



NovaRest
ACTUARIAL CONSULTING

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Analysis of Draft Bill No. 147 Relating to Public Employee Fertility Health Benefits

Prepared for the North Dakota Legislative Council
Pursuant to North Dakota Century Code 54-03-28

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I. Evaluation of Proposed Mandated Health Insurance Services

The North Dakota Legislative Council (NDLC) was asked to perform a cost benefit analysis of Draft Bill No. 147¹ (Draft Bill 147) for the standing Legislative Assembly pursuant to the North Dakota Century Code (NDCC) 54-03-28. Draft Bill 147 creates and enacts section 54-52.1-04.19, amends and reenacts 26.1-36.6-03 of the NDCC, provides for a report; provides for an application; provides an expiration date; and declares an emergency. Draft Bill 147, as proposed, states that “The board shall provide coverage for the expenses of the diagnosis of infertility, fertility treatment, and standard fertility preservation services if recommended and medically necessary.” Coverage must include three completed cycles of intrauterine insemination in accordance with best practices. The bill allows the board to limit the coverage to services necessary to achieve two live births, or a maximum of four completed oocyte retrievals with unlimited fresh and frozen embryo transfers, in accordance with best practices.

NovaRest, Inc. has been contracted as the NDLC’s consulting actuary, and has prepared the following evaluation of public employee fertility health benefits.

This report includes information from several sources to provide more than one perspective on the proposed mandate to provide a totally unbiased report. As a result, there may be some conflicting information within the contents. Although we only used sources that we considered credible, we do not offer any opinions regarding whether one source is more credible than another, leaving it to the reader to develop his/her conclusions.

NovaRest estimates the additional percentage impact above current fertility coverage on health care costs and premiums ranges from 0.7% to 0.9% on a percentage of premium basis, and \$3.46 to \$4.25 on a per member per month (PMPM) basis.

II. Process

NovaRest was charged with addressing the following questions regarding this proposed mandate:

- The extent to which the coverage will increase or decrease the cost of the service;
- The extent to which the coverage will increase the appropriate use of the service;
- The extent to which the coverage will increase or decrease the administrative expenses of carriers, including health maintenance organizations, or other organizations authorized to provide health benefit plans in the State, and the premium and administrative expenses of policyholders and contract holders; and
- The impact of this coverage on the total cost of health care.

NovaRest reviewed literature (including reports completed for other states that were either considering or have passed similar legislation) and developed an independent estimate of the proposed mandate's impact on premiums.



III. Mandated Coverage for Public Employee Fertility Health Benefits

Draft Bill 147 would provide for diagnosis, preservation, storage, and infertility treatment where medically necessary, limited to services needed to achieve two live births, or a maximum of four completed oocyte retrievals with unlimited fresh and frozen embryo transfers. This bill also covers three completed cycles of intrauterine insemination, in accordance with best practices. The definition of medically necessary is (1) consistent with findings and recommendations of a licensed physician or (2) consistent with generally accepted standards of medical practice as set forth by a professional medical organization with a specialization in any aspect of reproductive health, such as the American Society for Reproductive Medicine or the American College of Obstetricians and Gynecologists; or (3) clinically appropriate in terms of type, frequency, extent, site, and duration.

Background

Condition

Draft Bill 147 defines infertility as a disease or condition where:

- (1) The failure to conceive a pregnancy or to carry a pregnancy to live birth after unprotected sexual intercourse;
- (2) An individual's inability to cause pregnancy and live birth either as a covered individual or with the covered individual's partner; or
- (3) A licensed health care provider's findings and statement based on a patient's medical, sexual, and reproductive history, age, physical findings, or diagnostic testing.

Infertility may be caused by an issue present at birth or by a variety of issues that develop later in life. It can also be caused by treatment for a disease in what is known as iatrogenic infertility.

According to the American Cancer Institute, radiation therapy and many chemotherapy drugs used to treat patients in their reproductive years carrying a high risk of causing damage to eggs or sperm, and therefore carry a high risk of infertility.²

Other treatments that carry an increased risk of infertility are bone/stem cell transplants, which can be used to treat a variety of conditions, including erythematosus, lupus, severe aplastic anemia, sickle cell disease, rheumatoid arthritis, etc. Bone marrow and stem cell transplants, which usually involve high doses of chemotherapy and sometimes radiation to the whole body before the transplant, can permanently stop a woman's ovaries from releasing eggs³ and permanently prevent a man from producing sperm.⁴ Although there are several conditions where treatment may involve bone marrow and stem cell transplant, most treatments that cause iatrogenic infertility are associated with cancer treatment.⁵



Treatment

Infertility is treated using a variety of methods, including medications, hormone treatments, and surgery.⁶ Infertility is also treated using assisted reproductive technology (ART). ART appears to be defined differently by different sources, with some including intrauterine insemination (IUI), in vitro fertilization (IVF), gamete intrafallopian transfer (GIFT), and zygote intrafallopian transfer (ZIFT).⁷ While the CDC does not consider treatments in which only sperm are handled (IUI) or procedures with medicine only to stimulate egg production without the intention of having eggs retrieved to be part of ART.⁸ For the purposes of this report we will use the CDC definition and indicate all other reproductive assistance as “non-ART.”

