COMMERCE DEPARTMENT

Evaluation of SF XXXX – Coverage for Inherited Metabolic Diseases

Report to the Minnesota Legislature Pursuant to Minn. Stat. § 62J.26

January 28, 2025

Report Prepared By

This report was prepared by the American Institutes for Research (AIR) at the request of the Minnesota Department of Commerce. AIR created this document for internal use by the Minnesota Department of Commerce pursuant to Contract No. 216732. The document assumes reader familiarity with the proposed mandated health benefits currently under consideration by the Minnesota State Legislature. The document was prepared solely to assist the Minnesota Department of Commerce. No other use of this document or the information or conclusions contained herein is authorized. The period of data collection for any policies and literature analyzed for the proposed mandate ended on December 31, 2024.

Defrayal analysis completed by the Minnesota Department of Commerce is independent of AIR's evaluation.

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Contents

Executive Summary

If enacted, this proposed mandate would require a health issuer to provide coverage for medically necessary treatment of inherited metabolic diseases, including but not limited to the purchase of medical foods and low protein modified food products.

Inherited metabolic diseases are rare diseases caused by specific gene mutations that affect an individual's ability to break down amino acids, carbohydrates, or fatty acids, resulting in impaired absorption, digestion, and removal of these critical enzymes. While each inherited metabolic disease is independently rare, as a group they are estimated to affect 1 in 1,000 individuals. Dietary treatments are the primary treatment approach across the majority of inherited metabolic diseases. Dietary treatment focuses on altering an individual's diet via medical foods and/or low protein modified food products to remove the nutrient(s) that an individual is unable to metabolize. These foods are often more expensive than typical dietary products, and some individuals report spending over $500 per month on out-of-pocket expenses related to treatment for an inherited metabolic disease. Over half of individuals with an inherited metabolic disease are covered by Medicaid, and treatments for inherited metabolic diseases are typically covered more generously by insurance for infants and children compared to adults with the same disease.

There are currently no federal laws related to coverage for treatment of inherited metabolic diseases, but multiple state laws require coverage of dietary treatment for enrollees with inherited metabolic diseases when medically necessary. All 50 state Medicaid programs provide some level of coverage for the treatment of inherited metabolic diseases, but this coverage varies as some states cover treatment for specific inherited metabolic diseases or have annual spending caps and age limitations for coverage.

Public comment respondents expressed concern that the proposed mandate language was unclear on which conditions and treatments would be covered. They also noted that there was an overlap in language between this proposed mandate and the nutritional supports bill included in the 2024 health and human services omnibus bill.

Due to the broad scope of the mandate, an actuarial analysis to estimate the potential economic impact of the mandate is not feasible. Given the range of conditions, treatments, and populations covered by the proposed mandate, attempting to select a representative sample of condition and treatment-related codes from the Minnesota All Payer Claims Database may not reflect the actual cost of the proposed mandate.

The potential state fiscal impact of this mandate is as follows:

- There is no estimated cost for the State Employee Group Insurance Program because medically necessary treatment of inherited metabolic diseases is covered in the program's medical benefit package.
- It is unclear if the proposed mandate would be subject to partial defrayal.
- This proposed mandate would apply to Minnesota Health Care Programs (e.g., Medical Assistance and MinnesotaCare) and may have a cost.

Introduction

In accordance with Minn. Stat. § 62J.26, the Minnesota Department of Commerce (Commerce), in consultation with the Minnesota Department of Health (MDH) and Minnesota Management and Budget (MMB), performs an evaluation of benefit mandate proposals. For evaluation criteria and required evaluation components, please review the Evaluation Report Methodology, available at https://mn.gov/commerce/insurance/industry/policy-data-reports/62j-reports/.

Bill Requirements

Senate File (SF) XXXX is sponsored by Senator Bill Lieske. At the time Commerce received the request for evaluation, the bill had not yet been introduced.

This proposed mandate would require a health issuer to provide coverage for medically necessary treatment of inherited metabolic diseases, including but not limited to, the purchase of medical foods and low protein modified food products. Additionally, a health issuer would not be allowed to impose coverage limits beyond what is applicable for other coverage items in the plan (e.g., cost-sharing, utilization review, referral requirement, or delay period).

