

Maryland HB 1137: Coronary Artery Calcium (CAC) Score Testing Bill Analysis

Prepared for Maryland Health Care Commission

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Agenda

- Bill Summary
- Medical Background
- Social Impact
- Financial Estimates

Summary of House Bill 1137

House Bill 1137 (HB 1137) requires the following, summarized from the bill text:

- 1) Maryland Medical Assistance Program to cover Calcium Score testing for individuals with at least three of the following risk factors:
 - i. Diabetes
 - ii. High Blood Pressure
 - iii. High Cholesterol
 - iv. A Family History of Premature Coronary Artery Disease

Medical Background

1

Atherosclerotic cardiovascular disease (ASCVD)

ASCVD is a heterogenous group of conditions caused by the buildup of atheromatous plaque in the arterial walls and includes coronary heart disease, cerebrovascular disease, peripheral artery disease, and aortic atherosclerotic disease.

American Heart Association. (2024, September). Atherosclerotic cardiovascular disease (ASCVD). Retrieved from Heart.org: <https://www.heart.org/en/professional/quality-improvement/ascvd>

Arnett, D. K., Blumenthal, R. S., Albert, M. A., Buroker, A. B., Goldberger, Z. D., Hahn, E. J., . . . Ziaeian, B. (2019). 2019 ACC/AHA Guideline on the Primary Prevention of Cardiovascular Disease: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Circulation*, 140(11). doi:10.1161/cir.0000000000000678

2

Coronary Artery Calcium (CAC)

CAC is the use of computed tomography (CT) scanning to detect atheroma plaque calcification in coronary arteries

3

Medical Community Usage

The American College of Cardiology (ACC) and American Heart Association (AHA) have incorporated CAC testing in their joint guidelines as part of risk assessment and to help guide treatment decisions of cardiovascular disease. In some situations, the ACC and AHA recommend the use of CAC testing to reclassify ASCVD risk and guide further discussion on the risks and benefits of initiating statin therapy.

Maryland Prevalence of at least 3 of 4 Risk Factors

Individual	Small Group	Fully Insured Large Group	State Health Plan	Medicaid
1.4%	1.2%	1.4%	2.7%	1.0%

1. Prevalence of the individual risk factors varies across demographics

- i. A study found that Black adults have a higher prevalence rate of hypertension than white, Hispanic, or Asian adults.
- ii. A different study found diabetes prevalence is higher in American Indian and Alaska native adults, followed by non-Hispanic Black adults, and lowest in non-Hispanic white adults.
- iii. High cholesterol is most prevalent in non-Hispanic Asian men, followed by non-Hispanic white women, and is lowest among non-Hispanic Black men.

i. Aggarwal, R., Chiu, N., Wadhera, R. K., Moran, A. E., Raber, I., Shen, C., . . . Kazi, D. S. (2021). Racial/Ethnic Disparities in Hypertension Prevalence, Awareness, Treatment, and Control in the United States, 2013 to 2018. *Hypertension*, 78(6), 1719–1726. doi:10.1161/hypertensionaha.121.17570

ii. CDC. (2024, October). Appendix A: Detailed Tables, Table 3. Retrieved from cdc.gov: https://www.cdc.gov/diabetes/php/data-research/appendix.html#cdc_report_pub_study_section_3-table-3

Insurance Coverage for CAC Testing in Maryland

Individual	Small Group	Fully Insured Large Group	State Health Plan	Medicaid
81%	86%	61%	85%	59%

1. We surveyed insurance carriers in Maryland about current CAC test coverage and no carrier specifically stated that it uses the same criteria as outlined in the legislation.
2. Three out of five respondents indicated that CAC testing is covered for enrollees across all markets when following ACC and/or AHA guidelines. These carriers' policies are less restrictive than the proposed legislation and are compliant with HB 1137. The remaining two carriers were determined to have noncompliant coverage.