Draft Bill 147 will require diagnosis of infertility, fertility treatment, and standard fertility preservation services, including third-party reproductive care for the benefit of the covered individual or partner. "Third-party reproductive care for the benefit of the covered individual" means the use of eggs, sperm, or embryos donated to the covered individual or partner by a donor, or the use of a gestational carrier, to achieve a live birth with healthy outcomes.

The diagnosis of infertility is defined by Draft Bill 147 as the services, procedures, testing, or medications recommended by a licensed physician, which are consistent with established, published, or approved best practices or professional standards or guidelines, such as the American Society of Reproductive Medicine, the American College of Obstetricians and Gynecologists, or the American Society of Clinical Oncology for diagnosing and treating infertility.

"Fertility treatment" consists of a method of causing pregnancy other than sexual intercourse which is provided with the intent to create a legal parent-child relationship between the covered individual and the resulting child. It includes health care services, procedures, testing, medications, monitoring, treatments, or products, including genetic testing and assisted reproductive technologies such as oocyte retrievals, in vitro fertilization, and fresh and frozen embryo transfers, provided with the intent to achieve a pregnancy that results in a live birth with healthy outcomes. "Monitoring" includes ultrasounds, transvaginal ultrasounds, laboratory testing, and follow-up appointments.

Coverage must also include three completed cycles of intrauterine insemination, in accordance with best practices, such as the standards and guidelines of the American Society of Reproductive Medicine.

"Standard fertility preservation services" means services, procedures, testing, medications, treatments, cryopreservation of eggs, sperm, embryos, and products consistent with established best medical practices or professional guidelines such as those published by the American Society for Reproductive Medicine or the American Society of Clinical Oncology for an individual who has a medical condition or is expected to undergo



medication therapy, surgery, radiation, chemotherapy, or other medical treatment recognized by medical professionals to result in, or increase the risk of, impaired fertility.

Standard fertility preservation services, including the procurement, cryopreservation, and storage of gametes, embryos, or other reproductive tissue, and standard fertility preservation services if the covered individual has a diagnosed medical condition or genetic condition that may cause impairment of fertility affecting reproductive organs or processes. As used in this paragraph, "may cause" means the disease itself, or the necessary treatment, has a likely side effect of infertility as established by best practices, such as the American Society for Reproductive Medicine, the American College of Obstetricians and Gynecologists, or the American Society of Clinical Oncology.

Some disease treatment programs will result in a patient becoming infertile in a condition we will refer to as iatrogenic infertility. For those with a disease treatment that will result in iatrogenic infertility, the person may have time prior to the start of the disease treatment to undergo fertility preservation procedures. Fertility preservation services are procedures that may allow patients to safeguard their ability to have a child. According to the American Society of Clinical Oncology, the most effective preservation method for males is sperm cryopreservation while a female has multiple options for fertility preservation depending on various factors including age, type of treatment, diagnosis, whether she has a partner, the time available, and the potential that cancer has metastasized to her ovaries.⁹ The most common and effective preservation methods are embryo cryopreservation and oocyte (egg) cryopreservation.¹⁰

After performing the fertility preservation procedure, the sample must be stored until it is ready for use. Typically, storage lasts between 5 and 10 years¹¹, although more research is being released on the effectiveness of a sample which has been stored longer than 10 years. Due to effectiveness concerns, clinics will stop performing ART and non-ART methods on patients over the age of 50.¹²

For women, usage of their embryo or oocyte cryopreservation will require the use of ART.¹³ Men may opt for ART or non-ART procedures for their stored sample.

Prevalence of Coverage

State Employee Retiree Group Health Insurance

The North Dakota Public Employees Retirement System (NDPERS) uniform group insurance program currently has a \$20,000 lifetime maximum for infertility diagnostic and treatment services.¹⁴ It does not appear to cover fertility preservation or storage services currently. Draft Bill 147 would remove the \$20,000 maximum, expand the number and types of services covered, and extend the scope of coverage to include the covered individual's partner and third-party reproductive care for the benefit of the covered individual.



Consultant Comments

Some consultant comments on the Draft Bill 147 are as follows:¹⁵

- Current median lifetime maximum dollar benefit for employers with more than 500 employees is \$20,000, the same as currently covered under the NDPERS health plan
- Clarity regarding cryopreservation and coverage for gestational carriers would be prudent
- Estimates a 2.1% cost increase in combined medical and pharmacy claim payments, or about \$15 million for the biennium

Questions Concerning Mandated Coverage for Public Employee Fertility Health Benefits

The extent to which the coverage will increase or decrease the cost of the service.

Mandating a service or product increases the demand for that service or product, which typically increases the cost of the service, where allowed. Carriers can offset this upward pressure on price by contracting with providers. Potential increases in cost are not expected to have a significant impact on per member per month (PMPM) costs or percentage of premium estimates, as NDPERS has a relatively small membership compared to other markets and already covers fertility diagnosis and treatment to a \$20,000 lifetime limit.

