Mandated coverage of medical cannabis: Costs and implications

Commissioned by Greenwich Biosciences, Inc.

Katie Holcomb, FSA, MAAA
Adam W. Feller, FSA,CERA, MAAA
Jake Klaisner, FSA, MAAA

March 2020

Today, over half of all states permit the use of medical cannabis for certain qualifying conditions, even though it remains illegal at the federal level. Under these state-run medical cannabis programs patients are responsible for the cost of products they purchase, and these costs are generally not eligible for reimbursement through traditional health insurance arrangements.

Greenwich Biosciences, Inc. (Greenwich) engaged Milliman to evaluate the potential costs and implications on the commercial insurance and Medicaid markets if states were to mandate the coverage of medical cannabis for patients enrolled in either of these two markets. In our analysis, we estimate the claim costs medical cannabis coverage adds to the insurance market and examine the challenges it presents, both clinical and operational. For example, medical cannabis products do not have the same clinical trial and safety testing data as FDA-approved medicines, which health plans use to make coverage decisions and physicians use to formulate patient treatment plans. This issue brief summarizes the key quantitative and qualitative findings from our analysis of mandated medical cannabis coverage.

Results

We estimate the claim costs per member per month (PMPM) of adding medical cannabis to the insurance benefit in a state's commercial or Medicaid markets. Our estimates consider gross claim costs only and do not contemplate how these costs may be shared across stakeholders (e.g., member, insurer, government, etc.). We summarize our estimated 2020 costs in Figure 1, below:

Figure 1:
Estimated 2020 Medical Cannabis Costs PMPM
Commercial Insurance and Medicaid Markets

	Low	Medium	High
[A] Annual Sales Per User	$2,000	$4,100	$5,300
[B] Average Penetration Rate	1.04%	1.04%	1.04%
[C] Utilization Increase [1]	29.2%	29.2%	29.2%
[D] Estimated Cost PMPM [2]	**$2.20**	**$4.60**	**$5.90**

[1] Reflects utilization changes resulting from lower cost sharing

[2] [D] = ([A] x [B] x [C]) / 12

Figure 1 presents a range of potential costs based on actual state medical cannabis sales and patient data. To put these estimates into context, total gross prescription drug spend in the commercial insurance market is approximately $114 PMPM, per Milliman's Commercial 2020 Health Cost Guidelines™ (HCGs). Figure 2 summarizes costs for the top ten therapeutic classes in the commercial insurance market. A therapeutic class is a group of products used to treat similar conditions or symptoms (e.g., inflammation, diabetes, cancer).

Figure 2:
Estimated 2020 Prescription Drug Costs PMPM
Milliman Commercial 2020 HCGs

Therapeutic Class	Cost PMPM	Percent of Total
Autoimmune Agents	$20.20	18%
Anti-Diabetic Agents (Non-Insulin)	$8.90	8%
Antineoplastic Agents	$8.10	7%
Antiretrovirals	$6.20	5%
Multiple Sclerosis Agents	$5.60	5%
Topical Dermatologic Agents	$4.50	4%
Gastrointestinal Agents	$3.70	3%
Short/Intermediate Acting Insulins	$3.60	3%
Long Acting Insulins	$3.00	3%
Antidepressants	$2.50	2%
All Other Classes	$47.70	42%
Total	**$114.00**	**100%**
Medical Cannabis	**$2.20 - $5.90**	**2% - 5%**

As Figure 2 shows, we estimate medical cannabis would represent an increase in commercial prescription drug spend of between 2% and 5%. This magnitude would put it in line with gross costs for many of the top therapeutic classes shown above.

As an additional point of comparison, estimated costs for treatments in the hepatitis C virus (HCV) therapeutic class – a class familiar to many healthcare industry experts and policymakers in recent years – were about $2 to $3 PMPM in the commercial market in 2015 and 2016, after the first curative therapies were introduced.

