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RESEARCH ARTICLE

A Multi-State Analysis of the Fiscal and Social Impact of Commercial Insurance Coverage for Recreational Prostheses in the United States

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ABSTRACT

Despite overwhelming evidence that physical activity is critical for health [1][2], prosthetic devices designed for recreational activities such as running, biking, and swimming are excluded from the vast majority of insurance coverage plans in the United States. Unlike devices designed for walking, recreational prosthetic devices are specifically designed for recreational activities. Using walking-specific devices for recreation has been shown to fail under excessive strain and cause long-term physical and behavioral negative side effects [3][4].

Exceptions in coverage for these devices currently exist in the United States' Veteran healthcare system, or are undergoing revision through various state legislative initiatives. Maine and New Mexico recently passed bills into law, while Colorado (CO), Connecticut (CT), and Illinois (IL) have bills in process applicable to commercial insurance plans [5]. The objective of this policy review is to analyze current applicable policies, available actuarial data and 2022 US Census population data to determine the fiscal and social impact of bills under consideration during the 2023 Legislative Session [6][7]. As a result, the increased per month per member (PMPM) to cover these devices was calculated to estimate the relevant state's fiscal impact:

- CO: House Bill (HB) 23-1136 is conservatively calculated at **\$0.01- \$0.08** PMPM.
- CT: planned fall 2023 proposed bill is conservatively calculated at **\$0.01- \$0.11** PMPM.
- IL: Illinois Senate Bill (SB) 2195 is conservatively calculated at **\$0.01 - \$0.37** PMPM.

These estimated costs are less than 0.04% of the annual average amount spent on healthcare (per capita) in the United States (\$10,000) [8]. Despite spending the highest amount per capita among first-world countries, the United States has the lowest life expectancy. This disparity highlights the need to reconsider preventative health services not currently covered, likely attributing to the high cost per capita in the US. Based on these findings, expanding insurance coverage to recreational prosthetic devices in Colorado, Connecticut, and Illinois would result in potential short and long term physical and behavioral health benefits as relevant social impacts. Consequently, the current definition of "medical necessity" should be expanded by the commercial insurance industry based on recent research [9].

Introduction

Within the United States commercial and Center for Medicare & Medicaid Services (CMS) insurance coverage plans, prosthetic devices designed for recreational activities (e.g., running, biking, swimming) are not considered medically necessary despite the overwhelming evidence that physical activity is a critical component of health. These devices are designed specifically for recreational activities, unlike devices designed for walking. Recreating with walking-specific devices, the only current payor approved medically necessary device, has been shown to fail under the strain of recreation and to cause long term physical and behavioral negative side effects.

Exceptions in coverage for these devices currently exist in the United States' Veteran healthcare system, or are undergoing revision through various state legislative bills. Maine and New Mexico recently passed bills into law, while Colorado (CO), Connecticut (CT), and Illinois (IL) have bills in process. The objective of this policy review is to summarize and analyze applicable literature from actuarial analysis against applicable population census data to determine the fiscal and social impact of bills currently in their state's legislative process.

In consideration of Maine's actuarial analysis utilized to pass their legislation of these devices, this report hypothesized the proposed bills in CO, CT, and IL may lead to an increase in commercial PMPM. However, this report also seeks to further discuss long-term cost savings associated with improved access to recreational prosthetic devices and how this could offset out-of-pocket expenses for amputee patients, healthcare facilities, and state and federal healthcare programs. Additionally, CO, CT & IL's bills could improve access to orthotic & prosthetic (O&P) healthcare providers and enhance equity in healthcare services, discussed in the results of his analysis. Improved access to care has been commonly associated with improved long-term patient outcomes and quality of life.

The authors and collaborators of this report hypothesize: 1) CO, CT & IL's proposed bills would have minimal negative social and fiscal impact on the relevant states' residents, 2) could generate long-term social and fiscal benefits by improving access to healthcare and enhancing patient outcomes compared to the current state insurance coverage options and standard of care.

Methods

In accordance with requirements for submitting bills to state legislatures, relevant laws and regulations were first identified.

Colorado's legislature recently passed SB-40, a unique actuarial process that does not apply to CT or IL. CT and IL were not found to require actuarial analyses or data for bill consideration. SB40 bill text states:

The act requires the division of insurance (division), on or before November 1, 2022, to retain by contract one or more entities that have experience in actuarial reviews, health-care policy, and health equity (contractors) for the purpose of performing actuarial reviews of legislative proposals that may impose a new health benefit coverage mandate on health benefit plans or reduce or eliminate coverage mandated under health benefit plans.

To comply with SB40, the CO estimate methodology included payor claims data to the analysis of associated fiscal and social impact of HB 23-1136's.

To initiate the process, the HB 23-1136 advocacy team approached the CO Division of Insurance to receive the required payor claims data while pending bill assignment. The Division of Insurance responded that the deadline to receive funds for this actuarial analysis had passed in September of 2022, however, the bill could still continue through the legislative process and receive actuarial review at a later date. Additionally, the application deadline of September 2022 was prior to when the contracts of the awarded actuarial entities mentioned above, in November 2022.