The extent to which the coverage will increase the appropriate use of the service.

Fertility treatment can be extremely costly, especially with multiple cycles of ART. Our understanding is that fertility preservation for iatrogenic infertility is currently not covered by NDPERS treatment for infertility, so we would not expect an uptick in fertility preservation and storage costs. However, removing the \$20,000 maximum limit would cause more members to use their samples through either ART or non-ART or to pursue more cycles up to the service limits, which would increase the effectiveness of the treatments. Similarly, more members and their partners with non-iatrogenic infertility are likely to pursue more cycles of ART or non-ART, which would likewise increase effectiveness.

The extent to which the coverage will increase or decrease the administrative expenses of carriers, including health maintenance organizations, or other organizations authorized to provide health benefit plans in the State, and the premium and administrative expenses of policyholders and contract holders.

Draft Bill 147 would expand the allowable treatments, the scope of the coverages, and would remove the maximum limit in favor of service limits. Expanding the allowable treatments could have administrative implications; however, we do not have sufficient information to determine this cost, which we anticipate would not be significant.



The impact of this coverage on the total cost of health care.

Changes to the cost of the service or utilization of the service would impact the total cost of health care. We do not anticipate any significant change in the cost, but the utilization of the service would likely increase as many (primarily female) patients do not pursue fertility preservation services due to cost. Higher utilization of services could put upward pressure on the total cost of health care. The bill may also increase the expenses associated with pregnancies and children. While the mandate might lead to lower rates of depression, lower rates of anxiety, and lower support costs for patients facing iatrogenic infertility, which could put some downward pressure on health care costs, the savings would be minor compared to the cost of infertility treatment.

NovaRest Estimate

Data

- NDPERS provided the premiums, claims, membership, and age distribution in NDPERS for 2021.
- The age and gender proportions of North Dakota's population are based on the 2021 Vintage population estimates.¹⁶
- Information on North Dakota households is based on 2021 American Community Survey (ACS) Data.¹⁷

Assumptions

The following assumptions were used for all service estimates:

- An annual trend factor of 5.5% was applied to service costs.¹⁸
- An 80% carrier cost sharing was applied, consistent with the current cost sharing applied to NDPERS fertility services.¹⁹
- ART was modelled using in vitro fertilization (IVF), which is by far the most common form of ART²⁰ and therefore we assume the average cost and success rates for ART will approximate IVF.

Fertility Preservation

- We used an age range of 19-44 for male and female as the age range that would pursue fertility benefits.²¹
- While Draft Bill 147 would allow preservation in the case of genetic conditions or other diseases where treatment result in iatrogenic infertility, we could not find adequate statistics on the number of non-cancer related iatrogenic infertility. As cancer appears to be the primary cause of iatrogenic infertility, we continued to only consider cancer related cases. We believe the impact from non-cancer related cases would be small.



- New cancer cases were estimated based on data reported by the International Agency for Research on Cancer, which provided expected 2020 cases.²²
- 10%²³ of cancers were removed for Leukemia, Lymphoma, and Myeloma, which are fast acting and require immediate treatment which would not allow time for fertility preservation.
- \$12,660 was used as the cost of cryopreservation of egg/embryos.^{24,25}
- \$1,055 was used as the cost of sperm cryopreservation.²⁶
- We assumed 50% to 80% of people facing iatrogenic infertility will take advantage of the benefit, based on a recent poll regarding adult expectations of having children.²⁷

Fertility Preservation Storage

- Assume a range of 60% to 80% of people will use their stored sample.²⁸
- \$633 was used as the annual storage cost for egg or embryo.²⁹
- The annual storage cost for sperm was set consistent with the annual storage cost assumed for egg or embryo (\$633).

Fertility Diagnostic

- 2021 ACS household data was used to identify married couple and cohabitating opposite sex and same-sex households.
- A refinement to the model was made using a Pew Research study on the percentage of couples not unlikely to pursue children.³⁰
- Assume 10% to 15% additional couples who may pursue diagnostic testing, based on percentage of women who gave birth in the past 12 months and do not have a spouse present or cohabitate.³¹
- Assume 13.5% of couples have trouble conceiving after 12 months.³²
- Assume 18% of couples with a prior condition which can cause infertility, based on a CDC definition.^{33,34} This includes:
 - 10% due to endometriosis³⁵
 - 4% due to pelvic inflammatory disease³⁶
 - 2% due to very painful periods³⁷
 - 1% due to more than one miscarriage³⁸
 - 1% due to suspected male condition³⁹
- \$185 was used as the cost of a basic semen analysis.⁴⁰
- One round of diagnostic testing assumed.⁴¹
- \$1,108 was used as the cost if additional advanced testing was required for males.⁴²
- Assume 15% to 35% of males and females would need more advanced testing as a best estimate.⁴³



- \$1,000 was used as the cost of a female diagnostic panel, which includes an ovarian reserve test, hormone test, and imaging test.⁴⁴
- \$2,850 was used as the cost if additional advanced testing was required for females.⁴⁵