Other Considerations

In most states with a medical cannabis program, patients must receive a diagnosis for a condition explicitly identified in statute

(i.e., qualifying condition) to receive legal access to medical cannabis. While the prevalence of qualifying conditions varies between the Medicaid and commercial markets, we estimate approximately 40% of the population across both markets has at least one qualifying condition. This estimate is based on an analysis of proprietary claims and enrollment data for over 40 million lives in the 2017 commercial and Medicaid markets. We identify diagnoses codes associated with each qualifying condition within the claims data based on clinical expertise. For purposes of this analysis, we consider a condition to be a qualifying condition if at least one state medical cannabis program today identifies it as such. The estimates in Figure 1 are presented in aggregate, but penetration rates of medical cannabis vary by condition. Results will vary by state depending on the list and prevalence of qualifying conditions in a given state.

There are many other factors which will contribute to the total cost of covering medical cannabis in either the Medicaid or commercial insurance markets. In particular, we do not consider the following potential cost impacts in our analysis:

- **Downstream Impacts on Healthcare Costs**: Medical cannabis products are not subject to the same protocols as FDA-approved drugs to test for product safety, efficacy, and batch-to-batch consistency. This presents risks and could lead to increased costs related to patient side effects or complications. While batch recalls are possible with FDA-approved drugs, there are procedures in place to protect against such risks. We do not reflect these potential additional costs in our analysis of medical cannabis coverage. We also do not contemplate potential cost savings, such as decreased utilization of prescription drugs due to the availability of cannabis as an alternative for some patients. Certain common qualifying conditions, such as chronic pain, are treated by lower cost generic medications, which would likely present limited opportunities for prescription drug savings. To the extent cannabis coverage opens the door to insurance coverage of other products without FDA approval, such as herbal drugs (e.g., kratom), psychedelics (e.g., psilocybin), or dietary supplements, these added costs are also not accounted for in our analysis.

- **Operational Costs**: Insurers may face costs associated with the initial start-up, ongoing administration, patient and clinician education, and medical equipment. These costs are not included in our estimates. Depending on the way in which medical cannabis coverage is mandated by the state and implemented by insurers (i.e., through the medical or pharmacy benefit), these operational costs could vary significantly.

- **Future Price Changes**: Medical cannabis prices may change from today's market once they are covered under insurance. Insurers may contract with dispensaries for lower than market rates; however, dispensaries and other companies in the medical cannabis industry may also increase prices to cover additional costs associated with integrating into insurer claim systems and complying with the 2013 Drug Supply Chain Security Act. This act establishes an electronic, interoperable system to identify and trace certain prescription drugs as they are distributed in the United States and enhances the FDA's ability to protect consumers from exposure to drugs that may be counterfeit, stolen, contaminated, or otherwise harmful.[1]

Introducing medical cannabis to the insurance market presents operational and clinical challenges. If covered under the pharmacy benefit, insurers and/or pharmacy benefit managers will need to determine how to coordinate with dispensaries and bring them into the existing complex pharmaceutical supply chain. Plans will need to determine how to make coverage and utilization management decisions, which is difficult given the lack of randomized clinical trials to examine the medical validity and safety of dispensary products. This type of information is used to inform access and reimbursement decisions under traditional insurance coverage, and it does not exist in today's medical cannabis market.

We recognize medical cannabis – and cannabis, more broadly – is a passionately debated topic among many individuals with different points of view. There are myriad considerations related to medical cannabis, and to the extent possible, we limit our discussion to only those topics most relevant to insurance coverage. *Please note that we are not attorneys or policy experts, and the information provided in this report should be supplemented by legal and policy experts to understand and interpret the legal and regulatory nuances of the issues discussed herein.*

Methodology

To develop the cost estimates presented here, we rely on publicly available information, primarily sourced from state-reported cannabis sales and patient data. We leverage independent sources to provide low, medium, and high annual sales levels per patient. We determined what level of sales constituted each of these three points, based on an examination of multiple state reports and studies. The low sales level relies on data from the state of Oregon; the moderate sales level relies on data from the state of Colorado; and the high sales level relies on the results of an analysis of national consumer data by New Frontier Data.[2,3,4,5,6] We adjust all three estimates to a 2020 basis.

