

The Impact of Infertility Insurance Coverage on Women

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Introduction

Infertility is defined as the inability to achieve a pregnancy after 12 months (Office on Women's Health, n.d.). It is a common problem in the United States among women from ages 15 to 49 with no prior births, affecting about 19% of them (Center for Disease Control and Prevention [CDC], 2022). Conditions affecting the uterus, ovaries, or fallopian tubes can cause a woman to be infertile. These conditions include but are not limited to polycystic ovarian syndrome, endometriosis, autoimmune disorders, uterine fibroids, and infections (Eunice Kennedy Shriver National Institute of Child Health and Human Development, 2017). There are treatment options available, and they include medication, surgery, intrauterine insemination (IUI), and in vitro fertilization (IVF), which is a form of assistive reproductive technology (ART).

ART is typically what women with the most issues turn to, however, these technologies happen to be the most expensive solution. IUI is when healthy sperm are placed directly into the uterus, and IVF is when eggs are retrieved and fertilized and then placed back into the woman's body. As one could imagine, treatment is not cheap. The cost for infertility treatment ranges from hundreds of dollars for basic treatment to thousands of dollars for just one round of IVF; most women need multiple rounds of IVF to achieve a pregnancy. The cost of injectable medication is around \$1,600, IVF costs around \$11,500, and IVF with donor eggs costs around \$28,000 (Advanced Fertility Center of Chicago, n.d.). It is important to keep in mind that these costs are for one cycle only. Some states have insurance policies that cover treatment costs, and some do not. When deciding whether or not to go through with treatment, the cost is often the main factor. For example, New Jersey is known to be one of the best states for infertility treatment based on insurance coverage, number of fertility specialists, and prevalence of support groups (TIME, 2014). On the other hand, Wyoming is known to be one of the worst states (TIME, 2014). With

this information, I want to find out how having infertility insurance coverage in New Jersey compares to no coverage in Wyoming. Is it possible that women would go about their options differently depending on which state she is in?

Background/Relevant Literature

Artificial insemination was the first infertility treatment discovered, and it was first successfully recorded in 1884 (Southern California Reproductive Center [SCRC], 2021). In 1978, the first baby was born from IVF (SCRC, 2021). Treatment options have continued to expand and improve since then. Although these treatments are available in the United States, certain religions do not allow some treatments because it goes against their beliefs. For example, Orthodox Jews refuse the involvement of a third party, and Roman Catholics do not accept assisted reproduction at all (Sallam & Sallam, 2016). In addition, there is a political side to infertility treatment. In the states that have coverage, some of them define infertility differently. For example, in Colorado, infertility is defined as the inability to get pregnant in 12 months, but in Maryland, it is defined as the inability to get pregnant in 5 years (Kawwass et al., 2021). It is up to each state as to how they choose to define it. Lastly, of course, there is also an economic side to infertility treatment options. Not everyone who needs treatment is able to afford it, with or without coverage. This is where the importance of insurance comes into play. Although insurance may help some people, 31.6 million Americans are uninsured (Cha & Cohen, 2022).

After a woman is diagnosed as infertile, typically by an obstetrician gynecologist (OB-GYN), she is usually referred to an ART center. First, this is an issue because 49% of counties in the United States do not have an OB-GYN. Second, this is an issue because 25 million women live in a location where there is no ART facility (Brodeur et al., 2022). In addition to access, a large obstacle is cost. One round of IVF treatment costs a quarter of the median household income

(Brodeur et al., 2022). Most women that undergo IVF treatment need more than one round, so cost really adds up. Insurance does help in certain situations because some states mandate fertility coverage within insurance policies. The Family Building Act was signed into law in New Jersey in 2001 (Valley Health System, n.d.). New Jersey defines infertility for women under the age of 35 as the inability to conceive after 12 months of trying and the inability to conceive after 6 months of trying for women over the age of 35. If a couple meets the criteria, then The New Jersey Family Building Act will cover the following treatments at facilities that abide by the American College of Obstetricians and Gynecologist and America Society for Reproductive Medicine guidelines: IVF, IVF with donor eggs, intracytoplasmic sperm injection, artificial insemination, assisted hatching, medications, surgery, gamete intrafallopian transfer, zygote intrafallopian transfer, ovulation induction, and fertility testing and diagnostics (Reproductive Science Center of New Jersey, n.d.). Wyoming does not mandate fertility coverage within insurance policies.