This proposed mandate would apply to fully insured small and large group commercial health plans, individual market plans, the State Employee Group Insurance Program (SEGIP), and Minnesota Health Care Programs (e.g., Medical Assistance and MinnesotaCare). The mandate would not apply to self-insured employer plans, grandfathered plans, and Medicare supplemental policies.

This bill would create Minn. Stat. § 62Q.536 and amend Minn. Stat. § 256B.0625, by adding a subdivision.

Key Terms

For the purposes of this mandate:

- “Inherited metabolic disease” means a disease caused by an inherited abnormality of body chemistry that affects the individual's metabolism.
- “Low protein modified food product” means a food product that is specially formulated to have less than one gram of protein per serving and is intended to be used under the direction of a physician for the dietary treatment of an inherited metabolic disease. This does not include natural food that is naturally low in protein.
- “Medical food” means a food that is intended for the dietary treatment of a disease or condition for which nutritional requirements are established by medical evaluation and is formulated to be consumed or administered enterally under direction of a physician.

Associated/Relevant Health Conditions

Inherited metabolic diseases, also known as inborn errors of metabolism, are genetic diseases that impact the body's ability to break down food or substances that are no longer needed. There are hundreds of known inherited metabolic diseases, but some of the most common are:[1]

- Galactosemia;
- Gaucher's Disease;
- Homocystinuria (HCU);
- Maple Syrup Urine Disease (MSUD); and
- Phenylketonuria (PKU).

Failure to address inherited metabolic diseases through dietary intervention may result in severe cognitive impairment, malnutrition, bone impairment, and adult psychosis.[2]

Associated/Relevant Treatment Services

This proposed mandate broadly requires coverage for medically necessary treatment for inherited metabolic diseases, which may include a broad variety of treatments, medications, and procedures.[3] However, the mandate explicitly requires coverage for low protein modified food products and medical foods. These foods are designed specifically for individuals with impaired ability to ingest, digest, absorb, or metabolize food and/or specific nutrients.[4] A modification of diet is typically insufficient to address the nutritional needs of individuals with an inherited metabolic disease. Medical foods are available in age-appropriate formulations to support ongoing nutritional requirements at different life stages for individuals with an inherited metabolic disease. These dietary interventions are designed for specific conditions and require ongoing medical supervision.

Related State and Federal Laws

This section provides an overview of state and federal laws related to the proposed mandate and any external factors that provide context on current policy trends related to this topic.

Relevant Federal Laws

There are no federal laws directly requiring coverage for treatment of inherited metabolic diseases. The Orphan Drug Act of 1983 was enacted to provide incentives and reduce barriers to promote research and development of orphan drugs, which are typically unprofitable novel therapies used to treat rare diseases, including inherited metabolic diseases.[5] A medical food is defined in the Orphan Drug Act (21 U.S.C. 360ee (b) (3)) as "a food which is formulated to be consumed or administered enterally under the supervision of a physician and which is intended for the specific dietary management of a disease or condition for which distinctive nutritional requirements, based on recognized scientific principles, are established by medical evaluation."[5]

In 2023, the Medical Nutrition Equity Act was introduced in the United States House of Representatives and referred to the Committee on Energy and Commerce.[6] If passed, this Act would have provided coverage for medically necessary food for inherited metabolic diseases under federal health programs and applicable private health insurance.

Relevant Minnesota Laws

Minn. Stat. § 62Q.451 prohibits issuers from restricting where an enrollee can receive services for the diagnosis, monitoring, and treatment of rare diseases or conditions.[7] Prohibited restrictions include, but are not limited to prior authorization, preauthorization, and increased fees. This statute enables individuals with rare diseases, such as inherited metabolic diseases, to seek specialized care from providers or at treatment centers that may otherwise not be covered.

