertility post-treatment.

GHOST MARKET: The average cost of an IUD insertion can range from \$500-\$1,300 ([source](#)). If we estimate the cost of an AUB solution to be roughly similar to that of an IUD, we can use \$668, depending on insurance and other payment options. As we noted earlier, we use a population size of 35M.

US Market: \$23.4B
Population: 35M
Cost: \$668
35M x \$668 = \$23.4B



NEW

innovations aim to replace hysterectomies and other invasive treatments by providing less invasive solutions that are more targeted, in-office, and designed to reduce recovery time while improving patient outcomes.

Endometriosis



An endometriosis diagnosis often isn't known by the patient until they have an issue with fertility.

PROBLEM: Endometriosis is a condition where tissue resembling the uterine lining grows outside of the uterus, leading to dysmenorrhea, dyschezia, dyspareunia, infertility and/or other complications. It is difficult to diagnose and is the leading cause of unexplained infertility in women ([source](#)). An endometriosis diagnosis often isn't known by the patient until they have an issue with fertility. In fact, the average time to diagnosis is seven years ([source](#)). Currently, the only method to diagnose endometriosis is through a laparoscopy — an invasive surgery that costs ~\$17,000 ([source](#)). Existing treatment options are hormonal medications (Elagolix, Relugolix, Myfembree and GnRH antagonists) that produce unwanted side effects like menopausal symptoms and cannot be taken long-term. Insurance reimbursement for these medications is also challenging. Hormonal birth control is used to mitigate symptoms but is not ideal for women who are trying to conceive ([source](#)).

POPULATION: WHO reports that globally, 10% of the world's 190M reproductive-aged females have endometriosis ([source](#)). In the U.S., it is estimated 65.5M females are of reproductive age ([source](#)). A 10% incidence rate of endometriosis would put the impacted U.S. population at 6.5M women.

NEW TECHNOLOGY: Innovations aiming to address endometriosis generally fall into two buckets: diagnostics and therapeutics.

From a diagnostics perspective, there are non-invasive diagnostic tests on the horizon through blood tests and saliva. The following companies are going through the FDA approval process:

Hera Biotech: *Non-surgical test for the definitive diagnosis and staging for endometriosis*

DotLab: *Non-invasive blood test that aids in the diagnosis of active endometriosis*

Serac Healthcare: *Molecular imaging agent to give insights at a molecular and cellular level for endometriosis*

Heranova Lifesciences: *Non-invasive, blood based endometriosis diagnostic test*

From a therapeutics perspective, the following non-hormonal, disease-altering therapeutics are going through the FDA approval process:

Gesynta: *Non-hormonal pharma solution for treating endometriosis*

Fimmcyte: *Non-hormonal treatment for late-stage endometriosis*

Maipi Therapeutics: *Non-hormonal treatment for endometriosis based on breakthrough FP antagonist (FPA) lead compounds licensed from Ferring Pharmaceuticals*

EndoCyclic Therapeutics: *Developing the first "curative" non-hormonal therapeutic for endometriosis using novel precision pH-sensitive peptides*

GHOST MARKET: The cost of endometriosis care could be around \$1,000 based on current practices. As we noted earlier, we use a population size of 6.5M.

US Market: \$6.5B

Population: 6.5M

Cost: \$1,000

6.5M x \$1,000 = \$6.5B



Access to Period Care

PROBLEM: Inaccessible period care or “period poverty” remains a large issue in menstrual health. In 2023, Thinx and PERIOD conducted a survey around period poverty in teens ([source](#)). Results indicated that 66% of teens felt anxiety at school due to lack of access to menstrual products and did not want to be at school during their periods. Furthermore, this year JAMA published a study indicating the age of menarche, the age when girls first get their period, has decreased, leading to earlier periods ([source](#)) and the need for greater access and education in schools. Innovation in increasing access to period products is mostly driven by non-profits, with some exceptions.

POPULATION: In the U.S., it is estimated 65.5M are of reproductive age ([source](#)). Period product accessibility is expected to impact up to 40% of menstruating people ([source](#)). To break it down further:

K-12 Education Market: Based on the 2018 census tables there are more than 145M females over age 9 in the U.S. school system.

University Market: There are roughly 19M students attending higher education, with 59% female (Statistica).

Other Markets (Entertainment, Venues, Middle Market): There are 750,000 restaurants (Food Industry), 900 stadiums (Betsports), and millions of middle market businesses.

NEW TECHNOLOGY: Access to menstruation products at no cost to the end user is a method of addressing period poverty. The companies below have been able to build a model in this area.



Aunt Flow: Dispensers and menstrual products for schools and workplaces to offer free period products

Egal Pads On A Roll: Menstrual pads dispensed on a toilet paper roll in public bathrooms at no cost to the user

GHOST MARKET: Bulk stocking menstrual supplies costs roughly \$5-\$7 per menstruating student per year ([source](#)). For the purposes of this solution we use \$6.

US Market: \$1.5B

K-12 Education Market:

Population: 146M

Cost: \$6/student/year

$146M \times \$6 = \$876M$

University Market:

Population: 18.9M

Cost: \$6/student/year

$18.9M \times \$6 = \$113M$

Other Markets:

(Entertainment, Venues, Middle Market):

Estimated additional \$500M

40%



Number of menstruating people that period product accessibility is expected to impact.



Hormonal Support, PMS, PMDD

PROBLEM: Premenstrual syndrome (PMS) is a cluster of symptoms ranging from cravings and fatigue to debilitating headaches, mood disorders, cramps and other pain. Current solutions are often hobbled together through a series of trial and error by individual women. For such a nearly universal experience, there isn't much attention paid to prevention and managing the root causes of PMS. Premenstrual dysphoric disorder (PMDD) is a severe form of PMS that affects a small percentage of women, typically during the luteal phase of their menstrual cycle (the week or two before menstruation). It causes emotional, behavioral and physical symptoms that are more intense and debilitating than typical PMS.

The need for hormonal support transcends PMS and PMDD and can be applied to a wide range of hormone imbalances related to contraception, menopause and more. For the purposes of the menstruation section of this report we will focus on PMS.

POPULATION: 75% of reproductive-age women experience some level of PMS ([source](#)). In the U.S., it is estimated that 66M are of reproductive age ([source](#)), implying that 49M women experience this problem.

NEW TECHNOLOGY: Nutrition and supplementation as a means to support hormonal health and symptoms is an area with increasing consumer traction.

Marea: *Supplementation for supporting hormonal health (~\$58.40/month)*

Food Period: *Supplementation for healthy menstrual and hormonal cycles. An alternative to hormonal birth control that is often prescribed to women to address period issues (\$23/month)*

Semaine Health: *Supplementation for period pain and PMS symptoms (\$27.99-\$31.99/month)*

Additionally, there are precision medicine and personalized data solutions that help patients understand their individual hormonal needs.

Eli Health: *Tech platform providing data insights and precision medicine for hormonal health*

Persperity Health: *Continuous hormone monitor for women's health insights and data tracking*

Impli: *Subdermal continuous hormone monitoring*

GHOST MARKET: Based on the prices of the solutions listed above, hormonal health support could cost just over \$36/month or \$441 annually. As we noted earlier, we use a population size of 49M.

US Market: \$21.6B

Population: 49M

Cost: \$441

49M x \$441 = \$21.6B



the need for hormonal support transcends PMS and PMDD

75% of reproductive-age women experience some level of PMS

SECTION FIVE | MENSTRUATION

SECTION SUMMARY

The menstruation market presents an urgent opportunity to address longstanding gaps in care and improve health outcomes for millions of women.

Advancing innovations in diagnostics, treatments and accessibility will help close these gaps and meet rising demand.

Now is the time to drive meaningful change and expand solutions that empower women through better menstrual health care.