Methods

To answer the question regarding how women in New Jersey and Wyoming are impacted differently by infertility insurance coverage policies, I had to look at different kinds of data. I started out looking at quantitative data about birth rate, multiple birth rate (with treatment and without treatment), premature birth rate, low birthweight rate, ART procedures performed, proportion of ART births among all births, and amount of people covered by insurance in New Jersey and Wyoming. I also looked at qualitative data that explored how women are affected emotionally, socially, physically, and financially. In addition, I looked at legislation to see what the actual process is, how these types of decisions are made, and if there are any efforts to pass legislation about this topic in other states or within the federal government.

Results and Discussion

Birth rate can be described as the number of births per 1,000 women 15 to 44 years of age. In New Jersey, the birth rate is 58.6%, while in Wyoming the birth rate is 56.4% (National Center for Health Statistics [NCHS], 2023). A lot of different factors can decrease or increase this rate. For example, increased education around contraception can decrease the overall rate, but the intention to have children can increase the overall rate; there is not necessarily a “good” birth rate.

A preterm birth is a birth that occurs before the 37th week of pregnancy. The premature birth rate is 9.3% in New Jersey, and it is 10.8% in Wyoming (NCHS, 2023). Complications related to premature births can lead to death, and many factors can affect this rate. Factors such as being pregnant in the past, carrying multiple babies, or not properly caring for one’s health can cause a preterm birth. A weight of less than 5 pounds and 8 ounces is considered low weight. The low birthweight rate is 7.7% in New Jersey and 9.4% in Wyoming (NCHS, 2023). Usually, babies have a low birthweight because they are born premature, there are issues with the mother’s placenta, or there are other health conditions.

A multiple birth is when a woman delivers more than one baby at once, such as twins or triplets. The multiple birth rate in New Jersey is 3.3%, and in Wyoming it is 3.1% (NCHS, 2023). Since fertility treatments tend to cause multiple births, this rate can be further broken down. The multiple birth rate with ART treatment in New Jersey is between 8.6% and 14.9% and is 19.6% to 26.5% in Wyoming; the national average is 16.8% (CDC, 2021). When looking at the overall multiple birth rate, it appears the New Jersey’s rate is higher, and it is better to have a lower multiple birth rate; it is healthier for both the mother and the baby when she only carries one child at a time and the risks are lower. Multiple births can cause health problems and are more expensive than single births; ART therapies sometimes cause higher multiple birth rates because the goal is

to increase the likelihood of getting pregnant. When looking at multiple birth rates with ART treatment, it is lower in New Jersey than in Wyoming. This could be due to better facilities or more treatment options because of different insurance policies in place. If a woman has coverage, she may choose to have fewer eggs implanted at once, which would decrease the multiple birth rate. On the other hand, if a woman only wants to pay for treatment once since she does not have coverage, she might choose to have a larger number of eggs implanted.

Adding onto this further, the number of ART procedures performed in New Jersey compared to Wyoming is more than double; in New Jersey there are between 4,105 and 7,628 procedures performed, and in Wyoming, there are between 1,732 and 2,084 procedures performed (CDC, 2021). This goes to show that obtaining treatment is more accessible in New Jersey than in Wyoming. The proportion of ART births among all births is also double when comparing New Jersey and Wyoming; it is 4.4% in New Jersey and between 1.2% and 1.5% in Wyoming (CDC, 2021). This does not necessarily mean the treatment is more successful in New Jersey, but it does show that more people are able to receive successful treatment.

Lastly, 91.3% of people in New Jersey have health insurance, and 87.3% of people in Wyoming have health insurance (Kaiser Family Foundation, 2020; New Jersey State Health Assessment Data, n.d.). There is not much of a difference here, but these numbers do not take into account what is exactly covered by health insurance. Although 87.3% of people in Wyoming have health insurance, most of the policies do not cover fertility treatment. In contrast, 91.3% of people in New Jersey are covered by health insurance, and most of the policies cover fertility treatment. From these quantitative results, it can be interpreted that more women in New Jersey are able to receive successful infertility treatment.