In accordance with Minn. Stat. § 62A.26, all qualified health plans must cover special dietary treatment for enrollees with PKU when recommended by a physician.[8] Minn. Stat. § 62Q.531 requires coverage for medically necessary formulas for a variety of conditions including some inherited metabolic diseases.[9]

Minn. Stat. § 256B.0625, subd 32 requires Medical Assistance to cover nutritional products for supplementation due to an individual's inability to properly absorb nutrients and specifically covers nutritional treatments for PKU, hyperlysinemia, and MSUD.[10]

State Comparison

Medicaid programs in all 50 states provide some level of coverage for the treatment of inherited metabolic diseases. However, many states limit the spending per year or cap coverage at a certain age.[11] There are currently 30 states with mandates relating to commercial coverage for treatment of inherited metabolic diseases. Of these states with mandates relating to commercial coverage, five states (Alaska[12], California[13], Missouri[14], North Dakota[15], and Tennessee[16]) specify coverage for treatment of PKU only. Eleven states (Arkansas[17], Florida[18], Kentucky[19], Louisiana[20], Maine[21], Nebraska[22], Nevada[23], New Hampshire[24], New York[25], North Dakota[15], and Vermont[26]) have yearly or monthly spending amount caps ranging from $1,800 to $4,000 a year. Eight states (Colorado[27], Delaware[28], Florida[18], Missouri[14], North Dakota[15], Pennsylvania[29], Tennessee[16], and Virginia[30]) have age limits for coverage ranging from 18-44 years. Four of these states have differing age caps for men and women. These spending and age caps may prevent equitable coverage for many people with an inherited metabolic disease, requiring many individuals to pay out-of-pocket for medically necessary treatment.[2]

Public Comments Summary

Commerce solicited public input on the potential health benefit mandate through a request for information (RFI) posted to Commerce's website and the Minnesota State Register. The summary below represents only the opinions and input of the individuals and/or organizations who responded to the RFI.

Key Stakeholder Comment Themes

For this proposed mandate, Commerce received RFI responses from four commercial health issuers, one health care organization, and three advocacy organizations.

Clarity of Bill Language. Many respondents flagged concerns with the bill's language and recommended revisions that clarify which conditions and treatments would be covered by the proposed mandate. Respondents noted that the existing lack of clarity in the bill's language could lead to increased premiums for members. Specifically, respondents flagged concerns regarding the potentially broad definition of "inherited metabolic diseases," given that there are hundreds of known inherited metabolic diseases. Also, one respondent flagged that there are access considerations for this condition beyond health plan coverage for treatment, and proposed consideration for transportation support for individuals and families impacted by inherited metabolic diseases.

Overlap with Current Legislation. A few respondents noted the potential overlap of this proposed mandate and other previously enacted legislation. One respondent noted possible duplicative coverage considerations with Minn. Stat. § 62Q.531 which was included in the 2024 health and human services omnibus bill and believes this proposed mandate should be reviewed with this concern in mind.

General Comments. Several respondents highlighted Minnesota's implementation of Minn. Stat. § 62M.07, effective January 1, 2026, which prohibits prior authorization for certain medical conditions, including outpatient mental health or substance use disorder treatment, antineoplastic cancer treatment per National Comprehensive Cancer Network® guidelines (excluding medications), preventive services, pediatric hospice care, neonatal abstinence program treatment by pediatric pain or palliative care specialists, and ongoing chronic condition treatment. The respondent suggested that many of this year's proposed mandates fall under this new statute and expressed concerns that removing prior authorization could increase health care costs and negatively affect health outcomes for Minnesotans.

One respondent noted that all of the proposed health benefit mandates have the potential to broadly improve health outcomes for Minnesotans by enhancing their quality of life, supporting individuals, families, and caregivers, and increasing workforce participation, while also benefiting the broader health care system.

Cost Estimates Provided in Stakeholder Comments

Stakeholders and MMB provided the following cost estimates related to the proposed benefit mandate:

- MMB's health plan administrators expect that this proposed mandate will not have a fiscal impact on SEGIP as inherited metabolic diseases are currently covered under medical and prescription drug benefits (see State Fiscal Impact section).
- Currently, some commercial health plan issuers cover medical food items for inherited metabolic conditions. Respondents noted that costs could increase by less than $0.65 per member per month (PMPM).

Stakeholders' results may or may not reflect generalizable estimates for the mandate, depending on the methodology, data sources, and assumptions used for analysis.

Evaluation of Proposed Health Benefit Mandate

Methodology

The following section includes an overview of the literature review and actuarial analysis performed to examine the potential public health and economic impact of the mandate. The literature review includes moderate- to high-quality relevant peer-reviewed literature and/or independently conducted research with domestic data that was published within the last 10 years and is related to the public health, economic, or legal impact of the proposed health benefit mandate. For further information on the literature review methodology, please reference https://mn.gov/commerce/insurance/industry/policy-data-reports/62j-reports/.