In effort to provide an interim solution, the HB 23-1136 advocacy team sought to request payor claims data proactively. Claims data was requested through the Division of Insurance's preferred source from the Colorado All Payer Claims Database, through the appointed health care policy & financing (HCPF) administrator, also known as CIVHC [11]. CIVHC is an objective, not-for-profit organization. CIVHC provided timely responses and collaboration, at a cost of \$13,000 for the first report. However, upon review of the data once provided, HB 23-1136's panel of experts flagged the potential of missing a significant proportion of claims, warranting further discussion. When discussing these concerns with the CIVHC team, it was identified the claims volume reported in CIVHC is 75% complete as their system does not have access to claims from ERISA

plans, Veterans Administration (VA), Indian Health Services, etc. HB 23-1136's advocacy team continues to validate this data with CIVHC and partnering O&P providers across the state.

Thus, CIVHC's data was utilized to calculate CO's PMPM in addition to Maine's actuarial analysis methodology, resulting in two PMPM estimates for CO's fiscal impact. Rationale to use both methodologies for CO's estimates is to provide a comprehensive cost estimate from a reputable actuarial process (conservative estimate), in addition to CO's CIVHC data.

Outside of CO's CIVHC pay claims data, estimates for both CT and IL were only analyzed against Maine's actuarial analysis from previously passed legislation in 2022.

Maine Bill L.D. 1003, "An Act To Improve Outcomes for Persons with Limb Loss," was passed in 2022. This bill was supported by 'The Joint Standing Committee on Health Coverage, Insurance and Financial Services of the 130th Maine Legislature', published February 2022 and prepared by: Donna Novak, FCA, ASA, MAAA Al Bingham, FSA, MAAA of NovaRest, Inc. Marti Hooper, ASA, MAAA of the Maine Bureau of Insurance. It is this author, the Rocky Mountain Orthotic and Prosthetic Coalition (RMOPC), and sponsored Legislators' collective opinion that this reference is the most effective and applicable literature to support CO, CT & IL's proposed bills as the sole actuarial report available on successfully passed legislation (Maine) regarding recreational prosthetic coverage to date.

NovaRest Estimate Methodology for Maine from 'The Joint Standing Committee on Health Coverage, Insurance and Financial Services of the 130th Maine Legislature' was applied to Colorado Population Assumptions as discussed in points #1-4 above.

Based on the findings from the Joint Standing Committee on Health Coverage, Insurance and Financial Services of the 130th Maine Legislature:

NovaRest estimates a net cost of \$0.00 to \$0.012 PMPM, or 0.00% to 0.02% of premium. With an estimated 62,250 members in Maine enrolled in individual qualified health plans, NovaRest estimates the cost to the state of \$9,000 to \$89,000.

When applying the same methodology to all three states individually, the state's overall population was compared to that of Maine to find the differential. All population data was referenced from the US Census Bureau July 2022 report. The differential

was then calculated by a factorial of "x" amount larger or smaller in comparison to Maine.

The factorial was then multiapplied to Maine's member enrolled population to estimate the relevant state's estimated member value.

To estimate the relevant state's cost range, the same State specific factorial was also multiplied to the cost estimate range of Maine's NovaRest estimates of \$9,000 to \$89,000.

To estimate the relevant state's PMPM, the same state specific factorial was also multiplied to the cost estimate range of Maine's NovaRest estimates of \$0.00 to \$0.012 PMPM, or 0.00% to 0.02% of premium. For the purposes of this report's conservative fiscal impact analysis, we assume the lowest fiscal impact of \$0.01 for all three states.

To further accurately project fiscal impact, we further analyze population data to accommodate for costs accrued by the expanded age demographic applicable to CO, CT & IL not included in Maine's legislation (18 yo - 64 yo). 65 yo and older population was excluded as Medicare coverage would apply to this age demographic, not commercial insurance.

Thus, we assume 59.9% of Maine's general population is considered 18 - 64 yo based on US Census Bureau data. There are an estimated 829,819 within that demographic. Furthermore, it can be estimated there are 96,259 Maine residents between the ages 18 - 64 yo are living with disabilities (US Census Bureau states 11.6% persons under 65 yo). This is roughly 3.15 times larger than the Maine 0 -17 yo demographic living with disabilities (18,608). Thus, if we apply this increase to the PMPM increase of \$0.012, Maine's PMPM could be estimated at a \$0.04 increase.

If 62,250 people in Maine are covered by their bill, the expected increased cost to all members (everyone paying into insurance) is \$0.012. If more people are covered, that number has to increase accordingly but the number of people paying into insurance is constant. Therefore we can conservatively estimate directly increasing the PMPM per the applicable population.

The same calculations to estimate the increased \$0.012 PMPM to cover the 18 - 64 yo associated costs was also applied to CO, CT & IL population estimates to project their additional coverage costs.

To estimate a more realistic fiscal impact to the targeted amputee population in each state, we can compare the national prevalence of amputation against the national prevalence of persons living with disability. The US Census Bureau states there are 8.7% living with disability (2,899,018 people, US Census Bureau).

