The Hilltop Institute
UMBC

report

Report pursuant to Chapters 322 and 323 of the Acts of 2023, Maryland Medical Assistance Program and Health Insurance – Required Coverage for Biomarker Testing

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Required Coverage for Biomarker Testing

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Executive Summary

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."[1] Biomarker testing may be used for the purposes of diagnosis, treatment, appropriate management, or ongoing monitoring of a disease. Biomarker testing includes tests that are single-analyte tests, multiplex panel tests, protein expression, and whole exome, whole genome, and whole transcriptome sequencing. Currently, 18 states including Maryland have enacted laws requiring the coverage of biomarker testing for all state-regulated plans.[2] The Maryland General Assembly recently expanded coverage requirements for biomarking testing—requiring insurers, nonprofit health service plans, and health maintenance organizations to offer coverage beginning January 1, 2024. Coverage requirements for Medicaid were phased in, with expanded coverage effective July 1, 2025. This legislatively required report estimated the costs of this expanded coverage and examined utilization patterns.

Key Findings

- Defining biomarker tests: Biomarker tests are broadly defined in statute and may be subject to interpretation by insurance carriers. Data analysis in this report focused on proprietary tests that were unlikely to be covered prior to the statutory expansion.
- Financial impact: Estimated costs for expanded coverage for calendar years (CYs) 2026–2029 are $359 million for Medicaid, $148 million for the large group commercial market, and $92.5 million for the state employee market. The cost for the commercial market is significantly lower because legislation only requires coverage for the large group fully insured market. State law does not apply to large group self-insured (ERISA) plans, so these plans are not included in this report.
- Population reach: 31% of the large group market and 48% of the state employee market have disease categories for which biomarker testing is available, suggesting potential for early disease detection and improved outcomes.
- Utilization patterns: Actual uptake was low in the first year of expanded coverage. In 2024, only 3.8% of eligible large group enrollees received a biomarker test, with notable differences by disease category and demographic group. Cancer patients had the highest testing rates (56.7%), while metabolic and behavioral health categories saw minimal uptake (both <1%).

[1] MD Code Ann., Ins-Art §15–859(a)(2).
[2] Cancer Action Network. (2025, June). *Access to biomarker testing*. https://www.fightcancer.org/what-we-do/access-biomarker-testing.

- Demographic insights: Females and adults aged 40–64 are overrepresented among test utilizers and account for the majority of associated costs. Race/ethnicity data for the large group market was highly missing or unknown race (47%), which limits the ability to draw definitive conclusions about utilization patterns by race. Among available data, in both the commercial and state employee markets, White enrollees are overrepresented among biomarker test utilizers relative to their share of the insured population. Asian enrollees incurred the highest average costs.
    - For the highly prevalent disease category of metabolic (i.e., 45.0%), the testing percentage was 0.5% (Whites, Blacks, Hispanics, and "All Other" were 0.6%, 0.2%, 0.5%, and 0.6%).
    - For the highly prevalent disease category of behavioral health (i.e., 34.1%), the testing percentage was 0.1% (Whites, Blacks, Hispanics, and "All Other" were all 0.1%).
    - For the highly prevalent disease category of cardiovascular (i.e., 9.6%), the testing percentage was 2.5% (Whites, Blacks, Hispanics, and "All Other" were 2.2%, 2.4%, 3.0%, and 2.9%).
    - For the disease category of cancer (i.e., 3.2%), the testing percentage was 56.7% (Whites, Blacks, Hispanics, and "All Other" were 66.0%, 37.8%, 62.7%, and 55.0%)

Please note that this report is based on available data and assumptions about costs, enrollment, and take-up. The Maryland Health Care Commission may consider continuing to monitor utilization and updating these estimates as more data become available.

Required Coverage for Biomarker Testing

Introduction

As defined in §15–859 of the Maryland Insurance Article, a biomarker is "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."[3] Biomarker testing may be used for the purpose of diagnosis, treatment, appropriate management, or ongoing monitoring of a disease or condition. Biomarker testing includes tests that are single-analyte tests, multiplex panel tests, protein expression, and whole exome, whole genome, and whole transcriptome sequencing.[4] Health care providers may use biomarker tests to check for gene or chromosome changes that impact one's risk of developing a disease, to help plan treatment for a patient, to determine the impact a treatment is having, and to make prognoses.[5] Commonly used in cancer treatment, the tests give specialists information that can be used to determine if a patient's cancer is likely to grow and spread, which cancer treatments are likely to be helpful and which will be unhelpful, and whether a patient's cancer may be returning. When used alongside biopsies, the tests can help determine whether a patient has a particular type of cancer.[6]