Fertility Treatment

- The proposed bill includes a limited time window when expanded benefits would be available. For this reason, we believe the coverage we estimated, between 20%⁴⁶ and 30%⁴⁷ additional members, would pursue fertility treatment over the limited time window the proposed bill is in effect.
- We relied on an NIH study of people pursuing fertility treatment to determine the average cost of fertility treatment.⁴⁸ The fertility treatment options were categorized by the following:
 - No cycle treatment,⁴⁹ assume \$0 cost as costs already included in diagnostic test
 - Medications only, assume \$2,391 cost per cycle⁵⁰
 - IUI-Clomiphene,⁵¹ assume \$686 cost per cycle⁵²
 - IUI-Gonadotropins,⁵³ assume \$4,943 cost per cycle⁵⁴
 - ART, assume \$12,660 for first cycle, \$6,330 per additional cycle including medications⁵⁵
 - ART – Donor Egg, assume ART costs plus \$10,000 for egg donation per cycle⁵⁶
- The number of cycles is based on the NIH study.⁵⁷
- The probability of treatment is based on the NIH study.⁵⁸ The NIH study only provided the probability of the most invasive treatment received. We split the probability evenly among scenarios of people pursuing less invasive treatments first. For example, for IUI-Gonadotropins we split the ultimate probability into three scenarios: IUI-Gonadotropins only, medications only then IUI-Gonadotropins, and medications only then IUI-Clomiphene then IUI-Gonadotropins.
- The diagnosis was based on the NIH study.⁵⁹
- The average cost per diagnosis was the cost of treatment times number of cycles weighted by probability of treatment.
- The average cost was the weighted average cost by diagnosis weighted by the probability of diagnosis.

Additional Births

- NIH data was used to allocate couples into those pursuing IUI and ART and those who did not.⁶⁰



- The proposed bill will likely lead to more members pursuing fertility treatment, leading to additional pregnancy and birth related costs. A fertility provider we interviewed indicated approximately 30% of patients will not continue fertility treatment due to the cost. Because medication or non-cycle based treatments are typically less expensive than IUI or ART, we assume people pursuing these treatments are more likely to proceed even if they have to pay the full cost. Those who are more likely to pursue IUI and ART are less likely to pursue treatments if they have to pay full cost.
- We used the NIH study for the percentage of successful outcomes from fertility treatment and the % of multiple births.⁶¹
- \$32,931 was used as the cost of a single childbirth based on a 2013 American Journal of Obstetrics and Gynecology (AJOG) article.⁶²
- \$181,126 was used as the cost of a multiple birth based on a 2013 AJOG article weighted by probability of two births versus three or more.⁶³

Methodology

Fertility Preservation

- Used cancer incidence rates applied against NDPERS population to determine annual eligibility for fertility preservation.
- Apply preservation costs and cost sharing against the assumed percentage of eligible members who will pursue preservation to determine total cost.

Fertility Preservation Storage

- Beginning with the annual number who pursue preservation from the prior section, performed a durational analysis to develop the ultimate number of stored samples.
- Apply storage costs and cost sharing against the assumed percentage of eligible members who will use stored samples to determine total cost.

Fertility Diagnostic

- ACS data⁶⁴ was used to identify married couple and cohabitating opposite sex and same-sex households, applied against demographic information and Pew Research on the couples that are not unlikely to pursue having children in North Dakota.⁶⁵
- The resulting couples and an assumption of additional couples who would pursue diagnostic treatment were applied against estimates of infertility rates over a 25-year period.
- Diagnostic costs and cost sharing were applied against couples estimated to pursue fertility diagnostic tests to determine a 25-year cost, which was applied uniformly to determine an annual cost.
- No pent-up demand was included because fertility diagnosis is currently covered and will be covered after the proposed bill expires.



Fertility Treatment

- The number of individuals or couples pursuing fertility treatment is defined as those using their cryopreserved samples plus those pursuing diagnostic treatment over a 25-year period.
- Probabilities of ultimate fertility treatment services and number of cycles was used to determine the average treatment cost, based on the ultimate fertility services.
- Average treatment cost was applied against the number of people pursuing fertility treatment to determine a 25-year cost.
- Instead of applying the 25-year cost uniformly, due to the limited time window the proposed bill would be in effect, a pent-up demand factor was applied to reflect more usage while expanded benefits are available.

Additional Births

- An annual population pursuing fertility treatment was allocated into those pursuing IUI and ART and those who did not.
- An assumption of those who will seek fertility treatment with and without insurance coverage, was applied against NIH estimated success probabilities to determine the estimated additional births and multiple births driven by coverage of fertility treatment.
- Applied pregnancy costs and cost sharing against the assumed estimate of additional successful births to determine total cost.

Cost

Because the first \$20,000 is currently covered by NDPERS for fertility diagnosis and treatment, we estimate a net additional cost of 0.7% to 0.9% of premium or \$3.46 PMPM to \$4.25 PMPM to provide these benefits.