These population calculation breakdowns can be referenced from Image 1 on page 12 for all three states.

The below methodology was applied to CIVHC's data to calculate the relevant PMPM in CO:

In 2018, the total allowed amount for the commercial population was \$1,358,416.59 and the total member liability amount was \$141,561.55. When applying the 1,406,140 member volume from the CIVHC insights dashboard, the allowed amount PMPM cost would be $(\$1,358,416.59/1,406,140)/12 = \$.081$ or 8.1 cents. This calculation was provided by CIVHC staff. This methodology was used in CO's payor claims PMPM estimate, in addition to a PMPM estimate based on the methodology discussed above.

All calculations can be referenced on Image 1 on page 12.. All calculations were further supported by the below assumptions NovaRest applied to their actuarial process. CO, CT & IL relevant data points were referenced and compared when available.

Assumptions:

- There is no reason to believe the fee schedule in CO, CT & IL differ significantly from the L-codes and fee-schedule that calculated these related costs in the Maine (ME) analysis. To compare Medicare fee schedules:
 - L5980: ME \$4,972.39
 - CO \$5,647.62 (CO is 13.6% higher)
 - CT \$3,7703.15
 - IL \$3,920.74
 - L5981: ME \$3,703.15
 - CO \$3,690.59
 - CT \$3,703.15
 - IL \$3,920.74 (IL is 0.3% higher)
 - L6704 (activity TD): ME \$669.04
 - CO \$822.47 (CO is 22.9% higher)
 - CT \$669.04
 - IL \$775.78
- The above values are the full cost of the benefit, and the carrier impact would likely be less due to cost sharing. While we cannot anticipate what cost sharing each carrier will apply. The cost estimate was calculated referencing NovaRest assumptions against US Census Bureau data (Image 1).
- The proposed bills for CO, IL, and CT would apply only to health insurance plans that are

regulated by the applicable state's law. It would not apply to employer plans that are self-funded (ERISA plans) nor to Medicaid.

- 52% of Colorado employer-provided plans are self-funded ERISA plans (vs 48.6% nationally) and 34.5% of Coloradans ages 0-18 are covered by Medicaid (vs 39% nationally).
- 55% of Connecticut employer-provided plans are self-funded ERISA plans (vs 48.6% nationally) and 37% of Connecticutians ages 0-18 are covered by Medicaid (vs 39% nationally), and
- 67% of Illinois employer provided plans are self-funded ERISA plans (vs 48.6% nationally) and 58% (1.6M) of Illinoisans ages 0-18 are covered by Medicaid (vs 39% nationally) [14].

Furthermore, according to the US Census Bureau, 7.6% of CO, 7.8% of CT & 7.5% of IL general populations under the age of 65 live with a disability, while Maine's prevalence is 11.6%.

Results

The estimated costs associated with CO, CT & IL's proposed bill are anticipated to increase commercial PMPM minimally and anticipate long term cost savings over time.

Based on the findings from the Joint Standing Committee on Health Coverage, Insurance and Financial Services of the 130th Maine Legislature:

The proposed coverage would increase the number of recreational prosthetics provided to children amputees. However, given that the population of children amputees is small and the amendment restricts coverage to one prosthetic, this amount would not be significant.

Additionally, providing recreational prostheses may lower long term health-related costs in children living with limb loss, a recent finding from the Amputee Coalition [9]:

For every dollar spent on rehabilitation, there is a savings of more than \$11 in disability benefits. In addition, knee or hip problems resulting from lack of appropriate prosthetic care can result in health care costs ranging from \$80,000 to \$150,000 over a lifetime. Putting more strain on a daily prosthetic may result in damage to the prosthetic device, resulting in more expense for insurance providers. In addition, this treatment may lower the costs of mental health related issues and treatment. Children who are unable to participate in social or leisure activities with their peers due to a lack of appropriate prosthetics might see a negative impact on their quality of life and may develop mental health issues as a result.

If all estimated residents living with disability according to the the US Census Bureau statistic of accrued the mean of costs related to the Amputee Coalition's hip and knee healthcare related costs over a lifetime (\$115,000):

- CO would estimate to save roughly over 43 Billion in healthcare costs over that age demographic's lifespan (0 yo - 64 yo) if appropriate recreational device coverage was provided.
- CT would estimate to save roughly over 26 Billion in healthcare costs over that age demographic's lifespan (0 yo - 64 yo) if appropriate recreational device coverage was provided.
- IL would estimate to save roughly over 90 Billion in healthcare costs over that age demographic's lifespan (0 yo - 64 yo) if appropriate recreational device coverage was provided.

Of note: this assumption is a gross estimate. Not all of the specified population above is applicable to recreational prosthetic care. However, it is imperative to note that if similar recreational therapies and treatments were approved and utilized for similar disabilities (example: hand-cycle coverage for paraplegics, gym memberships for patients post-surgery to continual physical therapy post covered allowable sessions), the potential for cost savings of the lifespan of any population could be profound and should be studied further. Additionally, and more importantly, the Amputee Coalition's data only considers cost saving for those with insurance. If the value was researched further to understand this impact to those uninsured, healthcare systems and state & federally funded Qualified Health Center programs (FQHCs), it is anticipated this cost savings could increase significantly as 19% of the state's population is covered by Medicaid and 13% is covered by Medicare. Even a larger proportion of this demographic is Medicaid eligible but lacks enrollment. This statement needs further research and could greatly benefit the overall downstream spending of healthcare costs across all commercial, state and federal budgets [1].