We extrapolate these sales estimates across the entire population by considering the percentage of the population which uses medical cannabis (i.e., the medical cannabis penetration rate). We rely on patient counts by condition reported by state medical cannabis programs to estimate this penetration rate.

We also develop and apply a utilization adjustment to account for how utilization of medical cannabis may increase relative to today's environment. This adjustment is made of two primary components – induced utilization and pent-up demand. Induced utilization captures the increase in legitimate medical cannabis utilization as a result of becoming lower cost to the patient under an insurance benefit. Pent-up demand, on the other hand, captures the influx of patients into the insurance market who otherwise do not need cannabis for medical purposes.

Figure 1, above, illustrates how we combine these three elements to form a range of estimated medical cannabis costs PMPM for 2020. Please refer to our full report for additional details.

Caveats and Limitations

The authors of this report are actuaries for Milliman, Inc. They are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. To the best of their knowledge and belief, this information is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices.

The material in this report represents the opinion of the authors and is not representative of the views of Milliman. As such, Milliman is not advocating for, or endorsing, any specific policy changes related to medical cannabis coverage in the commercial, Medicaid, or other insurance markets. The authors are not lawyers and nothing within this report should be considered legal advice.

Greenwich Biosciences (Greenwich) may share this report with third parties in its entirety, subject to the terms of our Consulting Services Agreement (dated May 6, 2019) and our Statement of Work (dated March 6, 2020). Milliman does not intend to benefit and assumes no duty of liability to other parties that receive this work product. Any third party recipient of this work product that desires professional guidance should not rely upon Milliman's work product but should engage qualified professionals for advice appropriate to their own specific needs.

This report is designed to provide a summarized quantitative analysis and qualitative discussion around the coverage of medical cannabis in the commercial insurance and Medicaid markets. The methodology discussed is intended to be representative of approaches insurers may employ to evaluate the various impacts of medical cannabis coverage and is by no means prescriptive. In preparing this information, we relied on a proprietary claims database, as well as many public sources. To the extent this information is inaccurate or incomplete, our conclusions may change.

Actual outcomes will vary from the estimates provided in this report for a number of reasons, including, but not limited to changes in the legislative and regulatory environment, continuing clinical research, and other market forces impacting the medical cannabis and pharmaceutical markets.

[1] Pew Charitable Trusts (July 17, 2014). New Law Helps Protect Patients From Counterfeit Drugs and Other Risks. Retrieved February 25, 2020, from https://www.pewtrusts.org/en/research-and-analysis/fact-sheets/2014/07/new-law-protects-patients.

[2] Oregon Health Authority (January 2017). The Oregon Medical Marijuana Program: Statistical Snapshot. Retrieved February 25, 2020, from https://www.oregon.gov/oha/PH/DISEASESCONDITIONS/CHRONICDISEASE/MEDICALMARIJUANAPROGRAM/Documents/OMMP_Statistic_Snapshot_01-2017.pdf.

[3] Oregon Health Authority (2016). The Oregon Medical Marijuana Program: Dispensary Sales Report. Retrieved February 25, 2020, from https://www.oregon.gov/oha/PH/DISEASESCONDITIONS/CHRONICDISEASE/MEDICALMARIJUANAPROGRAM/Documents/2016OMMPMedicalMarijuanaDispensarySalesReport.pdf.

[4] New Frontier Data. The U.S. Cannabis Report: 2019 Industry Outlook, p. 23.

[5] State of Colorado (July 2018). Medical Marijuana Registry Program Statistics. Retrieved February 25, 2020, from https://www.colorado.gov/pacific/sites/default/files/CHED_MMR_Monthly_Report-July-2018.pdf.

[6] New Frontier Data. The Cannabis Industry 2017 Annual Report, p. 70. Retrieved February 25, 2020, from https://newfrontierdata.com/annualreport2017 (subscription required).