IV. Other State Infertility Laws⁶⁶

There are approximately 20 states that have passed legislation addressing the issue of insurance companies covering infertility treatments. Of those states, thirteen have laws that require insurance companies to cover infertility treatment. California and Texas have laws that require insurance companies to *offer* coverage for infertility treatment. Five states have fertility preservation laws for iatrogenic (medically-induced) infertility. The mandates are different regarding what is covered. Additionally, each State has its infertility definition, which you must meet to qualify for any benefits. Illinois and Delaware have also passed fertility preservation mandates, and New Jersey has a bill pending.

Nine (9) states passed legislation addressing infertility treatment using IVF. These states are Arkansas, Connecticut, Hawaii, Illinois, Maryland, Massachusetts, New Jersey, Rhode Island, and Texas.⁶⁷ Each state's regulation is different and is not necessarily consistent with this North Dakota legislation being proposed. Some other states limit the number of cycles that will be covered or the total lifetime cost.



New York has a pending bill that seeks to update the state's infertility insurance mandate to include up-to-date treatments, including IVF, which is currently excluded.⁶⁸

The estimates of the premium impact of fertility preservation and IVF varies significantly from study to study.

Milliman and Robertson conducted a study for the National Center for Policy Analysis in 1997. They estimated the cost of twelve of the most common mandates, including infertility treatment. Infertility treatment was estimated to increase costs between 3 and 5 percent, reflecting a cost increase in health insurance premiums of \$105 to \$175 annually (assuming a basic family policy costing \$3,500 per year).

John Collins, M.D. estimated the purchasers' cost of infertility benefits. This study finds that the purchaser cost of infertility benefits is \$3.14 per member per year. The study further presented the costs of the benefit for utilization increases of 300% and 500%. A utilization increase of 300% would result in a premium increase to \$9.41 annually. If utilization increased by 500%, the annual premium would increase to \$15.69.⁶⁹

Arkansas: Ark. Stat. Ann. § 23-85-137 and § 23-86-118 (1987, 2011) require accident and health insurance companies to cover in vitro fertilization. Services and procedures must be performed at a facility licensed or certified by the Department of Health and conform to the guidelines and minimum standards of the American College of Obstetricians and Gynecologists and the American Society for Reproductive Medicine. (2011 SB 213)

California: Cal. Health & Safety Code § 1374.55 and Cal. Insurance Code § 10119.6 require specified group health care service plan contracts and health insurance policies to offer coverage for the treatment of infertility, except in vitro fertilization. The law requires every plan to communicate the availability of coverage to group contract holders. The law defines infertility, treatment for infertility, and in vitro fertilization. The law clarifies that religious employers are not required to offer coverage for forms of treatment that are inconsistent with the organization's religious and ethical principles. The law was amended by 2013 Cal. Stats., Chap. 644 (AB 460) to specify that treatment of infertility shall be offered and, if purchased, provided without discrimination on the basis of age, ancestry, color, disability, domestic partner status, gender, gender expression, gender identity, genetic information, marital status, national origin, race, religion, sex, or sexual orientation.

Proposed SB172 would require individual or group health care service plans or policies that cover hospital, medical, or surgical expenses and that are issued, amended, or renewed on or after January 1, 2018, to include coverage for standard fertility preservation services when a necessary medical treatment may cause iatrogenic infertility. As amended (March 7, 2017), the bill would require coverage for evaluation and treatment of iatrogenic infertility, including, but not limited to, standard fertility preservation services.⁷⁰ This bill is currently in Senate Suspense File, where it will be held until consideration before moving to the Senate floor.⁷¹



The California Health Benefits Review Program estimates that under the amended language, utilization would increase by 30%, and annual expenditures would increase by \$6,001,000 or 0.041% for enrollees with plans or policies regulated by the Department of Managed Health Care (DMHC) or the California Department of Insurance (CDI).⁷²

Colorado: Colorado Revised Statutes Title 10. Insurance § 10-16-104.23 requires that all large group health benefit plans issued or renewed on or after January 1, 2023, shall provide coverage for the diagnosis of and treatment for infertility and standard fertility preservation including 3 completed retrievals with unlimited embryo transfers in accordance with the guidelines of ASRM, using single embryo transfer when recommended and medically appropriate.⁷³

Connecticut: Conn. Gen. Stat. § 38a-509 and § 38a-536 (1989, 2005) require that health insurance organizations provide coverage for medically necessary expenses in the diagnosis and treatment of infertility, including in vitro fertilization procedures. Infertility, in this case, refers to an otherwise healthy individual who is unable to conceive or produce conception or to sustain a successful pregnancy during a one-year period. The law was amended in 2005 to provide an exemption for coverage that is contrary to the religious beliefs of an employer or individual.

Connecticut has passed H.B. 5644, which took effect January 2018 and will require health insurance to cover fertility preservation services for insureds who face likely infertility as a result of a necessary medical procedure for the treatment of cancer or other medical conditions.⁷⁴

Connecticut estimated a 10 - 15 percent increase in the use of procedures per year and a premium increase of \$0.062 PMPM for individual policies and \$0.059 PMPM for fully insured group plans.⁷⁵ Using the 2016 SHCE member months and health premiums earned for the Connecticut market, this amounts to about 0.01% for individual policies and fully insured group plans.