In 2023, the Maryland General Assembly passed Chapters 322 and 323 of the Acts of 2023, Maryland Medical Assistance Program and Health Insurance – Required Coverage for Biomarker Testing (Senate Bill (SB) 805/House Bill (HB) 1217). This bill required insurers, nonprofit health service plans, and health maintenance organizations (HMOs) to provide coverage for "biomarker testing" for the purpose of diagnosis, treatment, appropriate management, or ongoing monitoring of a disease or condition that is supported by medical and scientific evidence beginning January 1, 2024.[7] This requirement was expanded to include Medicaid starting on July 1, 2025. Maryland Medicaid previously only covered certain cancer screening tests that fell under the definition of biomarkers, such as Cologuard for colorectal cancer screening, and then expanded coverage of biomarker testing to include cancer biomarker tests that are used as a companion diagnostic test to direct specific cancer treatments effective August 1, 2023.[8]

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[3] MD Code Ann., Ins-Art §15–859(a)(2).
[4] MD Code Ann., Ins-Art §15–859(a)(3)(ii).
[5] National Cancer Institute. *NCI dictionary of cancer terms: Biomarker testing*. https://www.cancer.gov/publications/dictionaries/cancer-terms/def/biomarker-testing
[6] American Cancer Society. (2022, September). *Biomarker tests and cancer treatment*. https://www.cancer.org/cancer/diagnosis-staging/tests/biomarker-tests.html
[7] 2025 MD Laws Ch. 322; 2025 MD Laws Ch. 323. Available at: https://mgaleg.maryland.gov/2023RS/Chapters_noln/CH_322_sb0805e.pdf.
[8] Maryland Department of Health. (2023, July 21). *Maryland Medical Assistance Program MCO transmittal no. 178*. https://health.maryland.gov/mmcp/provider/Documents/Transmittals_FY2024/PT%2013-24%20Expanded%20Coverage%20of%20Cancer%20Biomarkers%20for%20Companion%20Diagnostic%20Testing%20and%20Targeted%20Drug%20Therapies%20sk%20signed%207.24.2023.pdf

SB 805/HB 1217 requires the Maryland Health Care Commission (MHCC) to submit a report on the impact of providing access to biomarker testing, including an analysis of the impact of providing access to biomarker testing to individuals based on race, gender, age, and public or private insurance, by December 1, 2025. MHCC contracted with The Hilltop Institute at the University of Maryland, Baltimore County (UMBC) to conduct this study. This report provides background on biomarker testing coverage in other states, presents results of a survey administered to commercial health insurance carriers in Maryland, and summarizes Hilltop's analysis to estimate the costs of this expanded biomarker coverage.

Coverage of Biomarker Tests in Other States

Currently, 18 states—including Maryland—have enacted laws requiring the coverage of biomarker testing for all state-regulated plans.[9] Four states have enacted more narrow laws that require coverage of biomarker testing for only certain plans. Specifically, Arkansas, Colorado, and Louisiana have enacted laws that only apply to state regulated private plans, and Florida's law only applies to Medicaid and the state employee health plan. An additional 12 states introduced or passed legislation regarding the coverage of biomarker testing in 2025, including Connecticut, which enacted a law expanding coverage of biomarker testing from only Medicaid to all state-regulated plans. New Jersey also passed legislation to mandate coverage of biomarker testing for state-regulated health plans, Medicaid, and the state health benefits program. See Appendix A for a comparison table displaying state law requirements for biomarker testing.

Carrier Surveys

Survey Design

Hilltop and MHCC designed a survey for the five commercial health insurance carriers participating in Maryland's large group market—Aetna, CareFirst, Cigna, Kaiser Permanente, and United Healthcare—to complete for their largest (by enrollment) preferred provider organization (PPO) and HMO plans. The survey asked the carriers about utilization of biomarker testing, the associated costs, any utilization review in place, and whether their company covers biomarker testing in other states. The survey was administered over the summer of 2025. Four of the five carriers responded to the survey; Kaiser Permanente did not respond. See Appendix B for the full list of survey questions.

Survey Findings

The survey first asked about utilization review. All four carriers reported applying utilization review for certain types of biomarker tests. One carrier reported that all genetic tests are subject to utilization review. Among the other carriers, the types of tests requiring utilization review included the following:

[9] Cancer Action Network. (2025, June). *Access to biomarker testing*. https://www.fightcancer.org/what-we-do/access-biomarker-testing.

- Carrier Testing Panels for Genetic Diseases
- Cell-Free Fetal DNA Testing
- Chromosome Microarray Testing
- FDA Cleared or Approved Companion Diagnostic Testing
- Gastrointestinal Pathogen Nucleic Acid Detection Panel Testing for Infectious Diarrhea
- Genetic Testing for Cardiac Disease
- Genetic Testing for Hereditary Cancer
- Genetic Testing for Neuromuscular Disorders
- Molecular Oncology Testing for Hematologic Tumor Cancer Diagnosis, Prognosis, and Treatment Decisions
- Molecular Oncology Testing for Solid Tumor Cancer Diagnosis, Prognosis, and Treatment Decisions
- Pharmacogenetic Panel Testing
- Preimplantation Genetic Testing and Related Services
- Whole Exome and Whole Genome Sequencing
- Maternal Biomarker Screening for Fetal Conditions
- Invasive Prenatal Diagnosis of Genetic Diseases

Table 1 shows the types of utilization review applied to biomarker tests. Among both PPO and HMO plans, prior authorization was most frequently reported.

