The Hilltop Institute

# Required Coverage for Biomarker Testing – Commercial Market

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Maryland Health Care Commission
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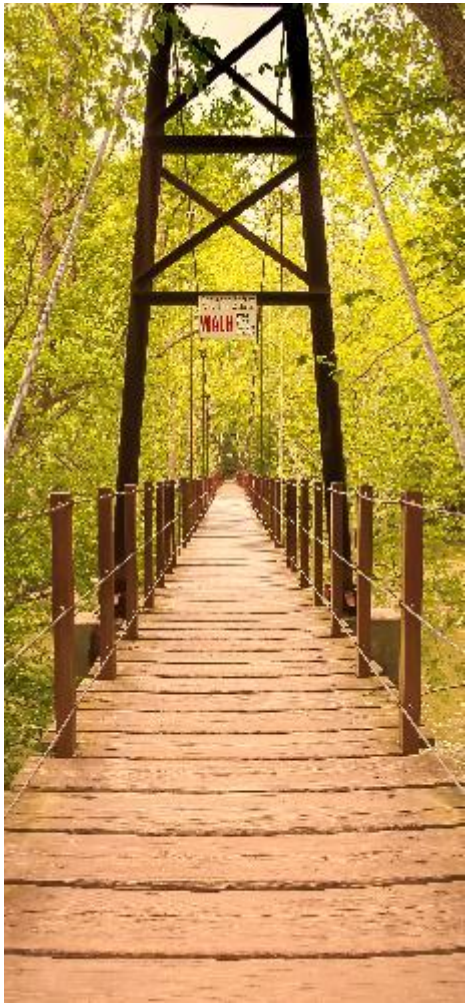

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# Agenda

- Introduction and Background
- Survey Results
- Biomarker Testing Utilization
- Financial Modeling

# Introduction and Background

# Introduction

- Maryland law broadly defines a biomarker as:
  - "A characteristic that is objectively measured and evaluated as an indicator of normal biological processes, pathogenic processes, or pharmacologic responses to a specific therapeutic intervention…[and] includes gene mutations, characteristics of genes, or protein expression."
- Providers use biomarker tests to:
  - Check for gene or chromosome changes that impact risk of developing a disease
  - Help plan treatment
  - Determine the impact a treatment is having
  - Make prognoses

# Study Requirement

- 2023 legislation expanded biomarker testing coverage in Maryland:
  - State-regulated commercial health insurance plans required to cover beginning January 1, 2024
  - Maryland Medicaid coverage phased in beginning in August 2023
- The Maryland Health Care Commission (MHCC) required to report on "the impact of providing access to biomarker testing to individuals based on race, gender, age, and public or private insurance" in December 2025.
- Medicaid was required to submit a similar study in 2024.
- Hilltop supported Medicaid and MHCC on both studies.

# Coverage in Other States

- 18 states, including Maryland, require coverage for all state-regulated plans
- 4 states have narrower laws (applying to certain plans only)
- Recent expansions: Connecticut and New Jersey

# Survey Results

# Carrier Survey Overview

- Designed in collaboration with MHCC, with feedback from the Maryland Insurance Administration
- Five commercial carriers in Maryland
  - Largest PPO and HMO
- Four carriers responded
- Questions about:
  - Utilization of biomarker tests
  - Associated costs
  - Utilization review

# Carrier Survey Findings

- All carriers apply some form of review for biomarkers (prior authorization most common)
- Claims data (January 2024–June 2025):
  - # of claims per carrier varied widely
  - 1 carrier reported no claims
  - 23.3% of claims denied (reasons: medical necessity, documentation, out-of-network)
- Wide variation in average tests costs by carrier and disease category (e.g., average cost for cancer tests ranged from $99-$1,490)

# Biomarker Testing Utilization

# Utilization of Biomarker Testing

- Analyzed CY 2024 All-Payer Claims Database (APCD)
  - Large group, fully insured
  - State employees/retirees
- Grouped biomarker tests into 7 disease categories
- 7,147 large group enrollees tested ($3.2M)
- 5,659 state employee enrollees tested ($2.5M)

# Utilization by Gender

- Females accounted for about 68% of biomarker test utilizers in both markets and about 75% of total claims costs.
- Average cost per female utilizer was higher than for males in both markets.