Public Health Impact

Prevalence and Types of Inherited Metabolic Diseases. Inherited metabolic diseases are caused by specific inherited gene mutations that affect an individual's ability to break down amino acids, carbohydrates, or fatty acids, resulting in impaired absorption, digestion, and removal of these critical enzymes.[31] Inherited metabolic diseases are considered rare genetic diseases and often grouped in research due to their limited population. The majority of inherited metabolic diseases affect multiple body systems (e.g., digestive system, musculoskeletal system, and central nervous system) which can result in neurological and physical symptoms. Initial symptoms may be absent or minimal, and screening mechanisms are often required to identify inherited metabolic diseases at an early age before the onset of irreversible health consequences. Once identified, inherited metabolic diseases typically require an interdisciplinary approach for management, which may include neurologists, geneticists, dieticians, and experts in metabolism.

There are over 1,000 known inherited metabolic diseases, each with different symptoms, health consequences, and treatment recommendations. While each inherited metabolic disease is independently rare, inherited metabolic diseases as a group are estimated to affect 1 in 1,000 individuals.[32] Inherited metabolic diseases are most commonly detected at birth through newborn screening. Some of the most common forms of inherited metabolic diseases are Galactosemia, Gaucher's disease, Homocystinuria (HCU), Maple Syrup Urine Disease (MSUD), and Phenylketonuria (PKU) (see Table 1). PKU is the most prevalent inherited metabolic disease and affects approximately 5.3 to 7.4 newborns per 100,000 births in the United States.[32,33] Inherited metabolic diseases were originally thought of as pediatric diseases, but with improved understanding and treatments, individuals are living into adulthood.[32] As a result, care for inherited metabolic diseases has largely focused on the pediatric population, which leaves adults with gaps in health care.

Table 1. Disease Overview and Treatment for Common Inherited Metabolic Diseases

Inherited Metabolic Disease	Disease Type	Minnesota Newborn Screening[34]	Symptoms & Comorbidities	Standard Treatment
Galactosemia[32, 35]	Disorder of carbohydrate metabolism: galactose	Yes	Loss of appetite, lethargy, jaundice, enlarged liver, abdominal swelling, delayed growth, cognitive delays, movement disorders, cataracts osteoporosis, and sepsis	Dietary modifications and vitamin supplements (calcium and vitamin D)
Gaucher's Disease[32,36]	Lysosomal storage disorder	No	Abdominal pain, bone pain, anemia, bleeding and bruising problems, bone disease, organ enlargement, Parkinson's disease, and cancers	Medications
Homocystinuria [32,37]	Disorder of amino acid metabolism: homocysteine	Yes	Intellectual disability, eye problems, joint/ limb pain, stroke, high blood pressure, scoliosis, coagulation disorders, blood clots, and high cholesterol	Dietary modifications, medications, and vitamin supplements (vitamin B and folic acid)
Maple Syrup Urine Disease[32,35,36]	Disorder of amino acid metabolism: Leucine, isoleucine, and valine	Yes	Intellectual disability, anxiety, loss of appetite, lethargy, vomiting, acidosis, seizures, coma, pancreatitis, movement disorders, osteoporosis, and brain damage	Dietary modifications, vitamin supplements (vitamin B), and organ transplant
Phenylketonuria [32,37-36]	Disorder of amino acid metabolism: phenylalanine	Yes	Intellectual disability, microcephaly, seizures, eczema, skin and hair hypopigmentation, obesity, bone-related abnormalities, renal disease, metabolic dysfunction, and cardiovascular complications	Dietary modifications, medications, and organ cell transplant

Symptoms and Comorbidities. Many inherited metabolic diseases are asymptomatic in newborns, but if left untreated can cause life-threatening complications.[38] Symptoms and associated comorbidities vary by each inherited metabolic disease, but some of the most common include malnutrition, intellectual disabilities, delayed growth, developmental delay or regression, bone impairment, and cardiomyopathy.[2,31] Adult-onset inherited metabolic diseases typically present with neurological symptoms such as seizures, movement disorders, and psychosis.[32] Additionally, individuals with an inherited metabolic disease experience higher levels of anxiety, depression, and agoraphobia than the general public.[39] Some symptoms, such as severe acidosis or coma, may require complex hospital care.[2] Delayed treatment of inherited metabolic diseases can result in significant morbidity and death.[2]