Table 1. Number of Carriers who Use Certain Types of Utilization Review, by Plan Type

Response	Number of Carriers Selecting This Response	
	PPO	HMO
Prior Authorization	4	3
Concurrent Review	3	2
Retrospective Review	3	2
Step Therapy	0	0

The survey also asked carriers if they have received claims for biomarker tests since January 1, 2024, and how many claims they received between that date and June 30, 2025. Three carriers reported receiving biomarker claims, and one carrier reported receiving zero claims for biomarker tests during the requested time period.[10] Figure 1 shows the number of claims

[10] Hilltop followed up with this carrier, and they confirmed that they received zero biomarker testing claims. This may be due to their market share or potentially to ambiguity in the definition of biomarker testing.

received by carrier and claims status. Overall, 23.3% of claims received were denied, with denial rates ranging from 12.6% to 53.8%.

Figure 1. Number of Claims Each Carrier Received between January 1, 2024, and June 30, 2025, for Their Largest PPO and HMO,[11] by Claims Status

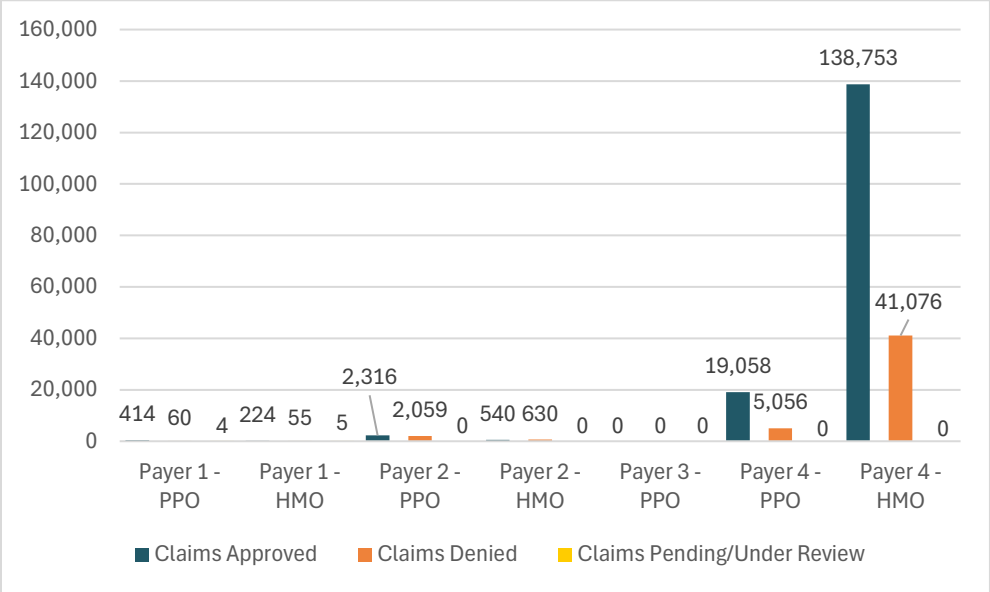

Table 2 shows the most common reasons for biomarker claims denials: lack of medical necessity, incomplete documentation, and out-of-network providers.

Table 2. Number of Carriers Indicating Most Common Reasons for Denial

Reason for Denial	Carriers Listing This Reason	
	PPO	HMO
Lack of Medical Necessity	2	2
Incomplete Documentation	2	2
Out-of-Network Provider	2	2
Experimental/Investigational	1	1

Table 3 presents the average costs for biomarker tests by disease category and carrier, showing wide variation across the two carriers reporting costs. Biomarker tests for autoimmune conditions were the most expensive for Payer 2, costing an average of $2,750 for their largest PPO and HMO plans, but were the least expensive for Payer 4. Cancer tests were the most expensive for Payer 4, with average costs of about $146 for their largest PPO plan and $99 for their largest HMO plan. Infectious disease tests were the least costly test for Payer 2. This cost variation may be due to the heterogeneity of the term biomarker.

[11] One carrier noted that the claims counts they provided represent combined totals for all PPO and all HMO plans, respectively, as they were unable to isolate the claims for only their largest PPO and HMO plans.

Table 3. Average Biomarker Testing Costs, by Plan Type and Disease Category

Carrier	Average Cost, PPO	Average Cost, HMO
Cancer		
Payer 2	$1,490.00	$1,490.00
Payer 4	$145.98	$98.53
Autoimmune		
Payer 2	$2,750.00	$2,750.00
Payer 4	$24.93	$24.80
Cardiovascular		
Payer 2	$1,834.00	$1,834.00
Payer 4	$34.72	$27.87
Kidney Disease		
Payer 2	$275.00	$275.00
Payer 4	Not found in the data	Not found in the data
Infectious Disease		
Payer 2	$135.00	$135.00
Payer 4	$47.98	$39.50
Metabolic		
Payer 2	$304.00	$304.00
Payer 4	$34.40	$23.18
Behavioral Disorders		
Payer 2	$383.00	$383.00
Payer 4	$52.70	$38.06