CONTRACEPTION

Contraception has a long and fraught history, one filled with social and political contention, religious backlash, misinformation and uneven accessibility. Yet today it has become **an integral part** of many women's reproductive healthcare. Contraception is primarily used to prevent pregnancies, but it has also been prescribed to treat hormonal acne, abnormal uterine bleeding (AUB), polycystic ovarian syndrome (PCOS), endometriosis, ovarian cysts and other reproductive health conditions. Although contraception is widely used, it still fails to meet the needs of many patients. The **side-effects and inconvenience** of taking the pill are just some of the many reasons women seek alternatives to traditional birth control. **Another barrier is cost.** While Medicaid covers contraception, state variations in reimbursement for physician-administered options often create confusion, leading to underuse of the most effective methods. Commercial payor coverage has improved under the Affordable Care Act, but securing coverage for new products remains difficult.

"At Bayer, it took years of persistent communication with payers, demonstrating the economic **value of covering contraception** over the cost of unintended pregnancies," said Laura Clark-Kelly, former senior director, Market Access Strategy for Women's Healthcare and Oncology at Bayer.

Despite these challenges, **technologies are emerging** that will address these needs and, in turn, create new market opportunities for investment.

The following report illuminates three gaps in the contraception category that could pose lucrative investment opportunities, including non-hormonal birth control, male birth control (both long-term and daily) and pain-free IUD insertion.

Non-hormonal Birth Control

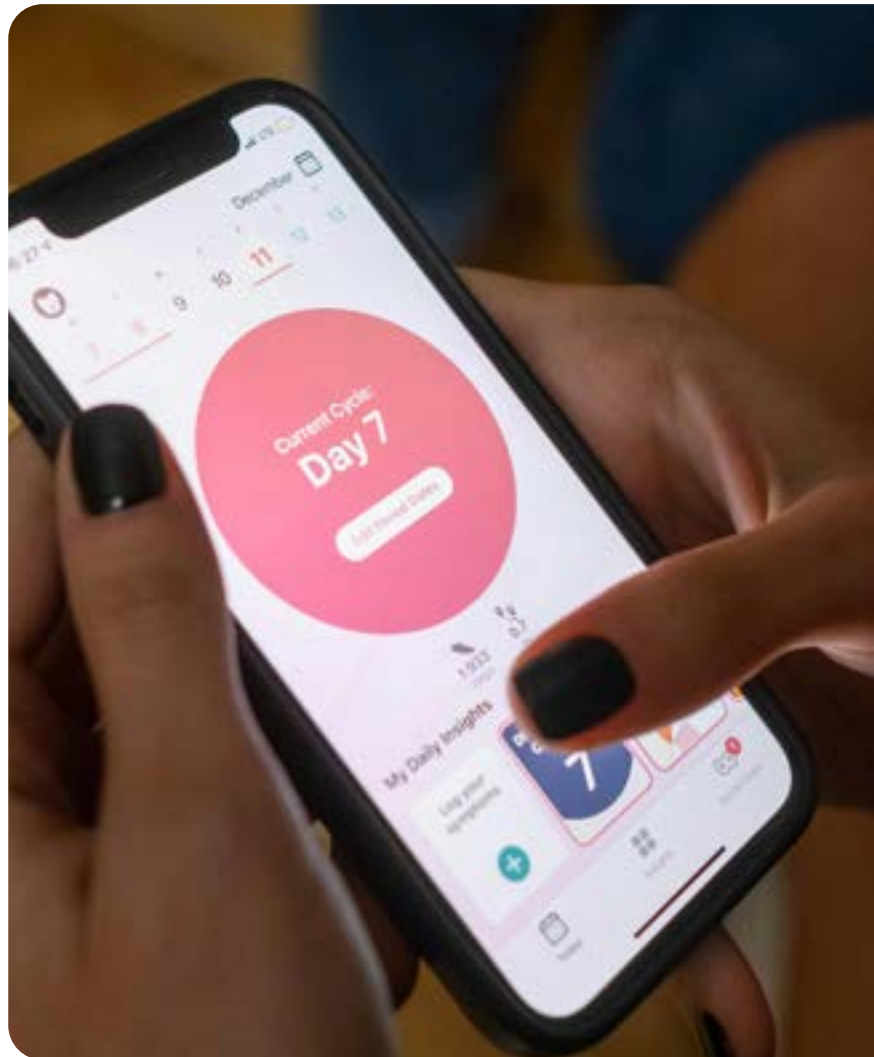
PROBLEM: While there exists a variety of hormonal, barrier and permanent contraceptive methods, women often experience unwanted side effects, leaving many women unsatisfied with the options available. Aside from condoms and the copper IUD, few non-hormonal solutions exist. Copper IUDs are a non-hormonal form of birth control with a more than 99% efficacy rate ([source](#)). Moreover, copper IUDs can last up to 12 years. However, side effects include heavier periods, more cramping and painful insertion.

POPULATION: The U.S. population of women who are of reproductive age (age 15-44) is around 65M ([source](#)). 65% of women in the U.S. ages 18-49 use some form of contraception ([source](#)). Therefore, we assume there are roughly 42M women in the U.S. who use contraception.

NEW TECHNOLOGY: Emerging contraception alternatives are gaining traction among younger women.

Natural Cycles: App that indicates a woman's fertility window, based on basal-body temperature, with a 99% efficacy rate contingent on perfect use ([source](#)). Natural Cycles can be used as a non-hormonal contraceptive in conjunction with the [Oura Ring](#). This method is 98% effective with perfect use, and 93% effective with typical use.

Phexxi: Hormone-free birth control prescription vaginal gel that is FDA approved to prevent pregnancy; this medication is 93% effective with perfect use and 86% effective with typical use



While these solutions are ideal for having fewer side effects, the efficacy is lower than that of an IUD (which is 99% effective). An ideal solution would have higher efficacy and result in no side effects.

GHOST MARKET: The average cost of birth control is around \$250 a year ([source](#)). We assume this price point for the purposes of our market calculations. As we noted earlier, we use a population size of 42M.

US Market: \$10.5B
 Population: 42M
 Cost: \$250
 42M x \$250 = \$10.5B

65%

of women in the U.S. ages 18-49 use some form of contraception.





Male Birth Control

PROBLEM: Currently, vasectomies and condoms are the only two birth control options available to men. Vasectomies are considered permanent and sometimes irreversible. Permanent procedures are not always practical for young people who are not “family complete.” Without multiple options for men, women disproportionately bear the responsibility of preventing pregnancies. However, according to the Male Contraceptive Initiative, approximately 17M men in the U.S. are seeking alternatives to condoms and vasectomy ([source](#)), and research has shown an increase in demand for male contraceptives, especially after the overturning of Roe v. Wade in 2022. Expanding male contraceptives will not only alleviate the burden on women, but also provide more equitable solutions for family planning.

POPULATION: A 2019 global survey found that 44% of men would consider using male contraceptives if they were available, with higher interest among younger and educated men ([source](#)). A 2022 U.S.-focused study found that between 52% and 62% of men expressed interest in using male birth control ([source](#)). As mentioned above, according to the Male Contraceptive Initiative, approximately 17M men in the U.S. are seeking alternatives to condoms and vasectomy ([source](#)).

NEW TECHNOLOGY: There are a few male birth control technologies going through the FDA approval process:

Contraline: *Maker of the ADAM and NES/T. ADAM is a hydrogel that can be injected in the vas deferens. An early stage trial was successfully conducted on 23 men in Australia, with no major side effects. NES/T is a hormonal gel, in the form of a topical cream, that is applied on the shoulders daily and contains hormones to reduce sperm production.*

Your Choice Therapeutics: *A non-hormonal pill for men. The company recently completed its first in-human clinical study*

GHOST MARKET: To calculate the market for alternative male birth control methods we used the \$600 price point based on the reimbursement amounts for similar female birth control options ([source](#)).