Public Demand for CAC Testing Through Literature

2021 Google Trend Study

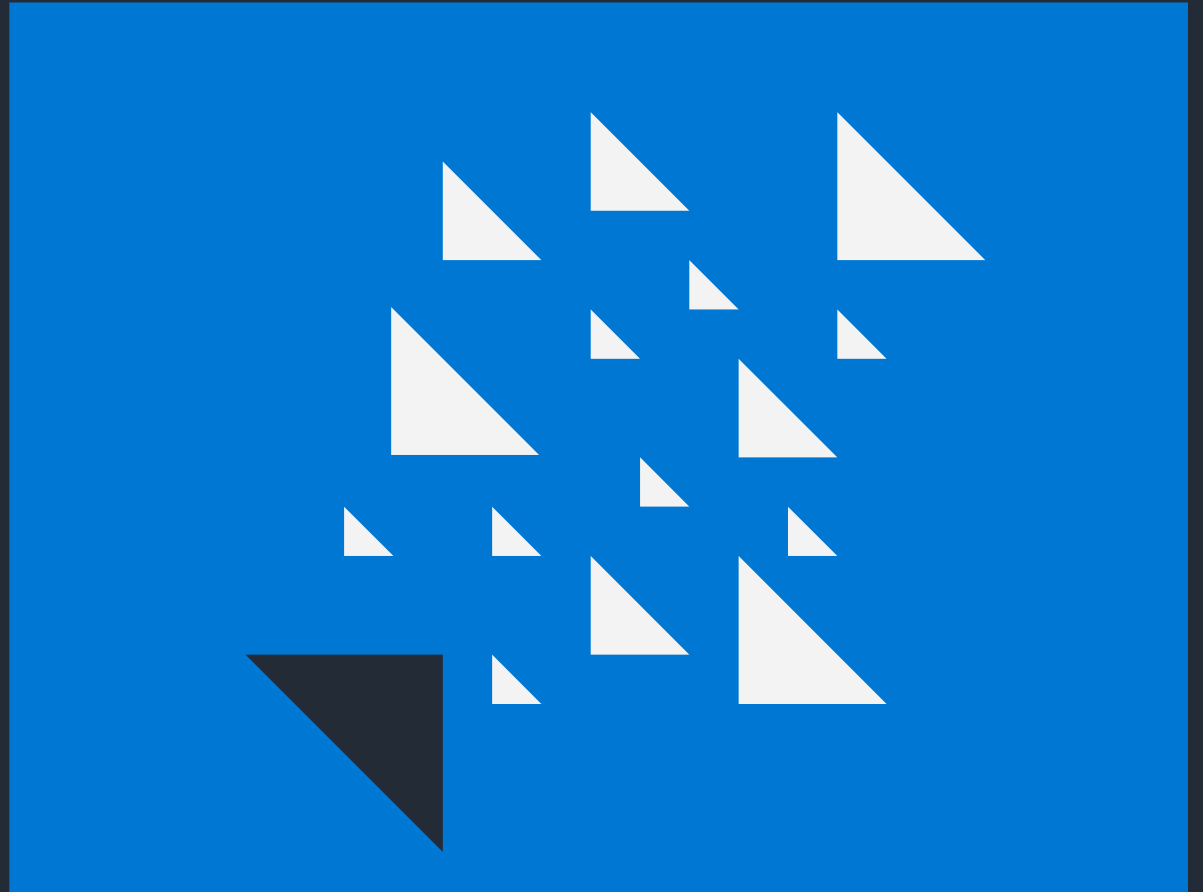
- Between 2004 and 2021 there was a 354.8% increase in search terms related to CAC testing. This does not indicate an interest in receiving a test, but there would be a positive correlation

A limitation to receiving CAC testing is cost

- A study showed that removing the cost barrier for CAC testing results in increased utilization.