Utilization of Biomarker Testing

Hilltop analyzed Maryland's all-payer claims database (APCD) to examine population demographics and utilization of biomarker tests in calendar year (CY) 2024, the first year of required coverage. See Appendix C for the list of procedure codes used to identify biomarker tests, which focused on proprietary tests that were unlikely to be covered prior to the statutory expansion. Table 4 shows overall demographic characteristics of the commercial large group and state employee markets in CY 2024. Race/ethnicity categories are as reported in the APCD. The large group market is characterized by a high proportion of missing or unknown race/ethnicity (47%), which limits the ability to draw definitive conclusions about utilization patterns by race. Among those with reported data, White enrollees comprise 29% of the large group market and 52% of the state employee market, while Black enrollees represent 14% and 27%, respectively. The large group market is evenly distributed male and female, and 40% of large group enrollees are aged 40-64 years. For state employees, roughly half are female, and 33% are aged 40-64 years.

Table 4. Demographic Characteristics of the Commercial Large Group and State Employee Markets, CY 2024

Race/Ethnicity	# of State Employees	% of State Employees	# of Large Group Enrollees	% of Large Group Enrollees
Missing/Unknown	28,703	11%	228,134	47%
White	134,109	52%	141,043	29%
Black	71,338	27%	68,166	14%
Asian	10,142	4%	14,223	3%
American Indian or Alaskan	691	0%	874	0%
Other	5,693	2%	10,233	2%
2 or More Races	1,613	1%	1,910	0%
Native Hawaiian/Pacific Islander	311	0%	572	0%
Hispanic	7,299	3%	25,162	5%
Total	**259,899**	**100%**	**490,317**	**100%**
Gender	**# of State Employees**	**% of State Employees**	**# of Large Group Enrollees**	**% of Large Group Enrollees**
Missing/Unknown	4,002	2%	33,306	7%
Female	140,925	54%	226,856	46%
Male	114,972	44%	230,155	47%
Total	**259,899**	**100%**	**490,317**	**100%**
Age Group	**# of State Employees**	**% of State Employees**	**# of Large Group Enrollees**	**% of Large Group Enrollees**
0-1	3,162	1%	9,235	2%
2-5	7,511	3%	18,983	4%
6-20	36,138	14%	79,683	16%
21-39	55,811	21%	167,262	34%
40-64	86,787	33%	194,519	40%
65+	70,490	27%	20,634	4%
Total	**259,899**	**100%**	**490,317**	**100%**

Table 5 shows biomarker utilization and costs by race and ethnicity for the large group fully insured and state employee markets. Overall, 7,147 large group enrollees had biomarker testing in CY 2024, with costs of approximately $3.2 million; 5,659 state employee enrollees had these tests, costing approximately $2.5 million. In the large group market, White enrollees made up 45% of biomarker test utilizers and 45% of costs; Black enrollees were 12% of utilizers and 13% of costs; Asian enrollees had the highest average cost per utilizer ($582), while Hispanic enrollees had the lowest ($382). Among state employees, White enrollees accounted for 61% of utilizers and 60% of costs; Black enrollees made up 25% of utilizers and 27% of costs; Asian enrollees

again had the highest average cost per utilizer ($514), and those reporting two or more races had the lowest ($355). See Appendix D for additional detailed data.

Table 5. Utilization of Biomarker Testing by Race/Ethnicity, CY 2024

Race/Ethnicity	# Enrollees with Biomarker Test	% Enrollees with Biomarker Test	Claims Cost	% Claims Costs	Average Cost per Utilizer
Commercial, Large Group, Fully Insured					
White	3,220	45.1%	$1,433,301	45.1%	$445
Missing/Other/Unknown	2,555	35.7%	$1,076,455	33.9%	-
Black	827	11.6%	$420,453	13.2%	$508
Hispanic	312	4.4%	$119,277	3.8%	$382
Asian	194	2.7%	$112,862	3.5%	$582
Two or More Races	26	0.4%	$13,379	0.4%	$515
Native American / Alaskan	*	*	$3,969	0.1%	-
Pacific Islander / Native Hawaiian	*	*	$175	0.0%	-
Total	**7,147**	**100%**	**$3,179,871**	**100%**	**$445**
State of Maryland					
White	3,427	60.6%	$1,519,211	59.6%	$443
Black	1,401	24.8%	$678,986	26.6%	$485
Missing/Other/Unknown	386	6.8%	$139,301	5.5%	-
Asian	214	3.8%	$110,018	4.3%	$514
Hispanic	175	3.1%	$84,595	3.3%	$483
Two or More Races	43	0.8%	$15,279	0.6%	$355
Native American / Alaskan	*	*	$737	0.0%	-
Pacific Islander / Native Hawaiian	*	*	$164	0.0%	-
Total	**5,659**	**100%**	**$2,548,291**	**100%**	**$450**

Tables 6 and 7 present utilization by gender and age group. 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 ($488 vs. $352 in the large group; $494 vs. $355 in the state employee market). Females are overrepresented among utilizers relative to their population share, while males are underrepresented. Adults aged 40–64 years accounted for the largest share of biomarker testing (54% of utilizers in the large group, 55% in the state employee market) and about 58% of total claims costs in both markets. Average cost per utilizer was highest for children aged 2–5 years in the large group market ($716), but highest for adults aged 21–39 years in the state employee market ($548). Adults aged 40–64 are the most overrepresented group among utilizers compared to their population share, especially in the state employee market.