Delaware: Senate Bill 139 was signed on June 30, 2018. The Act requires all individual, group, and blanket health insurance policies that provide for medical or hospital expenses shall include coverage for fertility care services, including IVF and standard fertility preservation services for individuals who must undergo medically necessary treatment that may cause iatrogenic infertility.

In a letter to the members of the Delaware State Senate, Insurance Commissioner Trinidad Navarro wrote, “After consultation with an independent actuary, I am pleased to inform you that the impact of mandating coverage for IVF on health insurance premiums is estimated to be about one percent (+1%).”⁷⁶



Hawaii: Hawaii Rev. Stat. § 431:10A-116.5 and § 432:1-604 (1989, 2003) require all accident and health insurance policies that provide pregnancy-related benefits to also include a one-time-only benefit for outpatient expenses arising from in vitro fertilization procedures. In order to qualify for in vitro fertilization procedures, the couple must have a history of infertility for at least five years or prove that the infertility is a result of a specified medical condition.

Illinois: Ill. Rev. Stat. Ch. 215, § 5/356m (1991, 1996) requires certain insurance policies that provide pregnancy-related benefits to provide coverage for the diagnosis and treatment of infertility. Coverage includes in vitro fertilization, uterine embryo lavage, embryo transfer, artificial insemination, gamete intrafallopian tube transfer, zygote intrafallopian tube transfer and low tubal ovum transfer. Coverage is limited to four completed oocyte retrievals, except if a live birth follows a completed oocyte retrieval, then two more completed oocyte retrievals are covered. (1996 Ill. Laws, P.A. 89-669).

Louisiana: La. Rev. Stat. Ann. § 22:1036 prohibits the exclusion of coverage for the diagnosis and treatment of a medical condition otherwise covered by the policy, contract, or plan, solely because the condition results in infertility. The law does not require insurers to cover fertility drugs, in vitro fertilization or other assisted reproductive techniques, reversal of a tubal ligation, a vasectomy, or any other method of sterilization. (2001 La. Acts, P.A. 1045)

Maine: Maine Legislature Sec. 1. 24-A MRSA §4320-S, effective January 1, 2024, will require that a carrier offering a health plan in the State shall provide coverage to an enrollee for fertility diagnostic care, fertility treatment if the enrollee is a fertility patient, and fertility preservation services.⁷⁷

Maryland: Md. Insurance Code Ann. § 15-810 (2000) amends the original 1985 law and prohibits certain health insurers that provide pregnancy-related benefits from excluding benefits for all outpatient expenses arising from in vitro fertilization procedures performed. The law clarifies the conditions under which services must be provided, including a history of infertility of at least a two-year period and infertility associated with one of several listed medical conditions. An insurer may limit coverage to three in vitro fertilization attempts per live birth, not to exceed a maximum lifetime benefit of \$100,000. The law clarifies that an insurer or employer may exclude the coverage if it conflicts with the religious beliefs and practices of a religious organization, on request of the religious organization. Regulations that became effective in 1994 exempt businesses with 50 or fewer employees from having to provide the IVF coverage. (2000 Md. Laws, Chap. 283; H.B. 350) Md. Health General Code Ann. § 19-701 (2000) includes family planning or infertility services in the definition of health care services.

Maryland estimated the cost of iatrogenic fertility preservation would cost anywhere from 0.05% to 0.15%, depending upon the market.



Maryland conducts a periodic review of all mandates. The latest available was completed in 2012. Maryland is a state that mandated in vitro in the individual and large group fully insured markets. According to that study, the full cost of the in vitro mandate was 1.3% to 1.5% of the premium, depending upon the market.⁷⁸

Massachusetts: Mass. Gen. Laws Ann. Ch. 175, § 47H, Ch. 176A, § 8K, Ch. 176B, § 4J, Ch. 176G, § 4 and 211 Code of Massachusetts Regulations 37.00 (1987, 2010) require general insurance policies, non-profit hospital service corporations, medical service corporations, and health maintenance organizations that provide pregnancy-related benefits to also provide coverage for the diagnosis and treatment of infertility, including in vitro fertilization. This law was amended in 2010 to change the definition of "infertility" to be a condition of an individual who is unable to conceive or produce conception during a period of one year if the female is under the age of 35 or during a period of six months if the female is over the age of 35. If a person conceives but cannot carry that pregnancy to live birth, the period of time she attempted to conceive prior to achieving that pregnancy shall be included in the calculation of the one year or six-month period. (SB 2585)

A state-commissioned study of the Massachusetts mandate estimated that the law adds 0.12 percent to 0.96 percent to health insurance premiums, or 54 cents to \$4.44 per person per month.⁷⁹ Research presented 20 years after the Massachusetts mandate was passed concluded that infertility treatment represents 0.89% of the premium.⁸⁰ That equates to roughly \$4.16 per member per month to premiums or \$200 a year for a family of four.