Dzaye, O., Berning, P., Adelhoefer, S., Duebgen, M., Blankstein, R., Mahesh, M., . . . Blaha, M. (2021). Temporal Trends and Interest in Coronary Artery Calcium Scoring Over Time: An Infodemiology Study. *Mayo Clinic Proceedings: Innovations, Quality & Outcomes*, 5(2), 456–465. doi:10.1016/j.mayocpiqo.2021.02.010

Al-Kindi, S. G., Costa, M., Tashtish, N., Duriuex, J., Zidar, D., Rashid, I., . . . Rajagopalan, S. (2020). No-Charge Coronary Artery Calcium Screening for Cardiovascular Risk Assessment. *Journal of the American College of Cardiology*, 76(10), 1259–1262. doi:10.1016/j.jacc.2020.06.077



Financial Analysis Approach

Financial evaluation projections for the 2025 calendar year is estimated under two scenarios

1. Baseline – Proposed legislation does not go into effect
2. Post Mandate – Proposed legislation does go into effect.

The difference between the baseline and post mandate values is the impact of HB 1137

There are two scenarios for post mandate, a low and high based on key assumptions.



Key Assumptions

Assumption	Low	High
Public Demand/Coverage Awareness	+10% annual eligible users with baseline coverage	+100% annual eligible users with baseline coverage
Condition Coding Improvements	Prevalence Rate is the same as baseline	Prevalence rate is 4.2 times the baseline
Statin Therapy	25% of new CAC testing annual users	50% of new CAC testing annual users
Ischemic Cardiac Events Avoided		
1. Acute Myocardial Infarctions	1.5 annual infarctions avoided per 1,000 new statin therapy users	2.0 annual infarctions avoided per 1,000 new statin therapy users
2. Coronary Revascularization Surgery	0.5 annual procedures avoided per 1,000 new statin therapy users	0.75 annual procedures avoided per 1,000 new statin therapy users
3. Ischemic Heart Disease Related Emergency Department (ED) Visits	1.0 annual ED visits avoided per 1,000 new statin therapy users	1.5 annual ED visits avoided per 1,000 new statin therapy users

Estimated Count of Enrollees who use Coronary Artery Calcium (CAC) Test Low Scenario

	INDIVIDUAL	SMALL GROUP	FULLY INSURED LARGE GROUP	TOTAL FULLY INSURED COMMERCIAL	STATE HEALTH PLAN	MEDICAID
Enrollees with three of four ASCVD Risk Factors	3,960	2,580	6,390	12,940	5,660	16,390
Users of CAC testing at Baseline	50	40	40	130	50	40
Users of CAC Testing Post Mandate	70	50	80	200	70	80
Change in Users of CAC Testing	20	10	40	70	20	40
% Change in Users of CAC Testing	40%	25%	100%	54%	40%	100%

Estimated Count of Enrollees who use Coronary Artery Calcium (CAC) Test High Scenario

	INDIVIDUAL	SMALL GROUP	FULLY INSURED LARGE GROUP	TOTAL FULLY INSURED COMMERCIAL	STATE HEALTH PLAN	MEDICAID
Enrollees with three of four ASCVD Risk Factors	3,960	2,580	6,390	12,940	5,660	16,390
Users of CAC testing at Baseline	50	40	40	130	50	40
Users of CAC Testing Post Mandate	370	260	460	1,090	350	470
Change in Users of CAC Testing	320	220	420	960	300	430
% Change in Users of CAC Testing	640%	550%	1050%	738%	600%	1075%

Cost per CAC Test

Baseline

Users with coverage

- \$120 - \$130 for fully insured commercial plans
- \$130 for state health plan
- \$50 for Medicaid

The cost comes from the Maryland All Payers Database trended to 2026. The post mandate costs remain the same across new users post mandate and users at baseline.

Post Mandate

Users with coverage at baseline

- \$120 - \$130 for fully insured commercial plans
- \$130 for state health plan
- \$50 for Medicaid

New Users

- Same as post mandate users with coverage at baseline

Expected Cost for Statin Therapy and Avoided Ischemic Cardiac Events

1. We expect 25% - 50% of new post-mandate CAC test takers will begin statin therapy as a result of CAC testing.
2. We expect new statin therapy users to avoid ischemic cardiac events.