Table 6. Biomarker Testing Utilization and Claims Cost, by Gender

Gender	# Enrollees with Biomarker Test	% Enrollees with Biomarker Test	Claims Cost	% Claims Costs	Average Cost per Utilizer
Commercial, Large Group, Fully Insured					
Missing/Unknown	*	*	$3,950	0.1%	-
Female	4,866	68.2%	$2,374,693	74.8%	$488
Male	*	*	$801,228	25.2%	$352
Total	**7,147**	**100%**	**$3,179,871**	**100%**	**$445**
State of Maryland					
Missing/Unknown	0	0.0%	$0	0.0%	-
Female	3,885	68.7%	$1,917,642	75.3%	$494
Male	1,774	31.3%	$630,649	24.7%	$355
Total	**5,659**	**100%**	**$2,548,291**	**100%**	**$450**

Table 7. Biomarker Testing Utilization and Claims Cost, by Age Group

Age Group	# Enrollees with Biomarker Test	% Enrollees with Biomarker Test	Claims Cost	% Claims Costs	Average Cost per Utilizer
Commercial, Large Group, Fully Insured					
0-1	71	1.0%	$22,367	0.7%	$315
2-5	42	0.6%	$30,066	0.9%	$716
6-20	410	5.7%	$74,218	2.3%	$181
21-39	2,278	31.9%	$985,878	31.0%	$433
40-64	3,826	53.5%	$1,842,619	57.9%	$482
65+	520	7.3%	$224,723	7.1%	$432
Total	**7,147**	**100%**	**$3,179,871**	**100%**	**$445**
State of Maryland					
0-1	23	0.4%	$8,495	0.3%	$369
2-5	42	0.7%	$19,462	0.8%	$463
6-20	307	5.4%	$84,493	3.3%	$275
21-39	1,079	19.1%	$591,087	23.2%	$548
40-64	3,123	55.2%	$1,489,653	58.5%	$477
65+	1,085	19.2%	$355,101	13.9%	$327
Total	**5,659**	**100%**	**$2,548,291**	**100%**	**$450**

Financial Modeling: Assumptions

The following section explains Hilltop's approach to estimating the costs of expanded biomarker coverage in the state, as well as the assumptions used in this modeling. Hilltop first categorized biomarker tests into the following seven disease categories in consultation with clinicians at the Maryland Department of Health:

1. Behavioral health
2. Metabolic
3. Infectious disease
4. Autoimmune
5. Kidney
6. Cardiovascular
7. Cancer

Hilltop also identified expanded carrier testing (ECT), which includes testing panels that move beyond the standard carrier testing and are routinely performed on reproductive age individuals to identify potential inherited genetic disorders. ECT identifies genes associated with genetic disorders and is often performed before or during pregnancy to screen for potential inherited disorders.

Average Total Participants

Hilltop then reviewed CY 2024 APCD eligibility data to identify commercial large group market (fully insured) and state employee enrollees. Hilltop trended this enrollment through CY 2030 using the actual growth rate between CYs 2023 and 2024. In CY 2024, there were 490,317 large group and 259,899 state employee/retiree enrollees in the APCD.

Eligible Participants

To determine participants who would potentially benefit from biomarker testing for early detection and/or targeting treatment, Hilltop used diagnosis codes largely derived from the Chronic Condition Warehouse (CCW) to identify each of the seven disease categories in the CY 2024 APCD (Table 8). Overall, 31% of the large group market and 48% of the state employee market had at least one of the seven disease categories, with metabolic diseases being the most prevalent in both markets.

Table 8. Participants with Selected Disease Categories, CY 2024

Disease Category	Commercial, Large Group		State of Maryland	
	# Enrollees	% Enrollees	# Enrollees	% Enrollees
Auto Immune	7,988	1.6%	6,866	2.6%
Behavioral Health	71,083	14.5%	46,548	17.9%
Cancer	6,693	1.4%	8,858	3.4%
Cardiovascular	19,935	4.1%	25,549	9.8%
Kidney Disease	5,875	1.2%	9,752	3.8%
Infectious Disease	3,228	0.7%	2,746	1.1%
Metabolic (Non-ECT)	93,892	19.1%	89,761	34.5%
SUBTOTAL	208,694	42.6%	190,080	73.1%
Unique Members Treated	153,229	31.3%	124,915	48.1%
Other Diagnoses or Zero Claims	337,088	68.7%	134,984	51.9%
TOTAL	**490,317**	**100%**	**259,899**	**100%**

Uptake

Hilltop used the APCD to determine the actual uptake of biomarker testing in CY 2024 among the eligible population described above. Because this was the first year of required biomarker testing coverage, Hilltop assumed that uptake would gradually increase and applied growth rates of 3.1% and 3.0% to the large group and state employee markets, respectively, assuming both markets would reach 20% by CY 2030.