US Market: \$10.2B

Population: 17M

Cost: \$600

19M x \$600 = \$10.2B

17M 

men in the U.S. are seeking alternatives to condoms and vasectomy and research has shown an increase in demand for male contraceptives.

Pain Free IUD Insertion

PROBLEM: Intrauterine devices (IUDs) are one of the most popular forms of birth control due to their long-lasting functionality (5-12 years) and high efficacy rates. However, IUD insertions and removals are painful for many women. The procedure is typically conducted without local anesthesia despite eight in ten women reporting moderate to severe pain ([source](#)). Pain caused by IUD insertion is a barrier to accessing this resource. Despite its benefits as a long-term solution, IUDs will require pain mitigation solutions to encourage broader usage.

If new technology can demonstrate that less pain leads to greater use of IUDs, reducing unintended pregnancies, payors may show interest in covering this product at parity. The average cost of an unintended pregnancy can range from \$9,000 to \$12,000 for payors, depending on the level of care required, including prenatal care, delivery and potential postnatal complications. Reducing these costs through increased IUD adoption presents a strong economic argument for coverage.

“In my experience, successful market entry requires not just product innovation but strategic market access pathways, particularly in working with payers to secure broad coverage for new contraceptive solutions.” — Laura Clark-Kelly, former senior director, Market Access Strategy for Women’s Healthcare and Oncology at Bayer.

POPULATION: In the U.S., 4.4M women rely on IUDs today ([source](#)).

NEW TECHNOLOGY: Optimally shaped IUDs and improved insertion methods, among other technologies, are emerging to solve this need in the contraception space.

Aspivix: An alternative to the tenaculum which is used to stabilize the cervix during IUD insertion. A tenaculum can cause bleeding and discomfort. Aspivix aims to minimize these side effects by using suction technology that eliminates bleeding

OCON: The IUB Ballerine is one-third the size of a traditional IUD and functions similarly to the copper IUD. It is non-hormonal and has 99% efficacy.

3Daughters: Small frameless, non-hormonal IUD

GHOST MARKET: Based on the average cost of a traditional IUD, we assume a price point of \$1,000.

US Market: \$4.4B

Population: 4.4M

Cost: \$1,000

4.4M x \$1000 = \$4.4B



8 in 10

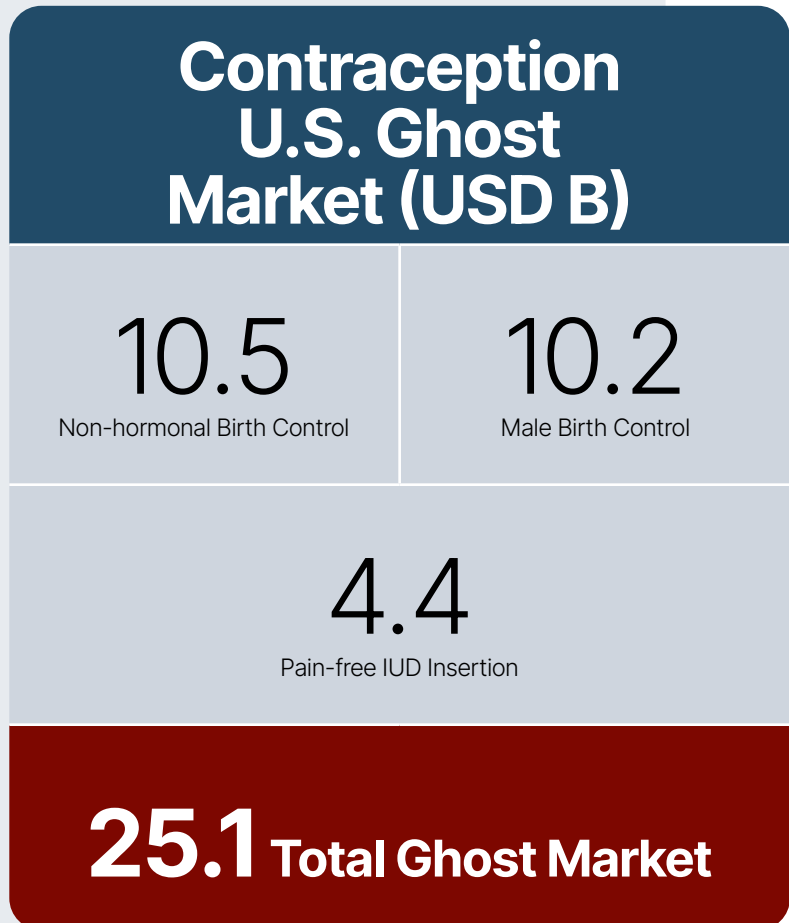
women report moderate to severe pain with the procedure typically conducted without local anesthesia.



SECTION SIX | CONTRACEPTION

SECTION SUMMARY

The alternative contraceptives market represents a significant investment opportunity. Emerging technologies are poised to transform the way women and men manage their reproductive health. Innovations in digital health platforms, wearables, therapeutics and medical devices are at the forefront of this change.



LGBTQIA+


HEALTH AND GENDER-AFFIRMING CARE

Despite significant advancements in healthcare, LGBTQIA+ individuals continue to **face persistent barriers** that impede their access to essential services. One issue is the inadequate availability and utilization of **Pre-exposure prophylaxis (PrEP)**, with the CDC noting that less than half of the 1.2 million individuals in the U.S. who could benefit from PrEP are currently prescribed the medication due to lack of access, stigma or cost. This stark disparity underscores the **urgent need for increased awareness and access** to PrEP among LGBTQIA+ communities.

Furthermore, the intersection of stigma, discrimination and limited access to appropriate care **contributes to higher rates** of anxiety, depression and other mental health disorders within these communities.

The following report illuminates three gaps in LGBTQIA+ healthcare that could pose lucrative investment opportunities, including access to HIV prevention and medication, culturally competent care and mental health.

Access to HIV Prevention and Medication: PrEP, PEP and ART



63%
of PrEP users identified social and individual barriers for consistent PrEP use.



PROBLEM: Pre-exposure prophylaxis (PrEP) is a highly effective HIV prevention medication recommended for HIV-negative individuals who engage in unprotected sex with multiple partners or have a sexual partner with HIV. Anal sex is the riskiest type of sex for HIV exposure or passing it on to others (called HIV transmission) according to the NIH ([source](#)). Taken as a daily pill or a shot every two months, PrEP can reduce the risk of HIV infection by over 90%. However, less than half of those that could benefit from PrEP were prescribed it in 2023. 63% of PrEP users identified social and individual barriers that make consistent PrEP usage a challenge ([source](#)). PrEP is only accessible as a prescription through a healthcare provider, which presents an access issue for individuals who feel distrustful of the healthcare system. Additionally, a lack of education, costs, and living in a rural area can prevent people from using PrEP. The brand-name PrEP medication can cost up to \$2,000 a month while the generic version can cost as low as \$60 a month. Under the Affordable Care Act, most insurance plans, including Medicaid and Medicare, are required to cover PrEP without cost-sharing.

Post-exposure prophylaxis (PEP) is similar to PrEP as a form of HIV prevention, however, it is for individuals exposed to HIV. PEP must be administered within 72 hours of exposure and can reduce the risk of infection by about 80% ([source](#)). PEP requires consistent use for 28 days, but retention can be challenging due to side effects, forgetfulness, busy schedules, etc. ([source](#)).

Antiretroviral therapy (ART) is another form of HIV management medication with a significant, underappreciated market. In 2023, 39.9M people were living with AIDS, but only 30.7M people accessed ART ([source](#)). Taking ART does not cure HIV, but it causes the viral load to be undetectable, which is considered untransmittable.