Newborn Screening. Newborn screening is the primary approach to diagnose most inherited metabolic diseases. These screenings have been shown to be cost-effective in terms of downstream impacts as they can identify

inherited metabolic diseases prior to symptom onset thereby preventing lifelong complications or decreased life expectancy.[4,33] MDH implemented a newborn screening program focused on screening for PKU in 1964.[34] Since then, the newborn screening program has expanded to screen for a large variety of disorders, including other inherited metabolic diseases such as Galactosemia, HCU, and MSUD.

Guidelines. Due to the rarity of inherited metabolic diseases, guidelines focus on more common inherited metabolic diseases, such as MSUD and PKU.[40] For example, the American College of Medical Genetics and Genomics has two published guidelines, the first focused on nutrition management for MSUD and a second guideline for diagnosis and medical management of PKU.[41] These guidelines include nutrition management, dietary therapy, and pharmacotherapy. They strongly endorse lifelong treatment to avoid late-onset complications stemming from treatment discontinuation.[4]

Standards of Care. Dietary treatment is the primary treatment option across the majority of inherited metabolic diseases. This treatment is achieved through removing the nutrient that an individual is not able to metabolize from their diet, typically by substituting medical foods and low-protein modified foods to maintain necessary nutrition. These treatments help to maintain normal growth and development from infancy into adulthood.[34] Medical foods are designed for individuals with limited or fully impaired ability to ingest, digest, absorb, or metabolize ordinary food or nutrients and are used to manage the specific nutrient needs of an individual with an inherited metabolic disease as determined by a medical professional.[4] Medical foods are highly individualized based on an individual's tolerance to the nutrient their body cannot metabolize, stage of development, and clinical needs.[35] Medical foods are introduced when dietary management of a disease cannot be accomplished through normal diet modifications.[38] Depending on an individual's needs, medical foods may provide all the nutritional components required for their diet, or medical foods may need to be paired with medications or vitamins.[4] Medical foods can come in a variety of forms, including powders, ready-to-drink products, capsules, and bars. Low-protein modified foods are manufactured to have low protein levels, as protein is a common nutrient that cannot be metabolized in individuals with some inherited metabolic diseases. These are designed to provide the necessary energy, satiety, and variety of diet for individuals with an inherited metabolic disease and can include specially modified flour, cereals, substitutes, pasta, and rice. Some inherited metabolic diseases can be treated with widely available products (e.g., galactosemia is treated in newborns with conventional formulas that use sucrose instead of lactose) while others require medical foods. Additionally, other specialized nutritional products, such as high doses of vitamins and amino acids, are used in the management of inherited metabolic diseases.[2]

In addition to dietary treatment, individuals must carefully monitor their nutrition levels to ensure that they are meeting their nutritional needs. This requires acute attention to nutritional intake, measurements of biochemical markers, and growth monitoring.[35] For many inherited metabolic diseases, routine weight monitoring and counseling is needed to reduce incidence of negative outcomes, such as obesity. As an individual ages, this typically becomes easier to manage but continued follow-up with a health care provider is recommended so that diet adjustments can be appropriately conducted in accordance with age and growth, and ongoing education can be provided.

Adherence for nutritional treatment for inherited metabolic diseases is typically highest at birth and then steadily decreases with age.[33] For PKU, adherence rates are estimated to be around 23% for individuals aged 25

to 45.[39] This lack of adherence can be due to a range of reasons, including palatability of treatment options, cost, complexity of treatment, and caregiver burden.[36] As cost and coverage are associated with adherence, the proposed coverage may reduce this barrier for recommended treatment.