Costs per Test and Claims Trend

Hilltop calculated the average cost per test by disease category using actual costs in the CY 2024 APCD. These costs were trended forward at a rate of 10.8% based on national data on the biomarker market.[12] See Appendix E for detailed data on the uptake assumptions and costs per test.

Financial Modeling: Results

Based on the assumptions described above, Hilltop modeled the estimated costs of biomarker testing through CY 2030, with separate estimates for the commercial large group (fully insured) and state employee markets (Table 9). Total funds for the study period are estimated to be $239.5 million for the large group (fully insured) market and $149 million for the state employee market.

[12] https://www.grandviewresearch.com/horizon/outlook/biomarkers-market/united-states

Table 9. 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**

Comparison with Medicaid

Hilltop and the Maryland Department of Health conducted a similar study on the impact of the expansion of biomarker testing for the Medicaid program, available here.[13] Table 10 compares the Medicaid cost estimates with those of the commercial market. Medicaid is projected to incur substantially higher costs ($359 million) than the commercial large group market ($148 million) and the state employee market ($92.5 million) over the four-year period. This likely reflects the broader population served by Medicaid. In Medicaid, cardiovascular and behavioral health conditions account for the largest share of estimated costs. In contrast, cancer testing is the dominant cost driver in the commercial markets

Table 10. Estimated Fiscal Impact of Expanded Coverage of Biomarker Testing, Medicaid compared with Commercial, CY 2026–CY 2029

Type of Testing	Utilizers 2030	CY26	CY27	CY28	CY29	CY26-CY29 Total Funds	%
Medicaid: - Expected / Best Estimate, Calendar Years							
Behavioral Health	126,270	$18,832,680	$23,333,552	$28,250,994	$33,616,125	$104,033,350	29%
Metabolic	44,315	$5,253,995	$6,344,416	$7,533,894	$8,829,777	$27,962,081	8%
Infectious Disease	4,240	$329,641	$395,592	$467,503	$545,813	$1,738,549	0%
Autoimmune	94,962	$6,559,244	$7,737,472	$9,020,357	$10,415,590	$33,732,661	9%
Kidney	16,865	$3,058,471	$3,636,802	$4,266,938	$4,952,699	$15,914,910	4%
Cardiovascular	131,384	$21,236,718	$25,644,212	$30,452,100	$35,690,075	$113,023,104	31%
Expanded Carrier Testing	18,212	$13,090,840	$13,770,451	$14,485,343	$15,237,350	$56,583,983	16%
Cancer	8,008	$1,276,900	$1,495,744	$1,733,869	$1,992,688	$6,499,200	2%
TOTAL	**444,256**	**$69,638,487**	**$82,358,239**	**$96,210,996**	**$111,280,115**	**$359,487,837**	**100%**
Commercial: Large Group, Fully Insured							
Behavioral Health	11,590	$3,343,451	$5,666,217	$8,571,215	$12,175,579	$29,756,462	20%
Metabolic	11,590	$276,545	$451,331	$669,444	$939,565	$2,336,885	2%
Infectious Disease	11,590	$846,459	$1,399,908	$2,091,119	$2,947,735	$7,285,221	5%
Autoimmune	23,180	$374,736	$594,718	$868,714	$1,207,503	$3,045,671	2%
Kidney	11,590	$533,184	$907,861	$1,376,574	$1,958,253	$4,775,871	3%
Cardiovascular	11,590	$356,193	$580,345	$860,033	$1,206,379	$3,002,950	2%
Expanded Carrier Testing	11,590	$3,840,970	$5,946,643	$8,564,414	$11,796,091	$30,148,117	20%
Cancer	34,770	$8,723,415	$13,379,147	$19,162,667	$26,297,833	$67,563,062	46%
TOTAL	**127,492**	**$18,294,954**	**$28,926,169**	**$42,164,180**	**$58,528,937**	**$147,914,240**	**100%**

[13] Maryland Department of Health. (2024, January 2). *Report on Senate Bill 805/House Bill 1217, Maryland Medical Assistance Program and Health Insurance – Required Coverage for Biomarker Testing, (Chapters 322 and 323 of the Acts of 2023)*. https://health.maryland.gov/mmcp/Documents/JCRs/2024/biomarkertestingJCRfinal12-24.pdf

Type of Testing	Utilizers 2030	CY26	CY27	CY28	CY29	CY26-CY29 Total Funds	%
State of Maryland							
Behavioral Health	5,729	$1,706,328	$2,858,303	$4,273,713	$6,000,680	$14,839,024	16%
Metabolic	5,729	$374,432	$625,230	$933,335	$1,309,211	$3,242,208	4%
Infectious Disease	5,729	$531,116	$857,789	$1,258,413	$1,746,446	$4,393,763	5%
Autoimmune	11,459	$283,166	$437,049	$625,244	$853,958	$2,199,418	2%
Kidney	5,729	$408,630	$685,922	$1,026,659	$1,442,433	$3,563,643	4%
Cardiovascular	5,729	$132,237	$205,931	$296,109	$405,759	$1,040,037	1%
Expanded Carrier Testing	5,729	$3,495,783	$5,560,782	$8,091,053	$11,171,108	$28,318,726	31%
Cancer	17,188	$5,065,877	$7,193,665	$9,777,589	$12,898,858	$34,935,989	38%
TOTAL	**63,023**	**$11,997,568**	**$18,424,672**	**$26,282,114**	**$35,828,453**	**$92,532,807**	**100%**