The methods which will be instituted to manage the utilization and costs of the proposed coverage:

There is no language in the bill that prohibits medical management.

Current law in all three states require insurance coverage for prosthetic devices allows care management in the same manner as other covered benefits:

- CO: 10-16-104 (14) "C", A health benefit plan may require prior authorization for

prosthetic devices in the same manner that prior authorization is required for any other covered benefit" [15].

- CT: PA18-69 Section 3c, A group health insurance policy may require prior authorization for prosthetic devices, provided such authorization is required in the same manner and to the same extent as is required for other covered benefits under such policy [16].
- IL: (215 ILCS 5/356z.18) Requiring insurance coverage for prosthetic and custom orthotic devices allows care management in the same manner as other covered benefits: "A health benefit plan may require prior authorization for prosthetic and custom orthotic devices in the same manner that prior authorization is required for any other covered benefit" [17].

HB23-1136, SB 2195, & CT's proposed bill do not modify each states' prior language.

The extent to which insurance coverage may affect the number and types of providers over the next five years:

There are several orthotic and prosthetic clinics across all three states who offer the services that would be provided under this benefit. As there is a larger number of individuals to serve in this category across all three states:

- 4,454,586 more residents in CO than ME
- 2,240,865 more residents in CT than ME
- 11,196,692 more residents in IL than ME

Since we do not anticipate a significant increase in utilization as the applicable population with commercial insurance is less than estimated 30% of the applicable billable population, we don't expect the number of providers to change significantly. This was also found to be true for Maine in the Joint Standing Committee on Health Coverage, Insurance and Financial Services of the 130th Maine.

The extent to which the insurance coverage of the health care service or providers may be reasonably expected to increase or decrease the insurance premium or administrative expenses of policyholders:

If we conservatively apply this each State's 64 yo and younger PMPM and total cost estimate ranges, the total annual impact to each state is as specified below:

- CO: House Bill (HB) 23-1136 is conservatively calculated at \$0.01- \$0.18 PMPM. However, when applying this cost estimate across the validated CIHVC payor claims data, this estimate is calculated at **\$0.01 - \$0.08 PMPM.**

- CT: planned 2024 proposed bill is conservatively calculated at **\$0.01- \$0.11** PMPM.
- IL: Illinois Senate Bill (SB) 2195 is conservatively calculated at **\$0.01 - \$0.37** PMPM.

The impact on the total cost of health care, including potential benefits and savings to insurers and employers because the proposed bill treatment or service prevents disease or illness or leads to the early detection and treatment of disease or illness that is less costly than treatment or service for later stages of a disease or illness:

Based on the findings from the Joint Standing Committee on Health Coverage, Insurance and Financial Services of the 130th Maine Legislature:

One potential savings of a recreational prosthetic is that since they are more durable and made for high activity, there will be less breakage and therefore minimized costs for repair and maintenance. Gabrielle Sinotte, MSPO, CPO, a certified prosthetist/orthotist, mentioned that it is common for less expensive prosthetic components to break prematurely because they cannot withstand the stresses from the higher activity level of a child.

It is also this author's experience that less expensive devices break prematurely due to stressors caused by recreation. These stressors were not as prioritized in these devices compared to recreation specific devices, thus increasing the probability of structural failure and increased cost to replace to insurance companies and/or the patient. There is also an increased cost in provider resources as the O&P provider needs increased appointments with the patient, decreasing their access to their next available appointment for other patient needs. The decrease in provider availability could subsequently be assumed as reduced if patients required less premature replacement of devices due to failure.

Also, as mentioned above, there are potential mental health cost savings. However, the population is so small we do not expect a significant savings impact.

The effects of the proposed bills on the benefit on the cost of health care, particularly the premium and administrative expenses and indirect costs, to employers and employees, including the financial impact on small employers, medium-sized employers and large employers:

We expect a small increase to premiums, as outlined in the results section.

The effect of the proposed bill on cost-shifting between private and public payers of healthcare coverage and on the overall cost of the health care delivery system in this State:

We do not believe there will be cost shifting as the eligible population is very small.

Based on the findings from the Joint Standing Committee on Health Coverage, Insurance and Financial Services of the 130th Maine Legislature:

The contribution of the benefit to the quality of patient care and the health status of the population, including any research demonstrating the medical efficacy of the treatment or service compared to the alternative of not providing the treatment or service:

Studies show that recreational prosthetics greatly improved children's lives and allowed them to pursue the activities they wanted.