| Gender | # Enrollees with Biomarker Test | % Enrollees with Biomarker Test | Claims Cost | % Claims Costs |
|---|---|---|---|---|
| **Commercial, Large Group, Fully Insured** | | | | |
| Missing/Unknown | * | * | $3,950 | 0.1% |
| Female | 4,866 | 68.2% | $2,374,693 | 74.8% |
| Male | * | * | $801,228 | 25.2% |
| **Total** | **7,147** | **100%** | **$3,179,871** | **100%** |
| **Commercial, State of Maryland** | | | | |
| Missing/Unknown | 0 | 0.0% | $0 | 0.0% |
| Female | 3,885 | 68.7% | $1,917,642 | 75.3% |
| Male | 1,774 | 31.3% | $630,649 | 24.7% |
| **Total** | **5,659** | **100%** | **$2,548,291** | **100%** |

# Utilization by Age

- Adults aged 40-64 accounted for the largest share of biomarker testing (about 55% in both markets) and about 58% of total claims costs in both markets.

| Age Group | # Enrollees with Biomarker Test | % Enrollees with Biomarker Test | Claims Cost | % Claims Costs |
|---|---|---|---|---|
| **Commercial, Large Group, Fully Insured** | | | | |
| 0-1 | 71 | 1.0% | $22,367 | 0.7% |
| 2-5 | 42 | 0.6% | $30,066 | 0.9% |
| 6-20 | 410 | 5.7% | $74,218 | 2.3% |
| 21-39 | 2,278 | 31.9% | $985,878 | 31.0% |
| 40-64 | 3,826 | 53.5% | $1,842,619 | 57.9% |
| 65+ | 520 | 7.3% | $224,723 | 7.1% |
| **Total** | **7,147** | **100%** | **$3,179,871** | **100%** |
| **Commercial, State of Maryland** | | | | |
| 0-1 | 23 | 0.4% | $8,495 | 0.3% |
| 2-5 | 42 | 0.7% | $19,462 | 0.8% |
| 6-20 | 307 | 5.4% | $84,493 | 3.3% |
| 21-39 | 1,079 | 19.1% | $591,087 | 23.2% |
| 40-64 | 3,123 | 55.2% | $1,489,653 | 58.5% |
| 65+ | 1,085 | 19.2% | $355,101 | 13.9% |
| **Total** | **5,659** | **100%** | **$2,548,291** | **100%** |

# Utilization by Race

| Race/Ethnicity | Utilizers/ Participants | % | Claims Cost | % | Cost/ Utilizer | Total Market (Large Group Fully Insured or State of Maryland) | | | Uptake |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Total | % | Difference in Share of Utilizers vs. of Total Market | |
| **Large Group, Fully Insured** | | | | | | | | | |
| White | 3,220 | 45.1% | $1,433,301 | 45.1% | $445 | 141,043 | 28.8% | 16.3% | 2.3% |
| Missing/Other/Unknown | 2,555 | 35.7% | $1,076,455 | 33.9% | $421 | 238,367 | 48.6% | -12.9% | 1.1% |
| Black | 827 | 11.6% | $420,453 | 13.2% | $508 | 68,166 | 13.9% | -2.3% | 1.2% |
| Hispanic | 312 | 4.4% | $119,277 | 3.8% | $382 | 25,162 | 5.1% | -0.8% | 1.2% |
| Asian | 194 | 2.7% | $112,862 | 3.5% | $582 | 14,223 | 2.9% | -0.2% | 1.4% |
| Two or More Races | 26 | 0.4% | $13,379 | 0.4% | $515 | 1,910 | 0.4% | 0.0% | 1.4% |
| Native American/Alaskan | * | * | $3,969 | 0.1% | * | 874 | 0.2% | * | * |
| Pacific Islander/Native Hawaiian | * | * | $175 | 0.0% | * | 572 | 0.1% | * | * |
| **Total** | **7,147** | **100%** | **$3,179,871** | **100%** | **$445** | **490,317** | **100%** | **0.0%** | **1.5%** |
| **State Employees** | | | | | | | | | |
| White | 3,427 | 58.2% | $1,519,211 | 59.6% | $443 | 134,109 | 51.6% | 6.6% | 2.6% |
| Black | 1,401 | 26.8% | $678,986 | 26.6% | $485 | 71,338 | 27.4% | -0.6% | 2.0% |
| Missing/Other/Unknown | 386 | 6.5% | $139,301 | 5.5% | $361 | 34,396 | 13.2% | -6.8% | 1.1% |
| Asian | 214 | 4.1% | $110,018 | 4.3% | $514 | 10,142 | 3.9% | 0.2% | 2.1% |
| Hispanic | 175 | 3.3% | $84,595 | 3.3% | $483 | 7,299 | 2.8% | 0.5% | 2.4% |
| Two or More Races | 43 | 0.7% | $15,279 | 0.6% | $355 | 1,613 | 0.6% | 0.1% | 2.7% |
| Native American/Alaskan | * | * | $737 | 0.0% | * | 691 | 0.3% | * | * |
| Pacific Islander/Native Hawaiian | * | * | $164 | 0.0% | * | 311 | 0.1% | * | * |
| **Total** | **5,659** | **100%** | **$2,548,291** | **100%** | **$450** | **259,899** | **100%** | **0.0%** | **2.2%** |