Conclusion

The Maryland General Assembly recently expanded coverage requirements for biomarking testing—requiring insurers, nonprofit health service plans, and HMOs to offer coverage beginning January 1, 2024. Coverage requirements for Medicaid were phased in, with expanded coverage effective July 1, 2025. This legislatively required report estimated the costs of this expanded coverage and examined utilization patterns.

For CY 2026 to CY 2029, the estimated cost of expanded biomarker testing was $359 million for Medicaid, $148 million for the large group commercial market (fully insured), and $92.5 million for the state employee market. The cost for the commercial market is significantly lower because legislation only requires coverage for the large group fully insured market. Appendix F sorts the seven types of biomarker tests by expected utilizers for CY 2026. It shows a total cost of $18 million for the large group market, but 42% of the expected utilizers could be covered if only five disease categories are covered at a reduced cost of $8 million.

Given that 31% of the large group market and 48% of the state employee market had at least one of the seven disease categories for which biomarker testing is available, this expanded coverage may improve early detection of disease for a substantial portion of the population. Demographic analysis shows that utilization of biomarker testing is not evenly distributed across all groups. Females and adults aged 40–64 years are overrepresented among test utilizers relative to their share of the insured population, and these groups account for most associated costs. In both the state employee and large group markets, females accounted for 75% of biomarker testing costs and had higher costs per user than males. In both markets, adults aged 40-64 years accounted for 58% of total biomarker claims costs, but average costs per user varied. In the large group market, White enrollees made up 45% of biomarker test utilizers and 45% of costs; Black enrollees accounted for 12% of utilizers and 13% of costs; and Asian enrollees had the highest average cost per utilizer, while Hispanic enrollees had the lowest.

Among state employees, White enrollees were 61% of utilizers and incurred 60% of costs; Black enrollees made up 25% of utilizers and 27% of costs; and Asian enrollees again had the highest average cost per utilizer.

Data Limitations

It is important to note that these findings are based on a single year of data and on several assumptions regarding uptake, cost trends, and coding practices. As the policy matures and more data become available, ongoing monitoring will be essential to assess the impact of expanded biomarker testing. The data include the following limitations:

- Lack of standardized coding for biomarker tests: There is no universal definition for identifying biomarker tests, and new tests are continuously entering the market. This report focuses on proprietary tests that were unlikely to be covered prior to the statutory expansion. Results may differ if the scope is broadened to include more routine laboratory tests.
- Limited data availability: With only one year of data available since the expansion of biomarker coverage, Hilltop made assumptions about uptake growth and per-test costs. Actual trends may vary. We recommend that MHCC continue to monitor utilization and costs and update these estimates as additional data become available.
- Incomplete demographic data: A high rate of missing race and ethnicity information in the large group market limits the ability to draw meaningful conclusions.

Appendix A. Comparison Table of State Laws Compiled by Triage Cancer[14]

State	Has State Laws Requiring Insurance Coverage of Biomarker Tests	State Law Description	Type(s) of biomarker testing covered	Testing Purpose (e.g., screening, diagnosis, treatment, and/or monitoring)	Entities covered by the law (e.g., health plans, employers, labs, etc.)	State Medicaid Program Required Coverage of Biomarker Tests
ARIZONA	AZ Rev Stat § 20-1406.10 (2022)	The law provides for coverage of biomarker testing from hospital and medical service corporations, health care service organizations, disability insurers, group/blanket disability insurers, and the Arizona Health Care Cost Containment System (AHCCCS). Biomarker testing is covered for purposes of diagnosis, treatment, appropriate management, or ongoing monitoring of an insured's disease or condition to guide treatment as long as the test provides clinical utility as demonstrated by medical and scientific evidence (such as FDA-labeled tests, CMS national coverage determinations, nationally recognized clinical practice guidelines).	Includes single-analyte tests, multiplex panel tests, and whole genome sequencing.	For the purpose of diagnosis, treatment, appropriate management, or ongoing monitoring of an individual's disease or condition to guide treatment decisions.	A hospital service corporation or medical service corporation that issues, amends, delivers, or renews a subscription contract on or after January 1, 2023, shall provide coverage for biomarker testing.	X
ARKANSAS	Arkansas HB 1121 was signed into law on 4/4/2023 as Act 429	Health benefit plans offered, issued, or renewed in Arkansas must provide coverage for biomarker testing.	Analysis of a patient's tissue, blood, or other biospecimen for the presence of a biomarker, including single-analyte tests, multiplex panel tests, protein expression, and whole exome, whole genome, and whole transcriptome sequencing.	For the purpose of diagnosis, treatment, appropriate management, or ongoing monitoring of an individual's disease or condition to guide treatment decisions.	An individual, blanket, or group plan, policy, or contract for healthcare services issued, renewed, or extended by a healthcare insurer, health maintenance organization, hospital medical service corporation, or self-insured governmental or church plan	