POPULATION: In the U.S., 1.2M people have HIV, with approximately 31,800 new infections each year ([source](#)). The Human Rights Campaign Foundation estimates that at least 20M adults in the U.S. identify as LGBTQIA+ ([source](#)). According to the U.S. Census Bureau, 46.4% of U.S. adults are single ([source](#)) and about 49.5% of the U.S. population is male ([source](#)). By this simplified method, we estimate 4.6M single men in the LGBTQIA+ population may be candidates for PrEP. We use this population as a conservative estimate for the Ghost Market calculation. However, it is not just single gay men; in fact many people that need PrEP have partners. Trans women, trans men and non-binary Assigned Female at

Birth (AFAB) people who have intercourse with gay men are among the most underserved ([source](#)).

NEW TECHNOLOGY: In recent years, telehealth services have become an essential tool for expanding access to healthcare, particularly for marginalized communities. For LGBTQIA+ individuals, specialized telehealth platforms not only provide easier access to critical care and affirming providers, but also offer privacy and convenience for those who may face barriers such as distance or discrimination in traditional healthcare settings.

Lvndr: *Lvndr caters specifically to LGBTQIA+ patients offering medication delivery, remote sexual health services and remote lab testing*

FOLX Health: *FOLX is another LGBTQIA+ centered telehealth clinic that provides access to PrEP and PEP. FOLX is in-network with a number of insurance companies; monthly memberships are available for \$39.99 with additional costs for primary care services, mental health services and medications.*

GHOST MARKET: The average cost of PrEP (without insurance) can be \$60 a month or \$720 a year ([source](#)).

US Market: \$3.3B
Population: 4.6M
Cost: \$720
4.6M x \$720 = \$3.3B

Culturally Competent Care

PROBLEM: Medical professionals often do not receive LGBTQIA+ specific training, leading to inadequate care ([source](#)). Compounded by potential stigma and biases, this can create an unwelcome environment for LGBTQIA+ individuals that is exacerbated across racial and ethnic lines ([source](#)). Providers without adequate culturally competent training may use someone's deadname, misgender them, demonstrate discriminative behaviors, judgment, etc. Negative experiences in healthcare settings deter patients from seeking the care they need. Moreover, changing healthcare providers can create uncertainties, causing many patients to avoid seeking care all together ([source](#)). Providers who lack specific training can harm LGBTQIA+ individuals, thereby exacerbating health disparities.

POPULATION: There are roughly 9.2M healthcare practitioners and technicians in the U.S. ([source](#)). To benefit from cost savings, payors are providing training courses for healthcare practitioners and technicians in the network. Payors are paying companies like Violet (see below) on a per member per month (PMPM) basis. There were 304M Americans who were insured in 2022 ([source](#)).

NEW TECHNOLOGY:

Violet: A platform that provides health providers with training courses on cultural competency for BIPOC, LGBQ, and TGNC individuals

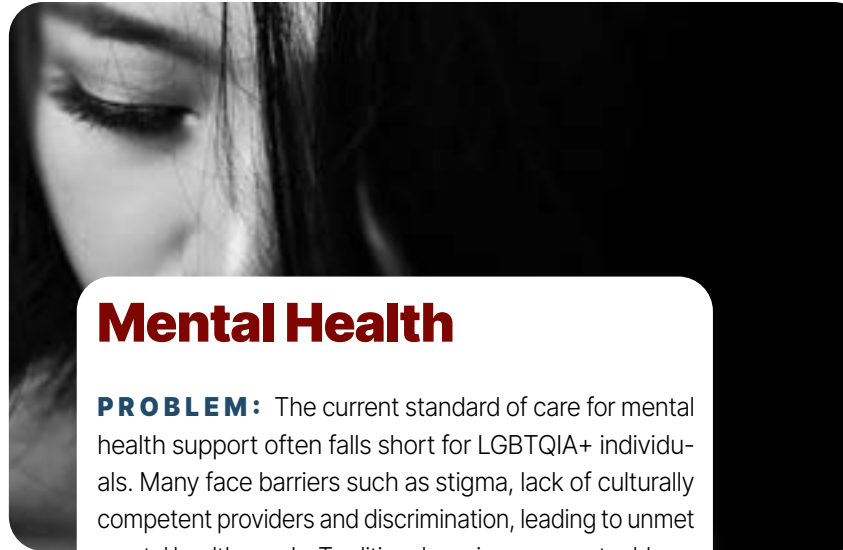
Inclusive+: A platform for training healthcare providers on cultural competency for the LGBTQ+ community and a directory of accredited providers with whom patients can book (\$300-\$500 per provider per year)

GHOST MARKET: Companies like Violet charge anywhere from \$.02 to \$1 PMPM for health plans to build and scale culturally responsive networks

- US Market: \$1.8B
- Population: 304M
- Cost: \$0.50 PMPM or \$6 PMPY
- 304M x \$6 = \$1.8B



67% of LGBT+ people reported needing mental health services over the past two years.



Mental Health

PROBLEM: The current standard of care for mental health support often falls short for LGBTQIA+ individuals. Many face barriers such as stigma, lack of culturally competent providers and discrimination, leading to unmet mental health needs. Traditional services may not address specific challenges related to sexual orientation or gender identity, making it difficult for LGBTQIA+ people to find affirming and inclusive care. This contributes to higher rates of anxiety, depression and other mental health concerns within the community ([source](#)). Additionally, access to specialized care is often limited, especially for those in rural areas or without sufficient insurance coverage.

POPULATION: 20M adults in the U.S. identify as LGBTQIA+ ([source](#)) and two-thirds of LGBT+ people (67%) reported needing mental health services over the past two years ([source](#)). Therefore, we can assume a target population of 13.4M.

NEW TECHNOLOGY:

FOLX Health: FOLX is a large health and wellness platform for the LGBTQIA+ community. Folx is compatible with a number of insurance companies; monthly memberships are available for \$39.99 with additional costs for primary care services, mental health services and medications.

GHOST MARKET

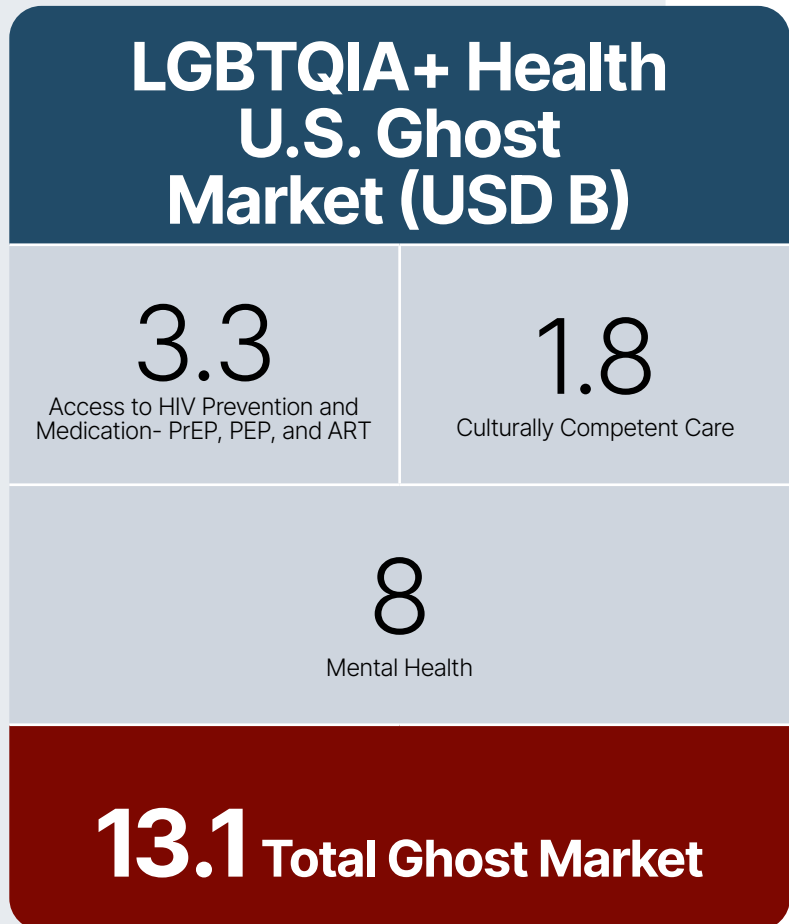
A standard virtual therapy session can cost anywhere from \$60-\$110 ([source](#)) depending on the company. Standard therapy programs can last six months to a year. If we assume the average patient pays for a six-month telehealth therapy program, we can assume a cost of \$600 to calculate the following market sizes:

- US Market: \$8B
- Population: 13.4M
- Cost: \$600
- 13.4M x \$600 = \$8B

SECTION SEVEN | LGBTQIA+ HEALTH AND GENDER-AFFIRMING CARE

SECTION SUMMARY

The unmet healthcare needs of the LGBTQIA+ community present a call to action for stakeholders across the health sector, including policymakers, healthcare providers and investors. As highlighted throughout this report, innovations in areas like access to PrEP, culturally competent care and mental health support reveal a significant market opportunity. Investing in the development of comprehensive, inclusive healthcare programs could address these unmet needs while also tapping into a substantial market potential. By prioritizing culturally competent care and expanding access to preventive measures like PrEP, investors can help foster healthier communities, drive meaningful change, and reduce overall cost and burden on our health systems.



MATERNAL HEALTH AND PREGNANCY

Maternal health is a critically underserved segment within the broader healthcare market. Despite advancements, substantial **gaps remain in maternal health** and pregnancy care, presenting significant investment opportunities.

The U.S. has experienced a concerning **rise in maternal mortality and morbidity** in recent decades, despite long-term historical progress. Compared to other high-income countries, the U.S. has worse maternal health outcomes, with significant **disparities based on race and location** ([source](#)). Healthcare systems often focus narrowly on labor and delivery, neglecting other crucial health conditions affecting pregnant women. Conditions like preeclampsia, gestational diabetes and perinatal mental health disorders are under-researched and **inadequately diagnosed** and treated ([source](#)).

There is a pressing need for comprehensive maternal care models that include mental health support, management of chronic diseases, extended postnatal care and attention to social determinants of health (SDOH), or non-medical factors like age and the conditions in which people are born, live, and work that impact health outcomes. **Innovative research and development** in these areas can unlock new treatment methodologies, presenting a potentially lucrative opportunity for investors.

Finally, marginalized groups, including women of color, sexual and gender minority (SGM) populations, and women with disabilities, **face compounded challenges**. Investments aimed at addressing these inequities can lead to significant improvements in maternal health outcomes and open new market segments.

The following report illuminates seven gaps in maternal health and pregnancy that could pose lucrative investment opportunities, including prenatal and postpartum mental health support, preterm birth, preeclampsia and gestational diabetes, postpartum hemorrhage, access to quality care, healthcare for marginalized groups and postpartum care.

Preterm Birth

PROBLEM: Preterm birth, prevention of which continues to elude the OB/GYN community, is a leading cause of neonatal morbidity and mortality, with lifelong health consequences for the child. The incidence of preterm birth poses a significant public health challenge. Current care practices primarily involve routine prenatal check-ups and reactive hospital-based interventions. However, these methods are often insufficient for preventing preterm births. Multiple prevention strategies have shown promise, but failed in the long term (i.e. supplemental progesterone and tocolytic treatment).

Due to the inability to predict or prevent preterm birth, outcomes often result in emergency situations, leading to NICU stays that are expensive and frequently result in profit losses for hospitals ([source](#)).

POPULATION: In 2023, there were 374,000 preterm births in the U.S., representing 10.4% of live births ([source](#)).

NEW TECHNOLOGY: Emerging technologies are focusing on preventing preterm births through advanced, proactive interventions. The example listed below are medical device innovations. However there is also evidence that vaginal microbiome research and care delivery via midwives and doula support can decrease preterm birth rates ([source](#)).

PregnanTech: Advanced technology to address the challenge of preterm birth. Their flagship product, LIONESS™, is an innovative silicone ring designed to be placed around the cervix to prevent premature dilation and, consequently, preterm birth.

Galena Innovations: Cervical cup designed to reinforce a woman's cervical tissue, helping prevent miscarriages and preterm births brought on by various medical issues

GHOST MARKET: We estimate the cost of a preterm birth intervention to be approximately \$1,500. As noted earlier, we assume an associated population of 374,000.

US Market: \$561M
Population: 374K
Cost: \$1,500
374K x \$1,500 = \$561M



Postpartum depression occurs in approx. 10-15% of pregnancies.



Prenatal and Postpartum Mental Health Support

PROBLEM: Mental health issues during and after pregnancy, such as depression and anxiety, are significantly underdiagnosed and under-treated, leading to long-term adverse outcomes for mothers and their families. The current standard of care involves limited access to specialized mental health services, often resulting in fragmented and inconsistent care. Traditional mental health care systems are not well integrated into maternal healthcare, leaving gaps in comprehensive support.

POPULATION: In the U.S., postpartum depression occurs in approximately 10-15% of pregnancies, equating to roughly 600,000 women annually who experience the condition ([source](#)).

NEW TECHNOLOGY: Some innovative solutions offer specialized platforms for maternal mental health, providing tailored support, counseling and early detection of postpartum depression (PPD).

Seven Starling: Virtual maternal mental health care, covered by insurance and designed for women in pregnancy, postpartum, perimenopause and menopause (\$25-\$150 per session)

Canopie: Virtual maternal mental health care for women in pregnancy and postpartum (\$60-\$75/month)

LunaJoy Health: Virtual maternal mental health care for postpartum women (\$125-\$240 per session)

Mavida: Specialized online psychiatric therapy and medication management for mothers in pregnancy and postpartum (\$50-\$195 per session)

Sage Pharma: Developing the first FDA-approved therapeutic for PPD

Dionysis: Developing the first genetic test for predicting risk of PPD in the third trimester of pregnancy

GHOST MARKET: Based on the solutions above, we assume an average cost of \$500 for postpartum solutions.

US Market: \$300M
Population: 600K
Cost: \$500
600K x \$500 = \$300M



In 2023, there were 374k preterm births in the U.S.

Preeclampsia and Gestational Diabetes

PROBLEM: Preeclampsia and gestational diabetes are serious complications that can lead to severe health risks, mortality and morbidity for both mother and child. These conditions increase risks for the mother, including eclampsia, stroke, organ damage, placental abruption and long-term cardiovascular issues. For the fetus, it can lead to intrauterine growth restriction, preterm birth, placental insufficiency, low birth weight and stillbirth. These conditions are especially prevalent in older mothers, and require early detection and effective management. As women delay childbearing, rates of preeclampsia and gestational diabetes increase ([source](#)). The number one cause of maternal death in industrialized nations is the hypertensive disorder of pregnancy (i.e., preeclampsia). Current care involves regular monitoring and medication, with early delivery often necessary. However, the variability in access to consistent care, particularly in low-resource areas, poses significant risks.

POPULATION: In the U.S. today, preeclampsia ([source](#)) and gestational diabetes ([source](#)), together, affect 10% of pregnancies, approximately 400,000 women annually.

NEW TECHNOLOGY: Many of the innovations we see today are at the forefront of early detection and preventive care.

Mirvie: RNA technology to predict unexpected pregnancy complications before they happen

Malama: Platform for helping pregnant patients manage gestational diabetes (\$500 per patient per month with Medicaid)

MOMM Diagnostics: Rapid preeclampsia test designed for integration with the current standard of care

BloomLife: Maternal remote patient monitoring platform with intelligent blood pressure cuffs and an at-home fetal stress test (\$29/month)

Babyscripts: Maternity care platform that helps pregnant and postpartum women monitor blood pressure and other health indicators with technology and care management services (\$300 per pregnancy)

GHOST MARKET: Based on the price of the solutions listed above, we assume an average cost of \$400.