Based on the findings from the Joint Standing Committee on Health Coverage, Insurance and Financial Services of the 130th Maine Legislature:

The extent to which the need for coverage outweighs the cost of coverage benefits all policyholders:

Advocates indicated that children and adults who do not receive recreational prosthetics are unable to participate in certain social, leisure, athletic and school activities with their peers, which can lead to a poorer quality of life, poor health outcomes and decrease in mental health. The low cost of covering the benefits for policyholders is vastly outweighed by the benefits of providing coverage to individuals and for society.

The extent to which the problem of coverage can be resolved by covering the availability of coverage as an option for policyholders:

It is likely that only those who would benefit from the services would purchase the optional coverage. This optional coverage is currently not available and would be very expensive to individuals. This cost would be reduced if the option were only available when the coverage was initially purchased, but it would then be less effective because many individuals would not anticipate needing the coverage and therefore would not purchase it.

The cumulative impact of covering this benefit in combination with existing coverage on costs and availability of coverage:

The estimated cost of current Maine mandates is detailed in Appendix A. For most of these mandates, our estimate is based on the net impact on premiums as estimated at the time the mandate was enacted. Four of the mandates – mental health, substance abuse, chiropractic, and screening mammograms – require carriers to report annually the number of claims paid for these benefits and the estimates are based on that data. The true cost for the Maine mandates is impacted by the fact that:

- I. *Some services would be provided and reimbursed in the absence of a mandate.*
- II. *Certain services or providers will reduce claims in other areas.*
- III. *Some mandates are required by Federal law.*

Additional Non-LD1003 Support:

All three proposed bills are anticipated to improve the patient experience of care (including quality and satisfaction), improve the health of the applicable population & reduce the per capita cost of healthcare of the relevant population [18]:

(1) Improve patient experience of care:

Recreational prostheses are devices specifically developed to assist patients with recreational physical activities like running, cycling, and swimming (as opposed to standard prostheses, which assist patients with activities of daily living). Such devices are unique to each patient, specially designed to maximize performance and minimize injury.

Recreational prostheses are medically necessary because they create opportunities for physical activity, one of the most important factors in maintaining overall health throughout one's lifetime. Whether it's vigorous exercise or simple day-to-day movement, being physically active increases strength and balance, improves mental health, supports better-quality sleep, and reduces the risk of disease and cancer. Recreational prostheses are also medically necessary because they are critical to injury avoidance when children and adults with limb loss or limb difference engage in physical activity. Utilizing an inappropriately designed prosthesis for recreational activities is unsafe for the prosthetic user and can lead to secondary musculoskeletal conditions like osteoarthritis (joint disintegration) from compensatory movements resulting in overuse, as well as knee, hip, and back pain, skin sores and discomfort, higher fall rates, and faster breakdown and less reliability of the standard prosthesis. Additionally, without access to the appropriate recreational prostheses, adults and children may struggle to reach aerobic capacity (i.e. 50-85% of one's maximum heart rate) for the amount of time recommended by the U.S. Department of Health and Human Services for Americans to be healthy. The 2nd Edition of the Physical Activity Guidelines released in 2019 recommends children have 60 or more minutes each day of moderate- or vigorous-intensity aerobic physical activity. For adults, the recommendation is 150 minutes weekly.

(2) Improve the health of populations:

Physical activity is an essential component of a healthy childhood, playing a role in musculoskeletal, cognitive, emotional, and social development.

Because of this, improving access to recreational prostheses for children with disabilities is necessary to ensure positive outcomes. Due to the success of LD 1003 in Maine, along with other successful public health campaigns focusing on children in the U.S. and abroad, for example the United Kingdom's National Health Service (NHS) fund for children's activity and sports prostheses, we believe that similar policy can (and should) be implemented in other states across the country

(3) Reduce the per capita cost of health care:

In the vast majority of cases, recreational prostheses are considered "not medically necessary" and denied by insurance, requiring individuals to pay prohibitively high out-of-pocket costs: a running prosthesis, for example, is up to \$15,000 - \$25,000 per limb. As a result, access to these devices and the physical activity they provide is severely limited.

Knee or hip problems resulting from lack of appropriate prosthetic care can result in increased healthcare costs ranging from \$80,000 to \$150,000 over the course of a single patient's lifetime.

Additionally, adults with disabilities who are physically active are more likely to be employed, advance in their careers, and have improved physical and mental health.

Other Relevant State Laws:

Based on the findings from the Joint Standing Committee on Health Coverage, Insurance and Financial Services of the 130th Maine Legislature, the below states have enacted laws for coverage for medically necessary prosthetics:

Connecticut § 38a-518f and § 38a-492t:

(a) As used in this section, "prosthetic device" means an artificial limb device to replace, in whole or in part, an arm or a leg, including a device that contains a microprocessor if such microprocessor-equipped device is determined by the insured's or enrollee's health care provider to be medically necessary. "Prosthetic device" does not include a device that is designed exclusively for athletic purposes. (b) (1) Each group (and individual) health insurance policy providing coverage of the types specified in subdivisions (1), (2), (4), (11) and (12) of section 38a-469 delivered, issued for delivery, renewed, amended or continued in this state shall provide coverage for prosthetic devices that is at least equivalent to that provided under Medicare. Such coverage may be limited to a prosthetic device that is determined by the insured's or enrollee's health care provider to be the most appropriate to meet the medical needs of the insured or enrollee. Such prosthetic device shall not be considered durable medical equipment under such policy. (2) Such policy shall provide coverage for the medically

necessary repair or replacement of a prosthetic device, as determined by the insured's or enrollee's health care provider, unless such repair or replacement is necessitated by misuse or loss. (3) No such policy shall impose a coinsurance, copayment, deductible or other out-of-pocket expense for a prosthetic device that is more restrictive than that imposed on substantially all other benefits provided under such policy, except that a high deductible health plan, as that term is used in subsection (f) of section 38a- 520, shall not be subject to the deductible limits set forth in this subdivision or under Medicare pursuant to subdivision (1) of this subsection. (c) A group health insurance policy may require prior authorization for prosthetic devices, provided such authorization is required in the same manner and to the same extent as is required for other covered benefits under such policy.

Iowa § 514C.25:

a. Notwithstanding the uniformity of treatment requirements of section 514C.6, a policy, contract, or plan providing for third-party payment or prepayment of health or medical expenses shall provide coverage benefits for medically necessary prosthetic devices when prescribed by a physician licensed under chapter 148. Such coverage benefits for medically necessary prosthetic devices shall provide coverage for medically necessary prosthetic devices that, at a minimum, equals the coverage and payment for medically necessary prosthetic devices provided under the most recent federal laws for health insurance for the aged and disabled pursuant to 42 U.S.C. § 1395k, 1395l, and 1395m, and 42 C.F.R. §410.100, 414.202, 414.210, and 414.228, as applicable. b. For the purposes of this section, "prosthetic device" means an artificial limb device to replace, in whole or in part, an arm or leg.

Virginia § 38.2-3418.15:

A. Notwithstanding the provisions of § 38.2-3419, each insurer proposing to issue individual or group accident and sickness insurance policies providing hospital, medical and surgical, or major medical coverage on an expense-incurred basis; each corporation providing individual or group accident and sickness subscription contracts; and each health maintenance organization providing a health care plan for health care services shall offer and make available coverage for medically necessary prosthetic devices, their repair, fitting, replacement, and components, as follows: 1. As used in this section: "Component" means the materials and equipment needed to ensure the comfort and functioning of a prosthetic device. "Limb" means an arm, a hand, a leg, a foot, or any portion of an arm, a hand, a leg, or a foot. "Prosthetic device" means an artificial

device to replace, in whole or in part, a limb. 2. Prosthetic device coverage does not include repair and replacement due to enrollee neglect, misuse, or abuse. Coverage also does not include prosthetic devices designed primarily for an athletic purpose. 3. An insurer shall not impose any annual or lifetime dollar maximum on coverage for prosthetic devices other than an annual or lifetime dollar maximum that applies in the aggregate to all items and services covered under the policy. The coverage may be made subject to, and no more restrictive than, the provisions of a health insurance policy that apply to other benefits under the policy. 4. An insurer shall not apply amounts paid for prosthetic devices to any annual or lifetime dollar maximum applicable to other durable medical equipment covered under the policy other than an annual or lifetime dollar maximum that applies in the aggregate to all items and services covered under the policy.

5. No insurer, corporation, or health maintenance organization shall impose upon any person receiving benefits pursuant to this section any coinsurance in excess of 30 percent of the carrier's allowable charge for such prosthetic device or services when such device or service is provided by an in-network provider. 6. An insurer, corporation, or health maintenance organization may require preauthorization to determine medical necessity and the eligibility of benefits for prosthetic devices and components, in the same manner that prior authorization is required for any other covered benefit.

Florida § 409.815:

(2) **Benchmark benefits.**--In order for health benefits coverage to qualify for premium assistance payments for an eligible child under ss. 409.810-409.821, the health benefits coverage, except for coverage under Medicaid and Medikids, must include the following minimum benefits, as medically necessary. (h) *Durable medical equipment.* --Covered services include equipment and devices that are medically indicated to assist in the treatment of a medical condition and specifically prescribed as medically necessary, with the following limitations: 4. Covered prosthetic devices include artificial eyes and limbs, braces, and other artificial aids.

Below are state laws who do not specify whether a prosthetic must be medically necessary:

Arizona § 36-2907:

A. Subject to the limitations and exclusions specified in this section, contractors shall provide the following medically necessary health and medical services: 5. Medical supplies, durable medical equipment, insulin pumps and prosthetic devices ordered by a physician or a primary care practitioner. Suppliers of durable medical equipment shall provide the administration with complete information about the identity of each person who has an ownership or controlling interest in their business and shall comply with federal bonding requirements in a manner prescribed by the administration. B. The limitations and exclusions for health and medical services provided under this section are as follows:

(b) Prosthetic devices do not include hearing aids, dentures, bone-anchored hearing aids or cochlear implants. Prosthetic devices, except prosthetic implants, may be limited to \$12,500 per contract year.