1. For large group (LG), out of the total population, White enrollees have the highest uptake at 2.3%.
2. For the state employees, Whites have the highest uptake at 2.6%.
3. The “Missing/Other/Unknown” category is 35.7% for LG (only 6.5% for the state employees).
4. Asian enrollees have the highest cost per utilizer in both markets.

# Utilization by Race by Prevalence in LG Fully Insured Market

1. Overall, the testing percentage was 2.8% for Blacks vs. 4.4% for Whites (3.5% for Hispanics).
2. Although Behavioral Health is amongst the most prevalent, it was the least tested for both Blacks & Whites.
3. Cancer was tested for 37.8% of Blacks vs. 66.0% for Whites.

| Disease Category | Prevalence/ Treated for Disease | % Distribution | Unique Testers | Got a Biomarker Test | % Distribution | # of Tests | Tests PMPY | Biomarker Test Cost | % Tested | Aggregate Testing Cost |
|---|---|---|---|---|---|---|---|---|---|---|
| **White Participants** | | | | | | | | | | |
| Autoimmune | 3,317 | 4.1% | N/A | 733 | 20.7% | 850 | 1.16 | $29 | 22.1% | $24,225 |
| Behavioral | 30,223 | 37.4% | N/A | 35 | 1.0% | 35 | 1.00 | $632 | 0.1% | $22,123 |
| Cancer | 2,815 | 3.5% | N/A | 1,857 | 52.5% | 3,515 | 1.89 | $284 | 66.0% | $998,253 |
| Cardiovascular | 8,915 | 11.0% | N/A | 197 | 5.6% | 374 | 1.90 | $8 | 2.2% | $2,846 |
| ECT | 0 | 0.0% | N/A | 384 | 10.9% | 406 | 1.06 | $850 | N/A | $345,031 |
| Infectious | 773 | 1.0% | N/A | 126 | 3.6% | 134 | 1.06 | $215 | 16.3% | $28,745 |
| Kidney | 1,837 | 2.3% | N/A | 17 | 0.5% | 17 | 1.00 | $146 | 0.9% | $2,475 |
| Metabolic | 32,904 | 40.7% | N/A | 187 | 5.3% | 254 | 1.36 | $38 | 0.6% | $9,601 |
| **Total** | **80,784** | **100%** | **3,220** | **3,536** | **100%** | **5,585** | **1.58** | **$257** | **4.4%** | **$1,433,299** |
| **Black Participants** | | | | | | | | | | |
| Autoimmune | 1,160 | 3.6% | N/A | 161 | 17.6% | 194 | 1.20 | $32 | 13.9% | $6,278 |
| Behavioral | 6,747 | 21.0% | N/A | * | * | * | 1.00 | $254 | * | $1,521 |
| Cancer | 1,243 | 3.9% | N/A | 470 | 51.4% | 937 | 1.99 | $303 | 37.8% | $283,549 |
| Cardiovascular | 3,126 | 9.7% | N/A | 75 | 8.2% | 129 | 1.72 | $119 | 2.4% | $15,355 |
| ECT | 0 | 0.0% | N/A | 113 | 12.3% | 121 | 1.07 | $824 | N/A | $99,689 |
| Infectious | 1,051 | 3.3% | N/A | 49 | 5.4% | 60 | 1.22 | $197 | 4.7% | $11,814 |
| Kidney | 1,597 | 5.0% | N/A | * | * | * | 1.00 | $0 | * | $0 |
| Metabolic | 17,202 | 53.5% | N/A | 39 | 4.3% | 64 | 1.64 | $35 | 0.2% | $2,246 |
| **Total** | **32,126** | **100%** | **827** | **915** | **100%** | **1,513** | **1.65** | **$278** | **2.8%** | **$420,453** |

# Financial Modeling

# Financial Modeling: Assumptions

- Calculated average total participants: CY 2024 trended through CY 2030
- Identified eligible participants with diagnosis codes for the 7 disease categories of interest
- Calculated CY 2024 uptake and assumed gradual increases up to 20% by CY 2030
- Calculated average cost per test in CY 2024 and trended forward at 10.8%