Montana: Mont. Code Ann. § 33-22-1521 (1987) revises certain requirements of Montana's Comprehensive Health Association, the state's high-risk pool, and clarifies that covered expenses do not include charges for artificial insemination or treatment for infertility. (SB 310) Mont. Code Ann. § 33-31-102 et seq. (1987) requires health maintenance organizations to provide basic health services on a prepaid basis, which include infertility services. Other insurers are exempt from having to provide the coverage.

New Hampshire: 2020 NH RSA CHAPTER 417-G requires coverage for the diagnosis of the cause of infertility. It also requires medically necessary fertility treatment. This includes evaluations, laboratory assessments, medications, and treatments associated with the procurement of donor eggs, sperm, and embryos. Coverage also includes fertility preservation when a person is expected to undergo surgery, radiation, chemotherapy, or other medical treatment that is recognized by medical professionals to cause a risk of impairment of fertility. This includes coverage for standard fertility preservation services, including the procurement and cryopreservation of embryos, eggs, sperm, and reproductive material determined not to be an experimental infertility procedure. Storage shall be covered from the time of cryopreservation for the duration of the policy term. Storage offered for a longer period of time, as approved by the health carrier, shall be an optional benefit.⁸¹



New Jersey: N.J. Stat. Ann. § 17:48-6x, § 17:48A-7w, § 17:48E-35.22 and § 17B:27-46.1x (2001) require health insurers to provide coverage for medically necessary expenses incurred in diagnosis and treatment of infertility, including medications, surgery, in vitro fertilization, embryo transfer, artificial insemination, gamete intrafallopian transfer, zygote intrafallopian transfer, intracytoplasmic sperm injection and four completed egg retrievals per lifetime of the covered person. The law includes some restrictions as well as a religious exemption for employers that provide health coverage to fewer than 50 employees. (SB 1076)

New York: N.Y. Insurance Law § 3216 (13), § 3221 (6) and § 4303(1990, 2002, 2011) prohibit individual and group health insurance policies from excluding coverage for hospital care, surgical care, and medical care for diagnosis and treatment of correctable medical conditions otherwise covered by the policy solely because the medical condition results in infertility. The laws were amended in 2002 to require certain insurers to cover infertility treatment for women between the ages of 21 and 44 years. The laws exclude coverage for in vitro fertilization, gamete intrafallopian tube transfers, and zygote intrafallopian tube transfers. The laws were amended again in 2011 by N.Y. laws, Chap. 598 to require every policy that provides coverage for prescription fertility drugs and requires or permits prescription drugs to be purchased through a network participating mail order or other non-retail pharmacy to provide the same coverage for prescription fertility drugs that are purchased from a network participating non-mail order retail pharmacy provided the network participating non-mail order retail pharmacy agrees in advance to the same reimbursement amount and the same terms and conditions that the insurer has established for a network participating mail order or other non-retail pharmacy. The policy is prohibited from imposing additional fees, co-payments, co-insurance, deductibles, or other conditions on any insured person who elects to purchase prescription fertility drugs through a non-mail order retail pharmacy. (2011 AB 8900)

N.Y. Public Health Law § 2807-v (2002) creates a grant program to improve access to infertility services, treatments, and procedures from the tobacco control and insurance initiatives pool.

N.Y. passed a bill to update the state's infertility insurance mandate effective in 2020 to include up-to-date treatments, including IVF, which is currently excluded. The bill adds coverage for standard fertility preservation treatments for those facing iatrogenic infertility.⁸²

Ohio: Ohio Rev. Code Ann. § 1751.01 (A)(1)(h) (1991) requires health maintenance organizations (HMOs) to provide basic health care services, which are defined to include infertility services, when medically necessary.



Rhode Island: R.I. Gen. Laws § 27-18-30, § 27-19-23, § 27-20-20 and § 27-41-33 (1989, 2007) require any contract, plan or policy of health insurance (individual and group), nonprofit hospital service, nonprofit medical service and health maintenance organization to provide coverage for medically necessary expenses for the diagnosis and treatment of infertility. The law clarifies that the co-payments for infertility services may not exceed 20 percent. Infertility is defined as the condition of an otherwise healthy married individual who is unable to conceive or produce conception during a period of one year. Rhode Island includes IVF coverage. The law was amended in 2007 to increase the age of coverage for infertility from forty (40) to forty-two (42) and redefines infertility to mean a woman who is unable to sustain pregnancy during a period of one year. (2007 R.I. Pub. Laws, Chap. 411, SB 453.)

Rhode Island has passed legislation requiring that, “Any health insurance contract, plan, or policy delivered or issued for delivery or renewed in this state, except contracts providing supplemental coverage to Medicare or other governmental programs, which includes pregnancy related benefits, shall provide coverage for medically necessary expenses of diagnosis and treatment of infertility for women between the ages of twenty-five (25) and forty-two (42) years and for standard fertility preservation services when a medically necessary medical treatment may directly or indirectly cause iatrogenic infertility to a covered person.”⁸³

Per patient advocate Christie Gross, when similar IVF bills passed in Rhode Island and Connecticut premiums in both states increased less than \$2.00 PMPM.⁸⁴

Texas: Tex. Insurance Code Ann. § 1366.001 et seq. (1987, 2003) requires that all health insurers offer and make available coverage for services and benefits for expenses incurred or prepaid for outpatient expenses that may arise from in vitro fertilization procedures. In order to qualify for in vitro fertilization services, the couple must have a history of infertility for at least five years or have specified medical conditions resulting in infertility. The law includes exemptions for religious employers.