- US Market: \$160M
- Population: 400K
- Cost: \$400
- 400K x \$400 = \$160M



10%

of pregnancies in the U.S. today are affected by either preeclampsia or gestational diabetes.

Postpartum Hemorrhage

PROBLEM: Postpartum hemorrhage (PPH) is one of the leading causes of maternal mortality and morbidity, especially in low-resource settings where access to emergency care and blood transfusions is limited. The standard of care primarily involves hospital-based interventions such as the JADA device (which was acquired for \$240 million [source]), compression and constant monitoring, which can be inconsistent and reactive rather than preventive. Additionally, PPH can occur up to six weeks post delivery. A mother hemorrhaging at home can have dire consequences. Postnatal education and follow-up care six weeks postpartum are not provided in many parts of the country. There is a lack of widespread, accessible technologies for early detection and management of PPH.

POPULATION: In the U.S., PPH affects approximately 1-5% of pregnancies, affecting roughly 120,000 women annually (source).

NEW TECHNOLOGY: Startups are developing innovative solutions like wearable devices for early detection and real-time monitoring of PPH as well as treatment options.

Armor Medical: Wearable device to predict postpartum hemorrhage before it happens
Alydia Health: The JADA System is intended to provide control and treatment of abnormal postpartum uterine bleeding or hemorrhage (\$1,000 [source])

Raydiant Oximetry: Developing Daisy, a surgical device intended to quantify blood loss, treat uterine atony, and prevent postpartum hemorrhage (PPH) after a C-section delivery

GHOST MARKET: Based on the average cost of the technologies listed above, we assume an intervention cost of \$500 per patient.

US Market: \$60M
 Population: 120K
 Cost: \$500
 120K x \$500 = \$60M



PPH is one of the leading causes of maternal mortality

PPH can occur up to six weeks post delivery

there is a lack of accessible technology for early detection



Access to Quality Maternal Healthcare

PROBLEM: Significant disparities exist in access to quality maternal healthcare, particularly in underserved and rural areas. Many women must travel several hours to access prenatal care as well as delivery services. These disparities contribute to poorer health outcomes for mothers and infants, especially among vulnerable populations. The current standard of care is marked by limited access to consistent, quality healthcare services, with significant disparities based on location, socioeconomic status, and availability of specialized maternal care providers. This results in inconsistent care, delayed interventions, and increased maternal and neonatal morbidity and mortality.

“In the rural west, many women travel several hours to access prenatal care as well as delivery services. In addition, many of these women are uninsured. One of the reasons for closure of many maternity wards is financial, as Medicaid reimburses poorly for obstetric care, and most self-pay patients do not end up paying their bills. Remote access to prenatal care services will be the most critical solution.” — Dr. Giovannina Anthony, OB/GYN in Jackson, Wyoming

POPULATION: In the U.S., lack of access to quality maternal health care affects 25% of pregnancies, approximately 1M women annually ([source](#)).

NEW TECHNOLOGY: Emerging technologies and platforms are designed to bridge the gap in access to quality maternal healthcare. These innovations leverage telemedicine, portable diagnostics and culturally sensitive care models to provide more consistent and equitable maternal health services.

Millie: West Coast-based brick and mortar clinic network of midwife-led birthing centers
Cayaba Care: 24/7 pregnancy and postpartum care from an expert care team (remote doula visits are reimbursed for an average of \$200)

Delfina: An integrated pregnancy platform delivering personalized care. Pregnant members receive continuous doula support, telehealth services and at-home monitoring to have healthier pregnancies

Pomelo Care: 24/7 doula-led pregnancy and newborn care over text, phone, or video (remote doula visits are reimbursed for an average of \$200)

GHOST MARKET: We assume an intervention cost of \$2,000 per patient based on the costs of services provided above and a population size of 1M women.

US Market: \$2B
Population: 1M
Cost: \$2,000
1M x \$2,000 = \$2B



Many women must travel several hours to access prenatal care as well as delivery services, contributing to poorer health outcomes for mothers and infants.

Maternal Healthcare for Marginalized Groups

PROBLEM: Marginalized groups, including women of color, sexual and gender minorities (SGM), and women with disabilities, face compounded challenges in accessing quality maternal care, leading to higher rates of complications, mortality and adverse outcomes. The quality of care for marginalized populations is often substandard and lacks cultural sensitivity, resulting in higher rates of maternal and neonatal morbidity and mortality. These groups frequently encounter biases, lack of culturally competent care, and barriers to accessing quality health services ([source](#)).

POPULATION: In the U.S., lack of quality healthcare for marginalized groups affects a staggering 48.5% of pregnancies, approximately 1.9M women annually ([source](#)).

NEW TECHNOLOGY: Startups are creating platforms that provide culturally competent care, and offer coordinated services specifically designed for marginalized populations.



Mae: *Pregnancy and postpartum support, tailored to the needs of Black women (remote doula visits are reimbursed for an average of \$200)*

Health in Her Hue: *Trusted source for culturally informed healthcare*

Navigate Maternity: *Support platform for patients and providers throughout the prenatal and postpartum experience for an equitable and culturally competent journey*

GHOST MARKET SIZE: We estimate an intervention cost of \$1,000 per patient based on standard doula reimbursement rates and a population size of 1.9 women annually.

- US Market: \$1.9B
- Population: 1.9M
- Cost: \$1,000
- 1.9M x \$1,000 = \$1.9B

48%

of pregnancies are affected by lack of culturally competent healthcare.



Postpartum Care

PROBLEM: Inadequate postpartum care often leads to both physical and mental health complications for mothers, resulting in long-term health issues. Many women receive minimal follow-up care after childbirth — only one or two follow-up visits, which is insufficient for addressing the wide range of postpartum health needs ([source](#)). This lack of attention can result in untreated conditions such as pelvic floor dysfunction, postpartum depression, and other physical and mental health challenges ([source](#)). Additionally, stigma associated with many of these conditions often prevents patients from seeking care they need.



Many women receive minimal follow-up care after childbirth — only one or two visits.

POPULATION: Approximately 4M women give birth annually in the U.S., with a significant proportion experiencing postpartum complications: 35% of new mothers experience urinary incontinence ([source](#)), 20% of first-time moms experience severe pelvic floor muscle injury ([source](#)), and 14.3% may develop postpartum depression ([source](#)). We acknowledge that some of these categories may overlap. With this in mind, we assume a population of 2.7M women who experience unique postpartum challenges.

4M

women give birth annually in the U.S., with a significant proportion experiencing complications after birth such as incontinence, pelvic floor injury and postpartum depression.



Stigma associated with some of these conditions often prevents patients from seeking care.

NEW TECHNOLOGY: Emerging players are developing comprehensive postpartum care solutions. These include telehealth services for pelvic floor recovery, nutrition support, mental health counseling and culturally sensitive care models.



Origin: Brick and mortar clinic network providing pelvic floor physical therapy (\$75-\$150 per session [\[source\]](#))

Mahmee: Wraparound pregnancy and postpartum care from nurses, doulas, lactation consultants, mental health coaches, nutritionists and care coordinators (\$200/month [\[source\]](#))

GHOST MARKET SIZE: Based on the services listed above, we assume an average intervention cost of \$1,000 per woman annually.

- US Market: \$2.7B
- Population: 2.7M
- Cost: \$1,000
- 2.7M x \$1,000 = \$2.7B

 = an Amboy St Ventures portfolio company

SECTION EIGHT | MATERNAL HEALTH AND PREGNANCY

SECTION SUMMARY

The maternal health market offers a substantial and attractive opportunity for investment and growth, in our view. This growth is likely to be driven by innovations in diagnostic devices, digital health platforms, and personalized care solutions tailored to women’s unique health needs. Not only does investing in maternal health innovations address critical health needs, but it also offers substantial economic returns. Furthermore, reducing maternal deaths and improving maternal health outcomes can significantly boost countries’ gross domestic product and overall productivity, making it a high-impact area for venture capital.