Non-Dietary Treatments. Some individuals with an inherited metabolic disease may utilize non-dietary treatment, either in addition to dietary treatment or on its own. Sapropterin dihydrochloride, a medication meant to supplement dietary restriction, is a common treatment addition for individuals with PKU that can cause a two to three-fold increase in protein tolerance.[36] Organ, organ cell, or stem cell transplantation is used to treat some inherited metabolic diseases, such as liver cell transplantation for PKU and liver transplantation for MSUD.[36,42] This treatment plays a role in the increased number of pediatric liver transplants in the United States, with a sixfold increase in liver transplants for inherited metabolic diseases from 1987 to 2014.[42] Additionally, hematopoietic stem cell transplantation has been used to treat inherited metabolic diseases with neurologic presentation and is the standard of care for children with severe mucopolysaccharidoses who are younger than two years and have minimal cognitive impairment.[36]

In 2019, the FDA approved pegvaliase, a novel enzyme substitution therapy, for treatment of adults with PKU.[38] Substrate reduction therapy, which is an upstream approach to block the buildup of toxic substances in the body, is a technique to decrease substrate levels and their accumulation for individuals with an inherited metabolic disease.[36] Treatment for Gaucher's disease includes enzyme replacement therapy, which involves periodic infusions of the deficient enzyme to patients with eligible inherited metabolic diseases.[36] Additionally, there are several gene therapies for inherited metabolic diseases that are currently being tested in clinical trials, most notably those for PKU.[43] The trend in utilization rates of non-dietary treatments compared to dietary treatments is unknown, as well as the potential impact of the proposed coverage on treatment decisions.

Health Equity. The cost and accessibility of treatments may adversely impact adults with an inherited metabolic disease. Some research has indicated that the average health care provider is underprepared to clinically treat patients with an inherited metabolic disease. Approximately 74% of providers rated themselves as "somewhat or very poor" in their knowledge of inherited metabolic diseases and nearly 80% felt they required more training on treatments for inherited metabolic diseases.[32] These findings highlight the importance of coordination of care, provider education and clinical practice guidelines.[40]

There is a disproportionate number of specialized health care providers for adults living with inherited metabolic diseases compared to children. Of the primary specialty for board certified geneticists in the United States, 80% were either pediatricians or obstetrician/ gynecologists.[32] The lack of clinicians focused on treating adults with inherited metabolic diseases is a gap in care that may lead to significant proportions of the adult population being untreated or undertreated,[4] which can lead to poor health outcomes and hospitalization. Additionally, there are no guidelines focused on transitioning inherited metabolic disease treatment from the pediatric to the adult population.

Coverage provided by this proposed mandate may reduce cost-associated barriers that may be partially responsible for the reduced treatment levels in the adult population with an inherited metabolic disease. However, the specific impact of the proposed coverage on health disparities for individuals with an inherited metabolic disease is unknown from the current body of evidence.

Economic Impact

Utilization of Treatments. Individuals that require treatment through medical foods or low protein modified foods receive these in a variety of ways.[2] Medical foods are most commonly obtained at pharmacies, hospitals or clinics, health departments, and medical supply companies. Low protein modified foods are most commonly obtained through online sources, health food stores, and manufacturer websites. In many cases, prior authorization is required by a pharmacy, company, or manufacturer in order to demonstrate supervision by a medical provider.[4] Of note, individuals with an inherited metabolic disease often require multiple types of nutrient-related treatment, which can vary in terms of coverage and location of access.[2]

Of individuals with inherited metabolic diseases, approximately 84% use medical foods, 59% use low-protein modified foods, and 50% use vitamin supplements for their treatment.[2] Many individuals with inherited metabolic diseases use multiple dietary products to ensure they are meeting their nutritional needs.[38] If the proposed health benefit mandate were passed, utilization of medically necessary dietary and non-dietary treatments may increase due to the extended coverage for all treatment modalities for inherited metabolic diseases and the removal of cost-sharing implications.

Coverage for Treatments. Coverage for medical foods varies greatly depending on individual state policies, types of medical food and low protein modified food products, and insurance status. Some states pay for and provide medical foods via their newborn screening programs, Children's Health Insurance Program (CHIP), or Women, Infant, Children (WIC) programs.[4] This form of coverage may have age limitations and therefore does not cover treatment for all adolescents and adults living with an inherited metabolic disease. The majority of individuals living with an inherited metabolic disease are covered by Medicaid, followed closely by commercial insurance.[2] However, approximately a quarter of individuals living with an inherited metabolic disease reported having multiple sources of coverage to ensure that all of their treatments receive at least some coverage.[2] Coverage for inherited metabolic disease treatment can vary for both commercial and Medicaid programs depending on diagnosis, age, sex, nutritional content of medical food, and the method of administration (e.g., orally or through a feeding tube).[4,38] Treatment for inherited metabolic diseases are covered at a higher rate for infants and children compared to adults with the same disease.[4] Medical foods are more often covered by insurance than low protein modified foods, which can lead to gaps in coverage and out-of-pocket (OOP) expenses for enrollees.