# Financial Modeling Results

- Modeled the estimated costs of biomarker testing through CY 2030
- Total funds for CY 2024-CY 2030 are estimated to be:
  - $239 million for the LG fully insured
  - $149 million for the state employee market

# Estimated Fiscal Impact of Expanded Coverage of Biomarker Testing, CY 2024–CY 2030

| | Actual CY 2024 | CY 2025 | CY 2026 | CY 2027 | CY 2028 | CY 2029 | CY 2030 | Total Funds |
|---|---|---|---|---|---|---|---|---|
| | **Commercial, Large Group (Fully Insured)** | | | | | | | |
| Cancer | $2,067,467 | $5,006,151 | $8,723,415 | $13,379,147 | $19,162,667 | $26,297,833 | $35,048,982 | $109,685,662 |
| Behavioral Health | $64,317 | $1,503,969 | $3,343,451 | $5,666,217 | $8,571,215 | $12,175,579 | $16,617,783 | $47,942,531 |
| Metabolic | $28,766 | $137,753 | $276,545 | $451,331 | $669,444 | $939,565 | $1,271,950 | $3,775,354 |
| Infectious Disease | $63,083 | $407,418 | $846,459 | $1,399,908 | $2,091,119 | $2,947,735 | $4,002,422 | $11,758,144 |
| Autoimmune | $61,788 | $199,657 | $374,736 | $594,718 | $868,714 | $1,207,503 | $1,623,821 | $4,930,936 |
| Kidney | $4,491 | $236,555 | $533,184 | $907,861 | $1,376,574 | $1,958,253 | $2,675,272 | $7,692,190 |
| Cardiovascular | $38,368 | $178,177 | $356,193 | $580,345 | $860,033 | $1,206,379 | $1,632,527 | $4,852,022 |
| **Total** | **$2,328,279** | **$7,669,681** | **$14,453,984** | **$22,979,526** | **$33,599,766** | **$46,732,847** | **$62,872,757** | **$190,636,839** |
| ECT | $834,949 | $2,161,303 | $3,840,970 | $5,946,643 | $8,564,414 | $11,796,091 | $15,761,910 | $48,906,280 |
| **Grand Total** | **$3,163,227** | **$9,830,984** | **$18,294,954** | **$28,926,169** | **$42,164,180** | **$58,528,937** | **$78,634,667** | **$239,543,119** |
| | **State of Maryland** | | | | | | | |
| Cancer | $1,909,569 | $3,324,463 | $5,065,877 | $7,193,665 | $9,777,589 | $12,898,858 | $16,651,912 | $56,821,933 |
| Behavioral Health | $33,600 | $776,532 | $1,706,328 | $2,858,303 | $4,273,713 | $6,000,680 | $8,095,280 | $23,744,437 |
| Metabolic | $10,157 | $171,967 | $374,432 | $625,230 | $933,335 | $1,309,211 | $1,765,052 | $5,189,383 |
| Infectious Disease | $55,127 | $266,856 | $531,116 | $857,789 | $1,258,413 | $1,746,446 | $2,337,565 | $7,053,311 |
| Autoimmune | $57,796 | $158,269 | $283,166 | $437,049 | $625,244 | $853,958 | $1,130,418 | $3,545,899 |
| Kidney | $6,060 | $184,845 | $408,630 | $685,922 | $1,026,659 | $1,442,433 | $1,946,751 | $5,701,299 |
| Cardiovascular | $24,427 | $72,468 | $132,237 | $205,931 | $296,109 | $405,759 | $538,357 | $1,675,288 |
| **Total** | **$2,096,735** | **$4,955,400** | **$8,501,785** | **$12,863,890** | **$18,191,062** | **$24,657,345** | **$32,465,334** | **$103,731,551** |
| ECT | $482,080 | $1,823,576 | $3,495,783 | $5,560,782 | $8,091,053 | $11,171,108 | $14,899,380 | $45,523,761 |
| **Grand Total** | **$2,578,815** | **$6,778,976** | **$11,997,568** | **$18,424,672** | **$26,282,114** | **$35,828,453** | **$47,364,714** | **$149,255,313** |