FERTILITY

For many people, becoming pregnant or intentionally conceiving takes planning, resources and medical support. **Innovation in the approach to infertility** has been a constant for decades, with research funded mainly by the private sector, as government grants are uncommon for reproduction research. Recent work, from fertility coaching and testing to medication and in vitro fertilization (IVF), has attracted venture capital funding, and private equity has **invested billions of dollars** in consolidating IVF clinics.

The largest unmet need in infertility is access to care. In the U.S., **treatments and tests** come with high out-of-pocket costs, even when patients have insurance. Additionally, the availability of advanced treatment, particularly IVF, is **concentrated in large, urban centers**.

According to the World Health Organization, **one in six people globally will experience infertility** ([source](#)). According to the National Institute of Health (NIH), studies suggest that after one year of having unprotected sex, 12% to 15% of couples are unable to conceive. After two years, 10% of couples still have not had a live-born baby ([source](#)).

The following report illuminates seven gaps in fertility care that could pose lucrative investment opportunities, including limited access to reproductive endocrinology and infertility (REI) providers, high cost of IVF, lack of at-home fertility solutions, variable success rates of IVF, inadequate infertility diagnostics, and gestational surrogacy and third-party reproduction markets.

Limited REI Providers and Geographical Limitations

PROBLEM: Reproductive endocrinology and infertility (REI) is the specialty practiced by medical doctors who work in the fertility space. To become an REI specialist, doctors must complete four years of medical school and four years in an OB/GYN residency, followed by another three-year fellowship in reproductive endocrinology and infertility. In the U.S., there are fewer than 500 fertility clinics. Furthermore, there are fewer than 1,250 REI providers to cover the nearly 400,000 IVF cycles that happen each year ([source](#)). In turn, there are fertility care deserts where patients need to travel hours to undergo an IVF procedure. During an IVF process, patients must go into the fertility clinic regularly leading up to the procedure.

"The scarcity of REI specialists is one of the biggest bottlenecks in fertility care. Leveraging technology to streamline processes and extend the reach of these specialists is critical if we want to meet the growing demand and serve more patients effectively." — Eduardo Hariton, REI and managing director of U.S. Fertility's Innovation Fund

POPULATION: 10% of couples struggle to have a live-born baby after two years of unprotected sex. In 2023, there were 3.6M babies born in the U.S. This means there are about 360,000 women a year who may seek fertility aid.

NEW TECHNOLOGY: The following companies are delegating low-level clinical tasks (work-ups) to OB/GYNs and leveraging nurse practitioners instead of REIs in hopes of increasing the access to IVF procedures and distributing the clinical burden across providers.

Branch Care: Eliminates barriers to fertility care by equipping local clinicians to deliver care under the supervision of top fertility specialists



Pozitiv: Fertility clinic in San Antonio that offers a streamlined approach to fertility treatment, doing only tests and procedures necessary for that patient and leveraging nurse practitioners

The following solutions are focused on automating the IVF process to reduce clinical burden, allowing REIs to see more patients:

AutoIVF: Automation of IVF process to increase reliability and reduce cost

ALife: AI-powered software that helps clinics optimize their operations to improve outcomes, increase efficiency and enhance the patient experience

Conceivable Life Sciences: End-to-end automation for the next generation of IVF, designing labs with advanced single cell robotics

Levy Health: Software that allows for combining and analyzing patient data and lab results, to provide clear insights, diagnoses and treatment recommendations

GHOST MARKET: Because the two categories of innovations listed above are quite different from both a business model and pricing perspective, we will estimate price based on the first group only. A low-cost IVF solution could cost ~\$8,000 for one cycle.

US Market: \$2.9B

Population: 360K

Cost: \$8,000

360K x \$8,000 = \$2.9B



There are fewer than 1,250 REI providers to cover the nearly 400,000 IVF cycles that happen each year.



10% of couples struggle to have a live-born baby within 2 yrs.



High Cost of IVF

PROBLEM: The average cost of a single IVF cycle falls between \$14,000 and \$20,000 ([source](#)). However, this is merely an approximation. The total expenses may differ depending on how many cycles are required and whether additional costs are factored in, including medications, genetic testing, cryopreservation and storage fees. The cost of IVF medication alone contributes significantly to the overall cost of IVF. IVF medications include clomiphene (CLOMID), which helps to induce ovulation, and Ganirelix Acetate, which controls LH production. Additionally, only 20 U.S. states require private insurers to cover infertility treatment, and even with coverage, copays and non-covered costs are cost-prohibitive for many.

POPULATION: 10% of couples struggle to have a live-born baby after two years of unprotected sex. In 2023, there were 3.6M babies born in the U.S. This means there are about 360,000 women a year who may seek fertility aid.

NEW TECHNOLOGY: Players including Maven and Progeny are creating fertility benefits platforms to cover the cost of IVF and make the procedure more accessible. Finally, companies are developing fertility financing solutions and warranty products.

Maven: Family benefits provider (fertility included) selling to employers
Progeny: Fertility benefits manager providing comprehensive coverage for preconception, fertility, adoption and surrogacy, pregnancy and postpartum

Carrot: Fertility benefits and care provider selling B2B

Sunfish: Fertility financing and warranty product

Gaia: Fertility financing and warranty product

Future Family: Fertility financing and one-on-one nursing support

GHOST MARKET SIZE:

Employer-sponsored fertility platforms generate ~\$1,000-\$3,000 per cycle. Fertility financing solutions generate ~\$2,000 per cycle (includes interest, additional support services, etc.). For this market size, we will use \$2,000 per cycle.

US Market: \$720M

Population: 360K

Cost: \$2,000

360,000 x \$2,000 = \$720M

At-home Fertility Treatment

PROBLEM: The fertility care system encourages women who are experiencing infertility to jump immediately to IVF, which is prohibitively expensive, instead of offering cheaper, first-line alternatives. Additionally, many women do not live within a reasonable distance of an IVF clinic.

POPULATION: 10% of couples struggle to have a live-born baby after two years of unprotected sex. In 2023, there were 3.6M babies born in the U.S. This means there are about 360,000 women a year who may seek fertility aid.

NEW TECHNOLOGY: With such high costs for fertility treatments, some solutions are offering at-home fertility solutions for first line treatments.

Bea Fertility (\$778/3 cycles): Primary fertility care including at-home intracervical insemination treatment (ICI), coaching and peer support
OVUM Health: Primary fertility telehealth care to treat chronic conditions associated with infertility

GHOST MARKET: Based on technology like Bea Fertility, an at-home fertility solution, we estimate an average price of \$700 ([source](#)) for a population of 360,000.

US Market: \$252M

Population: 360K

Cost: \$700

360K x \$700 = \$252M



Variable Success Rate of IVF

PROBLEM: Among assisted reproductive technologies (ARTs), IVF is the most common. Currently, IVF is time-consuming, disruptive to patients' lives and has unpredictable outcomes. According to experts in the space, current IVF procedures are archaic and "artisanal," are not standardized or optimized for the patient's specific needs and do not follow a clear, repeatable process. The IVF success rate is dependent on many factors, including age, lifestyle and use of own or donated eggs. For women using their own eggs, the IVF success rate is 38.3% for women ages 35-37. The success rate drops to 25.1% for women ages 38-40 and to 12.7% for women age 41 and over ([source](#)).

"IVF's variability and 'artisanal' approach highlight the urgent need for standardization and optimization. We need therapies and technologies that follow an evidence-based approach to help bring down the cost per baby we help patients and families achieve, and increase the number of those we are able to serve." — Eduardo Hariton, REI and managing director of U.S. Fertility's Innovation Fund

POPULATION: 10% of couples struggle to have a live-born baby after two years of unprotected sex. In 2023, there were 3.6M babies born in the U.S. This means there are about 360,000 women a year who may seek fertility aid.