Colorado: § 10-16-104:

With regard to newborn children born with cleft lip or cleft palate or both, there shall be no age limit on benefits for such conditions, and care and treatment shall include to the extent medically necessary: Oral and facial surgery, surgical management, and follow-up care by plastic surgeons and oral surgeons; prosthetic treatment such as obturators, speech appliances, and feeding appliances; medically necessary orthodontic treatment; medically necessary prosthodontic treatment; rehabilitative speech therapy; otolaryngology treatment; and audiological assessments and treatment.

Bulletin B-4.97: It is the Division's position that carriers issuing health benefit plans must provide coverage for the required prosthetic devices at 80% of the carrier allowable rates, minus an amount equivalent to the Medicare Part B deductible as of January 1 of each plan year in which the health benefit plan is issued or renewed. Carriers that offer a Catastrophic Plan, as the term is used in § 10-16-116 C.R.S., and plans that are eligible for a Health Savings Account (HSA), shall apply the medical deductible to prosthetic services, as required under federal law. A health benefit plan may require prior authorization for prosthetic devices in the same manner that prior authorization is required for any other covered benefit. Covered benefits are limited to the most appropriate model that meets the medical needs of the covered person as determined by the insured's treating physician. Repair and replacement of prosthetic devices are also covered, subject to copayments and deductibles, unless necessitated by misuse or loss.

Utah § 31A-22-638:

(1) For purposes of this section: (a) "Orthotic device" means a rigid or semirigid device supporting a weak or deformed leg, foot, arm, hand, back, or neck, or restricting or eliminating motion in a diseased or injured leg, foot, arm, hand, back, or neck.

(b)(i) "Prosthetic device" means an artificial limb device or appliance designed to replace in whole or in part an arm or a leg. (ii) "Prosthetic device" does not include an orthotic device. (2)(a) Beginning January 1, 2011, an insurer, other than an insurer described in Subsection (2)(b), that provides a health benefit plan shall offer at least one plan, in each market where the insurer offers a health benefit plan, that provides coverage for benefits for prosthetics that includes: a prosthetic device; all services and supplies necessary for the effective use of a prosthetic device, including: (A) formulating its design; (B) fabrication; (C) material and component selection; (D) measurements and fittings; (E) static and dynamic alignments; and (F) instructing the patient in the use of the prosthetic device; all materials and components necessary to use the prosthetic device; and any repair or replacement of a prosthetic device that is determined medically necessary to restore or maintain the ability to complete activities of daily living or essential job-related activities and that is not solely for comfort or convenience. (b) Beginning January 1, 2011, an insurer that is subject to Title 49, Chapter 20, Public Employees' Benefit and Insurance Program Act, shall offer to a covered employer at least one plan that: (i) provides coverage for prosthetics that complies with Subsections (2)(a)(i) through (iv); and (ii) requires an employee who elects to purchase the coverage described in Subsection (2)(b)(i) to pay an increased premium to pay the costs of obtaining that coverage. (c) At least one of the plans with the prosthetic benefits described in Subsections (2)(a) and (b) that is offered by an insurer described in this Subsection (2) shall have a coinsurance rate, that applies to physical injury generally and to prosthetics, of 80% to be paid by the insurer and 20% to be paid by the insured, if the prosthetic benefit is obtained from a person that the insurer contracts with or approves. (d) For policies issued on or after July 1, 2010 until July 1, 2015, an insurer is exempt from the 30% index rating restrictions in Section 31A-30-106.1, and for the first year only that coverage under this section is chosen, the 15% annual adjustment restriction in Section 31A-30-106.1, for any small employer with 20 or less enrolled employees who chooses coverage that meets or exceeds the coverage under this section. (3) The coverage described in this section: (a) shall, except as otherwise provided in this section, be

made subject to cost-sharing provisions, including dollar limits, deductibles, copayments, and coinsurance, that are not less favorable to the insured than the cost-sharing provisions of the health benefit plan that apply to physical illness generally; and (b) may limit coverage for the purchase, repair, or replacement of a 33 microprocessor component for a prosthetic device to \$30,000, per limb, every three years. (4) If the coverage described in this section is provided through a managed care plan, offered under Chapter 45, Managed Care Organizations, the insured shall have access to medically necessary prosthetic clinical care, and to prosthetic devices and technology, from one or more prosthetic providers in the managed care plan's provider network.

California § 10123.7:

(a) On or after January 1, 1986, an insurer issuing group health insurance shall offer coverage for orthotic and prosthetic devices and services under the terms and conditions that may be agreed upon between the group policyholder and the insurer. An insurer shall communicate the availability of that coverage to all group policyholders and to all prospective group policyholders with whom the insurer is negotiating. Coverage for prosthetic devices shall include original and replacement devices, as prescribed by a physician and surgeon or doctor of podiatric medicine acting within the scope of his or her license. Coverage for orthotic devices shall provide for coverage if the device, including original and replacement devices, is prescribed by a physician and surgeon or doctor of podiatric medicine acting within the scope of his or her license, or is ordered by a licensed health care provider acting within the scope of his or her license. An insurer shall have the right to conduct a utilization review to determine medical necessity before authorizing these services.