Utah: 2014 Utah Laws, Chap. 353 (HB 347) amended § 31A-22-610.1, which requires insurers that provide coverage for maternity benefits to also provide an adoption indemnity benefit of \$4,000 for a child placed for adoption with the insured within 90 days of the child’s birth. The law was amended to allow an enrollee to obtain infertility treatments rather than seek reimbursement for an adoption. If the policy offers optional maternity benefits, then it must also offer coverage for these indemnity benefits under certain circumstances.

West Virginia: W. Va. Code § 33-25A-2 (1995) requires health insurers to cover basic health care services, which include infertility services. Applies to health maintenance organizations (HMOs) only.



V. Limitations

NovaRest has prepared this report in conformity with its intended use by persons technically competent to evaluate our estimate regarding Draft Bill 147. Any judgments as to the data contained in the report or conclusions about the ramifications of that data should be made only after reviewing the report in its entirety, as the conclusions reached by review of a section or sections on an isolated basis may be incorrect. Appropriate staff is available to explain and/or clarify any matter presented herein. It is assumed that any user of this report will seek such explanations as to any matter in question.

NovaRest did not have access to actual insurer claims data by service type or reimbursement rates. NovaRest has developed projections in conformity with what we believe to be the current and proposed operating environments and are based on best estimates of future experience within such environments. It should be recognized that actual future results may vary from those projected in this report. Factors that may cause the actual results to vary from the projected include new insurance regulations, differences in implementation of the required coverage by NDPERS, changes in medical treatments and practices, accounting practices, changes in federal and/or local taxation, external economic factors such as inflation rates, investment yields and ratings, and inherent potential for normal random fluctuations in experience.

VI. Reliance and Qualifications

We are providing this report to you solely to communicate our findings and analysis of Draft Bill 147. The reliance of parties other than the North Dakota Legislative Council (NDLC) on any aspect of our work is not authorized by us and is done at their own risk.

To arrive at our estimate, we made use of information provided by NDPERS and other public sources. We did not perform an independent investigation or verification. If this information was in any way inaccurate, incomplete, or out of date, the findings and conclusions in this report may require revision.

This memorandum has been prepared in conformity with the applicable Actuarial Standards of Practice.

We have no conflicts of interest in performing this review and providing this report.

We are members of the American Academy of Actuaries and meet that body's Qualification Standards to render this opinion. We meet the Qualification Standards promulgated by these professional organizations to perform the analyses and opine upon the results presented in this Actuarial Report.



Appendix A: Definitions

- a) "Diagnosis of infertility" means the services, procedures, testing, or medications recommended by a licensed physician which are consistent with established, published, or approved best practices or professional standards or guidelines, such as the American Society of Reproductive Medicine, the American College of Obstetricians and Gynecologists, or the American Society of Clinical Oncology for diagnosing and treating infertility.
- b) "Fertility treatment" means health care services, procedures, testing, medications, monitoring, treatments, or products, including genetic testing, provided with the intent to achieve a pregnancy that results in a live birth with healthy outcomes.
- c) "Infertility" means a disease or condition characterized by:
- (1) The failure to conceive a pregnancy or to carry a pregnancy to live birth after unprotected sexual intercourse;
 - (2) An individual's inability to cause pregnancy and live birth either as a covered individual or with the covered individual's partner; or
 - (3) A licensed health care provider's findings and statement based on a patient's medical, sexual, and reproductive history, age, physical findings, or diagnostic testing.
- d) "Medically necessary" means health care services or products provided in a manner:
- (1) Consistent with the findings and recommendations of a licensed physician, based on a patient's medical history, sexual, and reproductive history, age, partner, physical findings, or diagnostic testing;
 - (2) Consistent with generally accepted standards of medical practice as set forth by a professional medical organization with a specialization in any aspect of reproductive health, such as the American Society for Reproductive Medicine or the American College of Obstetricians and Gynecologists; or
 - (3) Clinically appropriate in terms of type, frequency, extent, site, and duration.
- e) "Monitoring" includes ultrasounds, transvaginal ultrasounds, laboratory testing, and follow-up appointments.
- f) "Standard fertility preservation services" means services, procedures, testing, medications, treatments, cryopreservation of eggs, sperm, embryos, and products consistent with established best medical practices or professional guidelines such as those published by the American Society for Reproductive Medicine or the American Society of Clinical Oncology for an individual who has a medical condition or is expected to undergo medication therapy, surgery, radiation, chemotherapy, or other medical treatment recognized by medical professionals to result in, or increase the risk of, impaired fertility.
- g) "Third-party reproductive care for the benefit of the covered individual" means the use of eggs, sperm, or embryos donated to the covered individual or partner by a donor, or the use of a gestational carrier, to achieve a live birth with healthy outcomes.



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