Beyond the data regarding pregnancies, women are also affected in many other ways, including emotionally, socially, physically, and financially. Overall, no matter where you live in the United States, women seem to be affected in the same ways emotionally, socially, and physically. The only area women seem to be affected differently between New Jersey and Wyoming is financially.

There are many different emotions that come along with infertility and going through treatment; having insurance coverage does not influence those emotions. To begin with, the emotions women experience is a constant cycle. It starts out as hopefulness that they will be able to conceive, then it transitions to anxiety while waiting the two weeks before a pregnancy test can be taken, and then it typically turns into disappointment and heartbreak when the test comes back negative; this overall continuous cycle leads to grief (Swanson & Braverman, 2021). Fear can also be a common feeling when having to tell one's partner or other affected members of the situation (Hasanpoor-Azghdy, 2014). This entire process makes people feel like their life is on hold, and they do not have any control over what happens. The feelings a woman experiences due to infertility are similar to the feelings someone with cancer experiences (Swanson & Braverman, 2021). In addition, some women have worse depressive states because of the possibility of not being able to have genetically related children (Swanson & Braverman, 2021). Adoption is an option for couples unable to conceive, but it does not solve the issues of infertility itself. It makes sense that women in New Jersey and women in Wyoming do not feel differently about their infertility because it is like any kind of disease. No matter where you are, those feelings will be attached.

Women are affected in the same ways socially, whether they are in New Jersey or Wyoming. To begin, motherhood has been an expectation for women in the United States; this

involves both bearing children and raising them (Mcquillan et al., 2008). Being a parent is something that is valued in society, and it is typically viewed as a stage in one's life. Women that are infertile often view it as being unable to uphold gender roles, which can cause more negative feelings (Swanson & Braverman, 2021). In addition, women have a hard time processing a lot of these feelings because it is not a common experience, so sometimes it is hard for others to recognize the pain; that's even if the women choose to talk about it (Swanson & Braverman, 2021). It can be easy for people who have not had to experience this say "just take medicine", or something along those lines. It can also be more difficult to deal with because people tend to have friends that are around the same age, so a lot of their friends could have kids or could be pregnant, which may cause a more jealous relationship. On top social issues outside of the couple, infertility can also cause issues within the affected couple. If a couple had issues before being unable to conceive, they can be brought up again and a lot of the time they might be even worse; sometimes it can bring couples closer together (Swanson & Braverman, 2021). These same types of scenarios can be seen in couples that lose a child at some point in their lives. Just like the emotional effects of infertility, the social effects are consistent throughout the United States.

When it comes to physical effects, they range broadly. Just like emotional and physical effects, physical effects are consistent across the board as well between New Jersey and Wyoming. The straightforward physical effects are from receiving treatment. Like with most medications, there are side effects that come along with treatment. Side effects from different fertility drugs and IVF include bloating, cramping, headache, hot flashes, constipation, and breast tenderness (Mayo Clinic, n.d.). The side effects are partly because the increased levels of different hormones in the body. Besides side effects from receiving treatment, there are other physical effects of infertility. In a relationship, sex is typically viewed as an exciting and intimate experience. However, when

it has to be perfectly timed around a woman's ovulatory cycle, it shifts from being an exciting experience to more like a stressful job (Swanson & Braverman, 2021). This can in turn lead to other issues within the relationship. While these effects are difficult to deal with, I think the weight of the emotional and social effects numb the pain of the physical effects.

The financial effect of infertility is where things start to differ between New Jersey and Wyoming. The cost of living and the average median household income are both higher in New Jersey, but infertility treatment costs remain roughly the same across the board (WiseVoter, 2023). However, that does not matter when it comes to what insurance covers. Since New Jersey mandates infertility insurance coverage, so at least some part of the cost is guaranteed to be covered. In Wyoming, it is likely that the payment will have to be totally out of pocket. If a woman knows she will have to pay for everything, it may influence her decisions about treatment. It can influence what treatment is received, how many cycles of treatment she receives, what type of facility she goes to, and then it can also affect other financial decisions. For example, if a couple's main goal is to have a child, they might sacrifice other aspects of their life to cover the costs of treatment. Money on its own can be the root of problems in someone's life. While all the different emotional, social, physical, and financial effects cause problems of their own, they also can influence the severity of each other.