SERVICE	FULLY INSURED COMMERCIAL	STATE HEALTH PLAN	MEDICAID
Annual statin therapy	\$260 - \$300	\$520	\$140
Acute myocardial infarctions	\$42,700 - \$43,000	\$29,100	\$11,500
Coronary revascularization surgeries	\$43,300 - \$63,700	\$39,000	\$15,400
Ischemic heart disease-related ED visits	\$17,100 - \$18,400	\$17,200	\$6,800

Commercial Premium and Medicaid Cost Increase due to HB 1137 Low Scenario

	INDIVIDUAL	SMALL GROUP	FULLY INSURED LARGE GROUP	TOTAL FULLY INSURED COMMERCIAL	STATE HEALTH PLAN	MEDICAID
PMPM Increase due to HB 1137	\$0.001	\$0.000	\$0.001	\$0.001	\$0.002	\$0.000
PMPY Increase due to HB 1137	\$0.009	\$0.006	\$0.011	\$0.009	\$0.019	\$0.002
Total Increase due to HB 1137	\$2,000	\$2,000	\$5,000	\$9,000	\$4,000	\$3,000

Commercial Premium and Medicaid Cost Increase due to HB 1137 High Scenario

	INDIVIDUAL	SMALL GROUP	FULLY INSURED LARGE GROUP	TOTAL FULLY INSURED COMMERCIAL	STATE HEALTH PLAN	MEDICAID
PMPM Increase due to HB 1137	\$0.015	\$0.011	\$0.011	\$0.012	\$0.041	\$0.002
PMPY Increase due to HB 1137	\$0.180	\$0.128	\$0.136	\$0.147	\$0.494	\$0.025
Total Increase due to HB 1137	\$51,000	\$28,000	\$61,000	\$140,000	\$103,000	\$42,000

Considerations and Limitations

- Usage of CAC testing typically follows ACC and AHA guidelines and we do not expect usage post-mandate to follow the coverage criteria under HB 1137. We assumed coverage guidelines that follow ACC/AHA guidelines at baseline are compliant with HB 1137 at baseline.
- To identify enrollees with diabetes, high blood pressure, high cholesterol, or a family history of premature coronary artery disease, we excluded claims related to diagnostic imaging and lab tests, as diagnosis codes on claims for those service categories are typically unreliable for medical condition identification. Due to claim quality and quantity requirements, our estimates for the number of enrollees eligible for CAC testing under HB 1137 may be understated.
- Due to low usage of both CAC testing for covered and eligible enrollees and subsequent statin therapy, as well as low avoidance rates for ischemic cardiac events, we calculate less than one avoided event annually for each event type.

Caveats

- Differences between our estimates and actual amounts depend on the extent to which future experience conforms to the assumptions made in this model. It is almost certain that actual experience will not conform exactly to the assumptions used in this model. Actual amounts will differ from projected amounts to the extent that actual experience is better or worse than expected
- Milliman has developed certain models to estimate the values included in this report. The intent of the models was to estimate the impact of bill HB 1137. We have reviewed this model, including its inputs, calculations, and outputs for consistency, reasonableness, and appropriateness to the intended purpose and in compliance with generally accepted actuarial practice and relevant actuarial standards of practice (ASOP).
- The models rely on data and information as input to the models. We have relied upon certain data and information for this purpose and accepted it without audit. To the extent that the data and information provided is not accurate, or is not complete, the values provided in this report may likewise be inaccurate or incomplete. Milliman's data and information reliance includes: data from Maryland's All Payer Claims Database, US Census data and projections, and all other sources mentioned inline and in references, including survey and studies.
- The models, including all input, calculations, and output may not be appropriate for any other purpose.
- We have performed a limited review of the data used directly in our analysis for reasonableness and consistency and have not found material defects in the data. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our investigation.

Caveats (continued)

- Guidelines issued by the American Academy of Actuaries require actuaries to include their professional qualifications in all actuarial communications. One of the developers of this model and presenter, Casey Hammer, is a member of the American Academy of Actuaries and meets the qualification standards for performing the analyses supported by this model.
- Milliman does not intend to benefit any third-party recipient of its work product and assumes no duty or liability to other parties who receive this work.



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