NEW TECHNOLOGY: Therapeutics (non-IVF medication) are an avenue to increase

overall IVF success rates. The solutions below focus on optimizing certain aspects of IVF and other fertility treatments to lead to a successful pregnancy and baby.

Granata Bio: Biopharma platform company developing and commercializing medications used for IVF

Oxolife: Therapeutic aiding in increasing embryo implantation and ovulation for women with infertility and PCOS

Gameto: Therapeutic which allows for eggs to mature faster outside the body, resulting in less injections for patients and better quality of life during fertility treatments

Oviva: Therapeutics to increase ovarian function by reducing the depletion of ovarian reserves

Vitra.bio: Therapeutics to support assisted reproductive technologies (ARTs) by reducing cost, simplifying egg retrieval and supporting healthier pregnancies

GHOST MARKET: The cost of a therapeutic, which could increase the success of IVF, can range from between \$1,000-\$3,000 and we assume a population of 360,000, as we have noted.

US Market: \$720M

Population: 360K

Cost: \$2,000

360K x \$2,000 = \$720M



According to experts in the space, current IVF procedures are archaic and "artisanal," are not standardized or optimized for the patient's specific needs and do not follow a clear, repeatable process.

Diagnostics for Cause of Infertility

PROBLEM: To diagnose infertility, providers perform pelvic exams, blood tests, ultrasounds and other assays. The most common reason for unexplained infertility in women is endometriosis, a condition some women do not know they have until they have unsuccessfully tried to get pregnant. Current diagnostic tests can be invasive and time- and resource-heavy, and may not lead to a conclusive answer. 85% of infertility couples have a diagnostic cause for infertility. However, 15% of infertility is unidentifiable ([source](#)).

POPULATION: About 360,000 birthing people struggle to conceive and may opt for fertility testing. We assume both partners may opt for fertility testing. Therefore, we assume 720,000 people as the addressable population.

NEW TECHNOLOGY: Often, fertility treatment is focused on the female patient. However, over 50% of the time, there is a male infertility issue ([source](#)). There are solutions that offer at-home sperm testing for men, such as:

Legacy: Semen analysis and testing and storage; one sperm testing kit is \$295

Fellow: Mail-in semen analysis for clinics looking for improved compliance and a patient-friendly solution to fertility testing

Hera: At-home sperm test kit for men (\$150/test)

Hormone testing can also be done at home for women, with solutions such as:

Oova: Fertility hormone testing kit for women (\$159/kit)

Proov: Hormone testing and tracking for fertility, perimenopause and menopause

GHOST MARKET: A product that would diagnose infertility in all people having issues in this area could have large-scale impact. An estimated price for a diagnostic kit in this scenario is \$222, a midpoint from all the technologies above.

US Market: \$160M

Population: 720K

Cost: \$222

720K x \$222 = \$160M



360,000

birthing people struggle to conceive and may opt for fertility testing.



Gestational Surrogacy and Third-Party Reproduction Markets

PROBLEM: As fertility rates decline, and women wait longer to have children, artificial reproductive technology will likely increase in demand. Although IVF is one of the most common ART procedures, there are alternative methods, including gestational surrogacy and third-party reproduction, that are gaining in popularity. Currently, 13 IVF clinics perform 44% of all gestational carrier (GC) transfers and only three have their own surrogacy agency. This presents an untapped opportunity. Additionally, artificial wombs for third-party reproduction are now being developed to help people with no or a non-functional uterus become biological parents.

POPULATION:

Gestational surrogacy: Around 4,000 babies are born via gestational surrogacy each year in the U.S. ([source](#)).

Artificial Womb: Uterine factor infertility (UFI), which [affects 3–5%](#) of the female population, as well as male-male couples, are just two reasons why an artificial womb may be pursued. The artificial womb unfortunately is early in development and there has not been enough research on the addressable market.

NEW TECHNOLOGY: The following companies are innovating in the alternative reproduction space by building a platform for gestational surrogacy and artificial wombs:

Nodal Surrogacy: Surrogacy matching and case management

KangarooBio: Artificial womb

Becoming Bio: Artificial womb

GHOST MARKET SIZE: Gestational surrogacy services, such as those provided by Nodal, could cost ~ \$20,000.

US Market: \$80M

Population: 4K

Cost: \$20,000

4K x \$20,000 = \$80M

An artificial womb is too early in development to calculate a Ghost Market size.



3-5% of the female population experience uterine factor infertility

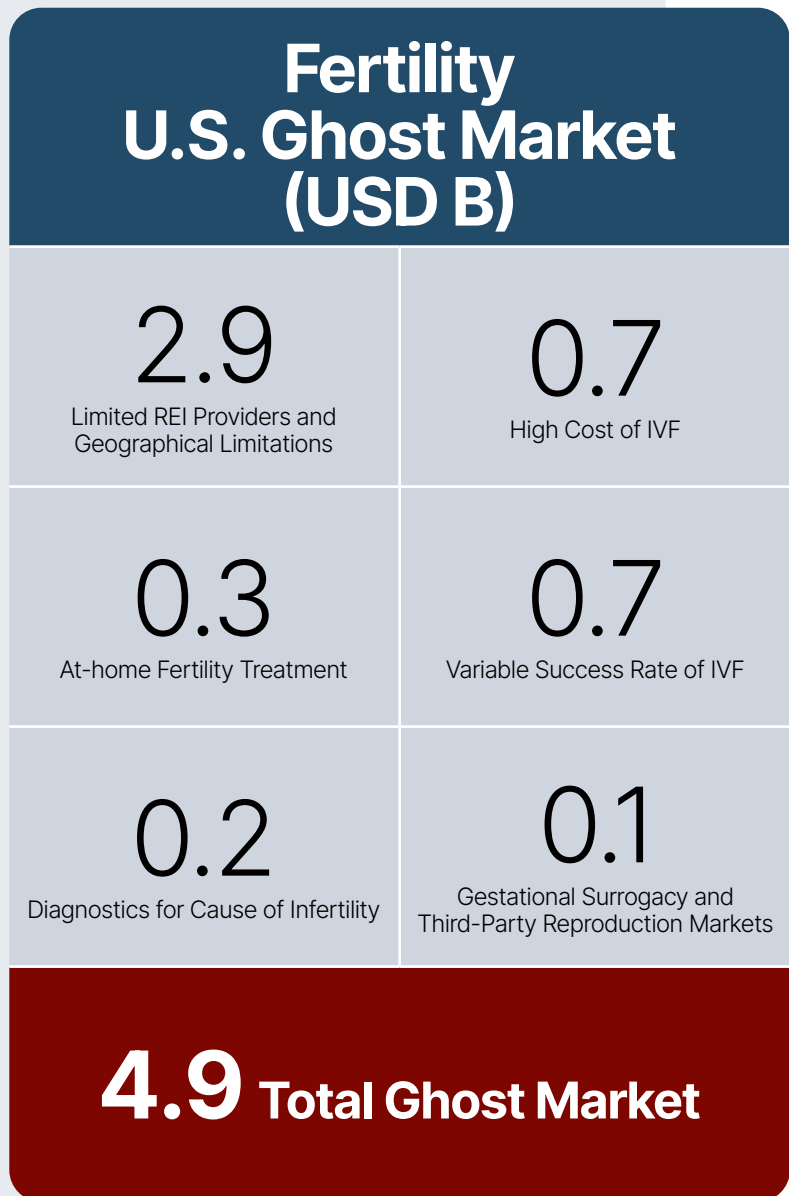
4k babies are born via gestational surrogacy

Artificial wombs are early in development

SECTION NINE | FERTILITY

SECTION SUMMARY

The lack of support for and availability of innovative, cost-effective solutions, coupled with the largely unexplored needs surrounding diagnostics and therapeutics for infertility, demonstrate how much more investment is needed in this area.





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