As mentioned before, not all states have laws that mandate infertility insurance coverage. The idea would have to be brought up through the state government and approved by the House of Delegates, the Senate, and the governor. Many factors can influence whether a bill gets passed or not, and one important factor regarding infertility insurance coverage is how infertility is described. A study found that using the word "condition" over "disease" or "disability" to describe infertility is best, but when it comes to getting support with public policy, it gets more support

when described using “disease” or “disability” (Mancuso et al., 2021). Parallels between describing mental illness and infertility can be seen here. When it comes to politics, there does not seem to be a clear divide like is typically seen with other types of policies. There are Democratic states that have mandates, and there are also Republican states that have mandates in place (Eagleton Institute of Politics, 2023). New Jersey is a blue state, and Wyoming is a red state, so politics do not seem to affect women in these states differently. In regards to the future, there has been discussion among the White House’s Office of Personnel Management to push providers of federal insurance to expand coverage for infertility and also be more clear about what exactly they are offering (Weisner, 2023). I think if this happens, it will open a new door of opportunities across the federal government and states without mandates. From this push, it can be noted that this type of coverage is necessary and reasonable.

Conclusion

When answering the question of how women in New Jersey and Wyoming are affected differently depending on insurance coverage, there are clear differences in some areas and similarities in others. New Jersey has insurance coverage, and their statistics regarding multiple birth rates and the proportion of births due to ART procedures are better. Those statistics can be attributed to the mandate in place because with better insurance coverage, a couple may choose not to transfer as many embryos at once. Doing so would decrease the overall multiple birth rate. Also, the proportion of births due to ART procedures are more than double the number in Wyoming, so it is more accessible to women in New Jersey. When looking at the overall emotional, social, and physical effects, they are the same across the board for all women, no matter the location. Unsurprisingly, the financial effects between women in New Jersey and in Wyoming is different. Women with insurance will have to pay less in New Jersey. Since all these effects can

exacerbate each other, it is possible it could relieve some stress of the other factors. Based off the work being done among the White House's Office of Personnel Management, it leads me to believe there will be pushes in other states to mandate coverage, as it could bring light to this issue. Women's health has become increasingly more popular, and more research is being done within the field. It has come a long way, as most of the research used to revolve solely around men. In addition, reproductive health did not hold the same level of importance as other categories. Providing insurance to allow for more accessible infertility procedures is a step in the right direction in the field of women's health.

References

- Advanced Fertility Center of Chicago. (n.d.). *Cost of Fertility Treatment—Insemination, IUI and IVF*. Retrieved February 26, 2023, from <https://advancedfertility.com/fertility-treatment/affording-care/fertility-treatment-costs/>
- Brodeur, T. Y., Grow, D., & Esfandiari, N. (2022). Access to Fertility Care in Geographically Underserved Populations, a Second Look. *Reproductive Sciences*, 29(7), 1983–1987. <https://doi.org/10.1007/s43032-022-00991-2>
- Center for Disease Control and Prevention (CDC). (2021, December 23). *State-Specific Assisted Reproductive Technology Surveillance | CDC*. <https://www.cdc.gov/art/state-specific-surveillance/index.html>
- CDC. (2022, March 3). *Infertility | Reproductive Health | CDC*. <https://www.cdc.gov/reproductivehealth/infertility/index.htm>
- Cha, A., & Cohen, R. (2022). *National Health Statistics Reports, Number 169, February 11, 2022. 169*.
- Eagleton Institute of Politics. (2023). Fast Facts About America’s Governors. *Eagleton Center on the American Governor*. <https://governors.rutgers.edu/fast-facts-about-americas-governors/>
- Eunice Kennedy Shriver National Institute of Child Health and Human Development. (2017, January 31). *What are some possible causes of female infertility?* <https://www.nichd.nih.gov/>
<https://www.nichd.nih.gov/health/topics/infertility/conditioninfo/causes/causes-female>

Hasanpoor-Azghdy, S. B. (2014). *The emotional-psychological consequences of infertility among infertile women seeking treatment: Results of a qualitative study—PMC*.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4009564/>

Kaiser Family Foundation. (2020, October 15). Election 2020: State Health Care Snapshots.