Cost and insurance reimbursement are some of the biggest barriers in access to medically necessary treatments for inherited metabolic diseases.[39] Many individuals report paying OOP expenses for all treatment modalities for inherited metabolic diseases.[2] OOP expenses per month ranged from $0 to over $500, with low protein modified foods having the highest rate of OOP expenses.

Treatment Costs. The annual cost of dietary treatment for an individual with an inherited metabolic disease can range from $2,254 for an infant up to $25,000 for adults, compared to their counterparts without an inherited metabolic disease.[4,38] Overall health care costs vary by inherited metabolic disease, but are estimated to cost upwards of $2,570 per month across all individuals with an inherited metabolic disease.[37] These costs vary by individual and their specific needs for treatment and dosage, and do not include costs related to emergency care

or hospitalization. Costs of treatment typically increase with age, and prices for inherited metabolic disease related products for children are almost twice that of infant formulas.

Compared to standard formulas, prepared formulas that make up the majority of medical foods for inherited metabolic diseases are more expensive, and prices can increase further depending on the rarity of the inherited metabolic disease.[2,4] PKU is the most common inherited metabolic disease and the medical foods formulated for treatment of PKU are the lowest cost among all inherited metabolic diseases. In 2017, an infant formula to treat PKU cost $33 per can while a comparable infant formula that was not a medical food cost $16 per can, nearly 50% less than the PKU formula. Similarly, low protein modified foods can cost two to eight times more than unmodified foods.[2] Individuals with PKU may also use sapropterin dihydrochloride, a medication meant to supplement dietary restriction, in addition to dietary modification, which can cost approximately $50,000 to $120,000 annually without insurance.[33]

In addition to costs of treatment, other factors that impact overall costs attributed to inherited metabolic diseases include loss of parental income due to caregiving needs, lost days at school or work, increased medical costs related to delayed or limited treatment of inherited metabolic diseases, and hospital and emergency department expenses.[4,32]

Limitations

Due to the rare nature of these diseases, data is often collected from surveys or cohorts with small numbers of participants, which can bias conclusions.[40] There is limited literature related to inherited metabolic disease prevalence, costs, and utilization from the United States compared to other countries. Additionally, few studies include adults with an inherited metabolic disease, despite evidence suggesting it is more difficult for adults to access appropriate care for their condition than for children.[2] There are many inherited metabolic diseases and due to their rare nature, it is difficult to discuss all the types. Because of this, some of the more common inherited metabolic diseases, especially PKU, are highlighted, as there is more relevant literature on standards of care or cost estimates for these inherited metabolic diseases. Estimates for all inherited metabolic diseases can range widely depending on a variety of factors.

The language in the proposed health benefit mandate requires coverage for all medically necessary treatment of inherited metabolic diseases, which is not limited to medical foods and low protein modified foods. This review focused on these two treatments as they are explicitly stated in the mandate, but this coverage could include other modalities of treatment such as medications or gene therapy.

Data Limitations

Due to the broad scope of the mandate, an actuarial analysis to estimate the potential economic impact of the mandate is not feasible. Given the range of conditions, treatments, and populations covered by the proposed mandate, attempting to select a representative sample of condition and treatment-related codes from the Minnesota All Payer Claims Database may not reflect the actual cost of the proposed mandate. Additionally, as many inherited metabolic diseases are exceptionally rare, and current coverage varies, there may be an insufficient number of claims in the Minnesota All Payer Claims Database per year to support a robust analysis.

State Fiscal Impact

The potential state fiscal impact of this proposed mandate includes the estimated cost to SEGIP as assessed by MMB in consultation with health plan administrators, the cost of defrayal of benefit mandates as understood under the Patient Protection and Affordable Care Act (ACA), and the potential impact to Minnesota Health Care Programs.