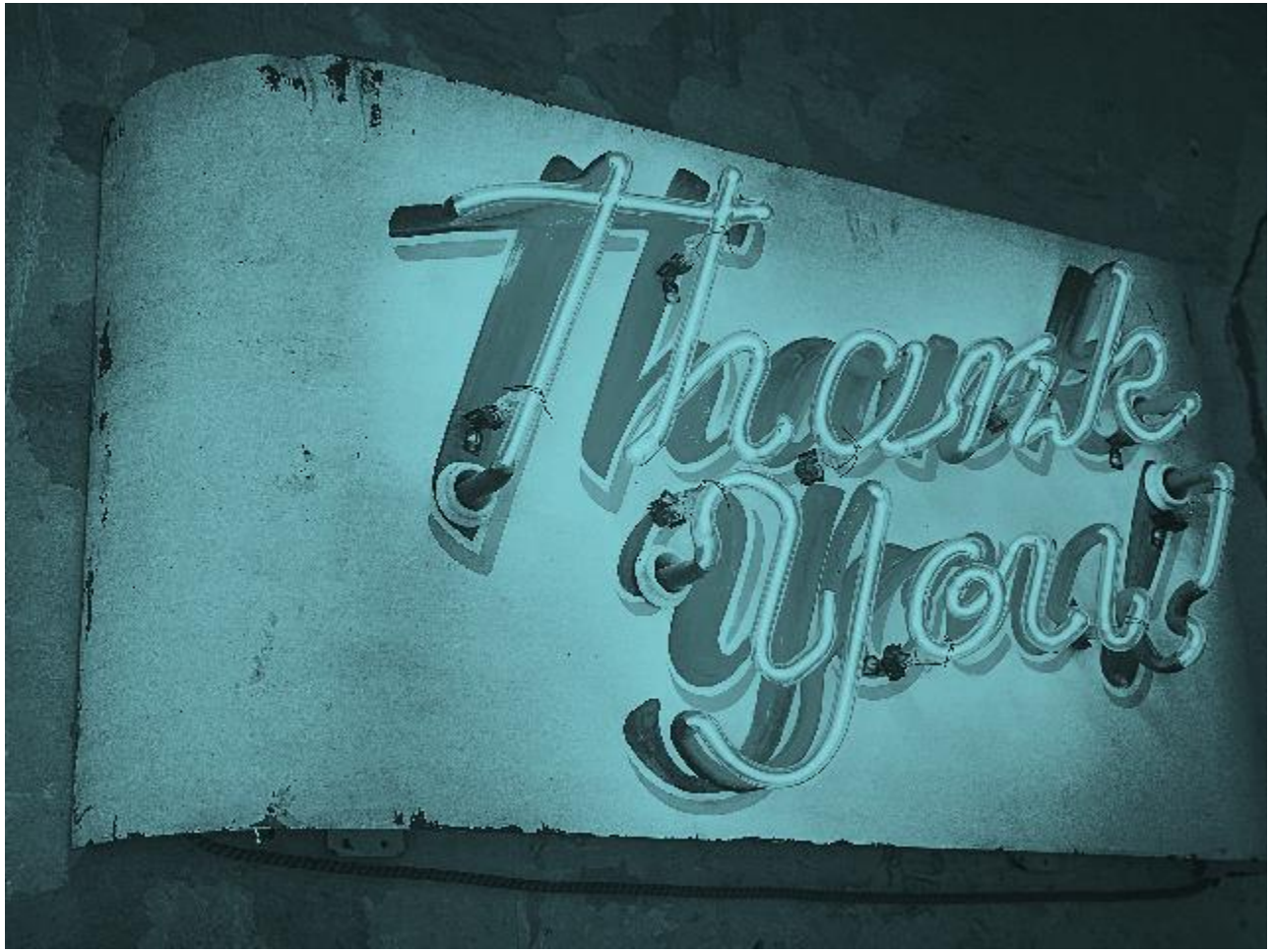
# Financial Modeling Results: Medicaid

- Compared to prior estimates for Medicaid
- For CY 2026-2029
  - $359 million for Medicaid
  - $148 million for LG fully insured
  - $92 million for state employees

# Conclusions

- Biomarker coverage expansion potentially enables early detection of disease for 31% of the LG market and 48% of the state employee market.
- The biomarker definition is broad and may be subject to interpretation by the carriers.
- These findings are based on a single year of experience data and on several assumptions regarding uptake, cost trends, and coding practices.
- Ongoing monitoring recommended as more data become available.

# Questions & Discussion



# About Hilltop

The Hilltop Institute is a nonpartisan research organization at the University of Maryland, Baltimore County (UMBC) dedicated to improving the health and wellbeing of people and communities. We conduct cutting-edge data analytics and translational research on behalf of government agencies, foundations, and nonprofit organizations to inform public policy at the national, state, and local levels.

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