KFF. <https://www.kff.org/statedata/election-state-fact-sheets/>

Kawwass, J. F., Penzias, A. S., & Adashi, E. Y. (2021). Fertility—a human right worthy of mandated insurance coverage: The evolution, limitations, and future of access to care. *Fertility and Sterility*, *115*(1), 29–42. <https://doi.org/10.1016/j.fertnstert.2020.09.155>

Mancuso, A. C., Summers, K. M., Chung, R., Ryan, G. L., & Scherer, A. M. (2021). Condition, disease, disability: How the label used to describe infertility may affect public support for fertility treatment coverage. *Journal of Assisted Reproduction and Genetics*, *38*(8), 2109–2119.

<https://doi.org/10.1007/s10815-021-02231-z>

Mayo Clinic. (n.d.). *In vitro fertilization (IVF)—Mayo Clinic*. Retrieved March 28, 2023, from

<https://www.mayoclinic.org/tests-procedures/in-vitro-fertilization/about/pac-20384716>

Mcquillan, J., Greil, A. L., Shreffler, K. M., & Tichenor, V. (2008). The Importance of Motherhood Among Women in the Contemporary United States. *Gender & Society*, *22*(4), 477–496. <https://doi.org/10.1177/0891243208319359>

National Center for Health Statistics. (2023, January 11). *Wyoming*.

<https://www.cdc.gov/nchs/pressroom/states/wyoming/wy.htm>

New Jersey IVF Coverage Mandate | NJ Fertility Clinic. (n.d.). Reproductive Science Center of New Jersey. Retrieved February 16, 2023, from <https://fertilitynj.com/patients/new-jersey-ivf-coverage-mandate/>

New Jersey State Health Assessment Data. (n.d.). *NJSHAD - Health Indicator Report—Health Insurance Coverage.* Retrieved March 27, 2023, from <https://www-doh.state.nj.us/doh-shad/indicator/view/HealthInsCov.Under65.html>

Office on Women’s Health. (n.d.). *Infertility | Office on Women’s Health.* Retrieved February 8, 2023, from <https://www.womenshealth.gov/a-z-topics/infertility>

Sallam, H. N., & Sallam, N. H. (2016). Religious aspects of assisted reproduction. *Facts, Views & Vision in ObGyn*, 8(1), 33. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5096425/>

Southern California Reproductive Center. (2021). *The Evolution of Fertility Treatments and Development of IVF.* <https://blog.srcivf.com/ivf-the-history-and-evolution-of-fertility-treatments>

Swanson, A., & Braverman, A. M. (2021). Psychological Components of Infertility. *Family Court Review*, 59(1), 67–82. <https://doi.org/10.1111/fcre.12552>

TIME. (2014, April 21). *The Best and Worst States for Infertility.* Time. <https://time.com/70143/report-card-fertility/>

Twin deliveries: Wisconsin, 2017-2020 Average. (n.d.). March of Dimes | PeriStats. Retrieved February 26, 2023, from <https://www.marchofdimes.org/peristats/data?reg=99&top=7&stop=81&lev=1&slev=4&obj=18&sreg=55>

Valley Health System. (n.d.). *NJ Family Building Act | Fertility Center, New Jersey | Valley Health System*. Retrieved February 26, 2023, from <https://www.valleyhealth.com/services/fertility-center/insurance-finance-options/new-jersey-family-building-act>

Weisner, M. (2023, March 10). *White House to require more fertility treatment options for workforce*. Federal Times. <https://www.federaltimes.com/fedlife/benefits/2023/03/10/white-house-to-require-more-fertility-treatment-options-for-workforce/>

WiseVoter. (2023). *Cost of Living by State 2023*. Wisevoter. <https://wisevoter.com/state-rankings/cost-of-living-by-state/>