- This proposed mandate is estimated to have no fiscal impact on SEGIP.
- It is unclear if the proposed mandate would be subject to partial defrayal.
- This proposed mandate would apply to Minnesota Health Care Programs (e.g., Medical Assistance and MinnesotaCare) and may have a cost.

Fiscal Impact Estimate for SEGIP

MMB does not estimate any fiscal impact to SEGIP from this proposed mandate. The Advantage Plan covers medically necessary treatment of inherited metabolic diseases under the medical and prescription drug benefits. MMB assumes that the current treatments for inherited metabolic diseases are not more restrictive than other coverage by the Advantage Plan medical or prescription drug benefits.

Patient Protection and Affordable Care Act Mandate Impact and Analysis

States may require qualified health plan issuers to cover benefits in addition to the 10 essential health benefits defined by the ACA but must defray the costs, either through payments to individual enrollees or directly to issuers, and can partially defray the costs of proposed mandates if some of the care, treatment, or services are already covered in the state's benchmark plan or mandated by federal law, pursuant to section 1311(d)(3)(b) of the ACA. For further defrayal requirements and methodology, please visit https://mn.gov/commerce/insurance/industry/policy-data-reports/62j-reports/.

If enacted, it is unclear if SF XXXX would constitute an additional benefit mandate requiring partial defrayal, relating to any new requirements for specific care, treatment, or services that are not already covered by Minnesota's benchmark plan. Given the broad range of services and conditions potentially covered by the proposed mandate, and overlap with existing coverage requirements in the Minnesota EHB Benchmark plan,[44] it cannot be determined whether any of the services required by the proposed mandate would require defrayal.

Fiscal Impact of State Public Programs

This proposed mandate would apply to Minnesota Health Care Programs (e.g., Medical Assistance and MinnesotaCare) and may have a cost. Medical Assistance and MinnesotaCare already cover medically necessary nutritional products,[45] but may not cover all required services given the broad requirements of the mandate. However, a fiscal estimate has not yet been completed.

Appendix A. Bill Text

Section 1. **[62Q.536] COVERAGE OF INHERITED METABOLIC DISEASES.**

Subdivision 1. **Definition.**

(a) For the purposes of this section, the following definitions apply.

(b) "Inherited metabolic disease" means a disease caused by an inherited abnormality of body chemistry that affects the individual's metabolism.

(c) "Low protein modified food product" means a food product that is specially formulated to have less than one gram of protein per serving and is intended to be used under the direction of a physician for the dietary treatment of an inherited metabolic disease. The term low protein modified food product does not include a natural food that is naturally low in protein.

(d) "Medical food" means a food that is intended for the dietary treatment of a disease or condition for which nutritional requirements are established by medical evaluation and is formulated to be consumed or administered enterally under direction of a physician.

Subd. 2. **Required coverage.** All health plans must cover medically necessary treatment of inherited metabolic diseases, including but not limited to the purchase of medical foods and low protein modified food products.

Subd. 3. **Coverage limitations.** A health plan must not impose on the coverage under this section any limitation, including but not limited to any cost-sharing, utilization review, prior authorization, referral requirements, restrictions, or delays, that is not generally applicable to other coverages under the plan.

Sec. 2. Minnesota Statutes 2022, section 256B.0625, is amended by adding a subdivision to read:

Subd. 72. **Inherited metabolic diseases.**

(a) Medical assistance covers medically necessary treatment for inherited metabolic diseases, including but not limited to the purchase of medical foods and low protein modified food products. Medical assistance must meet the requirements that would otherwise apply to a health plan under section 62Q.536.

(b) For the purposes of this subdivision, the terms "inherited metabolic disease," "low protein modified food product," and "medical food" have the meaning given them in section 62Q.536.

Appendix B. Key Search Terms for Literature Scan

Amino acid metabolism

Amino acid-based formula

Carbohydrate metabolism

Diet therapy

Dietary supplements

Enzyme replacements

Fabry disease

Galactosemia

Gaucher's disease

Glucose supplements

Inborn errors of metabolism

Infants, newborns

Inherited metabolic disease

Insulin treatment

Low protein modified food product

Malabsorption

Medical food

Metabolic testing

Micronutrients

Phenylketonuria

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