(b) Notwithstanding subdivision (a), on and after July 1, 2007, the amount of the benefit for orthotic and prosthetic devices and services shall be no less than the annual and lifetime benefit maximums applicable to all benefits in the policy. A copayment, coinsurance, deductible, and maximum out-of-pocket amount applied to the benefit for orthotic and prosthetic devices and services shall be no more than the most common amounts contained in the policy.

(c) This section shall not apply to Medicare supplement, vision-only, dental-only, or CHAMPUS supplement insurance, or to hospital indemnity, hospital-only, accident-only, or specified disease insurance that does not pay benefits on a fixed benefit, cash payment only basis.

Conclusion

The findings of this literature review conclude the following key fiscal and social impact considerations: The estimated increase to CO, CT & IL is less than 0.003% of the annual amount spent on healthcare per capita in the United States (\$10,000). The United States currently spends the highest amount per capita across first world countries, yet has the lowest expected life expectancy. Based on these findings, this review suggests the current definition of 'medically necessary' should be further researched as the current basis of insurance coverage for services rendered. While each state's proposed legislation would see an increase to commercial PMPM, this report suggests long term cost saving associated with each bill. These cost savings are anticipated to affect out of pocket expenses to the amputee patient population seeking recreational prosthetic access, relevant healthcare facilities, associated state and federal funded healthcare programs and O&P healthcare providers. Further research is suggested to validate this finding.

CO, CT & IL's bills could potentially increase long term related healthcare service access and equity to O&P next available appointments, a key performance indicator measuring a clinic's ability to serve the local patient population needs. Enhancing access and equity to healthcare services is associated with long term enhanced patient outcomes and subsequently, improved quality of life. Further research is suggested to validate this finding. Based on these findings, the author and collaborators of this report find CO, CT & IL's bills discussed in this report would have minimal social and fiscal impact on each state's residents. Furthermore, this report also suggests long term social and fiscal benefits to improve health access and equity by means of enhanced patient outcomes in comparison to current state insurance coverage options and downstream negative healthcare outcomes of patients recreating on non-recreational prosthetic devices.

| Section/Data | Colorado | | Connecticut | | Illinois | |
|--|------------|-----------|-------------|-----------|------------|------------|
| Insurance Coverage Data | | | | | | |
| Employer- National rate 49% | 52% | | 55.2% | | 54.9% | |
| Medicaid - National rate 39% | 35% | | 37% | | 36.9% | |
| Population Data | | | | | | |
| Total population - all ages | 5,839,926 | | 3,626,205 | | 12,582,032 | |
| Total population compare to Maine | 4,454,586 | | 2,240,865 | | 11,196,692 | |
| Total population factor over Maine | 4.22 | | 2.62 | | 9.08 | |
| State assumed members in qualified plans based on NovaRest assumptions | 262,416 | | 162,943 | | 565,371 | |
| Under 5 | 0.05 | 315,356 | 0.05 | 177,684 | 0.06 | 704,594 |
| Under 18 | 0.21 | 1,249,744 | 0.20 | 732,493 | 0.22 | 2,780,629 |
| 65 and over | 0.15 | 881,829 | 0.18 | 652,717 | 0.17 | 2,088,617 |
| Between 18-64 | 0.64 | 3,708,353 | 0.62 | 2,240,995 | 0.61 | 7,712,786 |
| Under 65 | 0.85 | 4,958,097 | 0.82 | 2,973,488 | 0.83 | 10,493,415 |
| Population with disability under age 65 | 0.08 | 376,815 | 0.08 | 231,932 | 0.08 | 787,006 |
| Maine Baseline Data (NovaRest) - 0-18 coverage | | | | | | |
| Persons enrolled indiv. qualified plans | 262,416 | | 162,943 | | 565,371 | |
| 0-17 living with disabilities | 94,981 | | 57,134 | | 208,547 | |
| Multiplier to ME | 5.10 | | 3.07 | | 11.21 | |
| Min cost to state | 45,938.58 | | 27,633.83 | | 100,866.54 | |
| Max cost to state | 454,281.47 | | 273,267.91 | | 997,458.03 | |
| PMPM Maximum (0-18 y/o) | 0.06 | | 0.04 | | 0.13 | |
| Scaling up to 0-64 y/o coverage | | | | | | |
| Persons enrolled indiv. qualified plans | 262,416.01 | | 162,942.86 | | 565,371.31 | |
| Scale factor of 18-64 w/ disabilities over 0-17 w/ disabilities | 2.97 | | 3.06 | | 2.77 | |

Image 1

Additional Key Collaborators:

- Bipartisan HB23-1136 Sponsoring Legislators:
 - House Representative David Ortiz
 - House Representative Anthony Hartsook
 - Senate Representative Faith Winters
- Sponsoring Organizations:
 - Rocky Mountain Orthotic & Prosthetic Coalition (RMOPC)
 - American Academy of Orthotics & Prosthetics Association (AAOPA)
 - American Orthotic & Prosthetic Association (AOPA)
 - The Amputee Coalition
- Other Individual Collaborators:
 - Angela Montgomery, CPO
 - Jim Kaiser, CPO
 - Shelly Nebel

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