[14] Source: Triage Cancer. (2025). *Health insurance: Biomarker testing*. https://triagecancer.org/state-laws/health-insurance-biomarker-testing

State	Has State Laws Requiring Insurance Coverage of Biomarker Tests	State Law Description	Type(s) of biomarker testing covered	Testing Purpose (e.g., screening, diagnosis, treatment, and/or monitoring)	Entities covered by the law (e.g., health plans, employers, labs, etc.)	State Medicaid Program Required Coverage of Biomarker Tests
CALIFORNIA	Cal. Health & Safety Code 1367.667	Requires health insurance coverage for medically necessary biomarker testing, subject to utilization review management	Analysis of an individual's tissue, blood, or other biospecimen for the presence of a biomarker. It includes, but is not limited to, single-analyte tests, multiplex panel tests, and whole genome sequencing	For the purpose of diagnosis, treatment, appropriate management, or ongoing monitoring of an individual's disease or condition to guide treatment decisions	A health care service plan contract or health insurance policy that is issued, amended, delivered, or renewed on or after July 1, 2024	X
COLORADO	SB24-124	All large group health benefit plans and, to the extent that such coverage is not in addition to the benefits provided pursuant to the benchmark plan, all individual and small group health benefit plans, shall provide coverage for biomarker testing	Analysis of an individual's tissue, blood, or other biospecimen for the presence of a biomarker. It includes single-analyte tests, multiplex panel tests, protein expression, and whole exome, whole genome, and whole transcriptome sequencing	For diagnosis, treatment, appropriate management, and ongoing monitoring of an individual's disease or condition to guide treatment decisions.	All large group health benefit plans and, to the extent that such coverage is not in addition to the benefits provided pursuant to the benchmark plan, all individual and small group health benefit plans	
CONNECTICUT	Public Act No. 25-16	Effective January 1, 2026, requires coverage for biomarker testing for the purpose of diagnosis, treatment, appropriate management or ongoing monitoring of an insured's disease or condition.	Analysis of an individual's tissue, blood or other biospecimen for the presence of a biomarker, including, but not limited to, tests for a single substance, tests for multiple substances, diseases or conditions.	For diagnosis, treatment, appropriate management or ongoing monitoring of a disease or condition.	Individual and group health insurance policies.	Public Act No. 24-50
DELAWARE[15]	Del. Code Ann. tit. 18, § 3337(a) and Del. Code Ann. tit. 18, § 3554(a)	Requires coverage for CA-125 (a biomarker) monitoring of ovarian cancer subsequent to treatment	CA-125	Monitoring subsequent to treatment	Individual health, sickness or accident policies, contracts, or certificates, and group and blanket health insurance policies	

[15] The requirement applies to individuals with ovarian cancer.

State	Has State Laws Requiring Insurance Coverage of Biomarker Tests	State Law Description	Type(s) of biomarker testing covered	Testing Purpose (e.g., screening, diagnosis, treatment, and/or monitoring)	Entities covered by the law (e.g., health plans, employers, labs, etc.)	State Medicaid Program Required Coverage of Biomarker Tests
FLORIDA	Florida CS/CS/HB 885	Requires the Florida Medicaid program and the Division of State Group Insurance program to provide coverage for biomarker testing	Analysis of an individual's tissue, blood, or other biospecimen, including single analyte tests, multiplex panel tests, protein expression, and who exome, whole genome, and whole transcriptome sequencing	For diagnosis, treatment, management, and ongoing monitoring of an individual's disease or condition, to guide treatment decisions	Medicaid and state group insurance programs	x
GEORGIA	Act 232 (amending Article 1 of Chapter 24 of Title 33 of the Official Code of Georgia Annotated and Article 7 of Chapter 4 of Title 49 of the Official Code of Georgia Annotated)	Effective July 1, 2023, health benefits policies and Medicaid, shall include coverage for biomarker testing for the purposes of diagnosis, treatment, appropriate management, or ongoing monitoring of an enrollee's disease or condition when the testing is supported by medical and scientific evidence.	Includes, but is not limited to, single-analyte tests, multiplex panel tests, whole genome sequencing, protein expression, whole exome, and whole transcriptome.	Diagnosis, treatment, appropriate management, or ongoing monitoring of a disease or condition.	Any individual or group plan, policy, or contract for healthcare services issued, delivered, issued for delivery, or renewed in this state after July 1, 2023	X
ILLINOIS	Public Act 102-0203 (to be codified at 215 ILCS 5/356z.43).	The law requires health insurance plans amended, delivered, issued, or renewed after January 1, 2022, to include coverage for biomarker testing for purposes of diagnosis, treatment, appropriate management, or ongoing monitoring of an enrollee's disease or condition when the test is supported by medical and scientific evidence (such as FDA labeling, CMS national coverage determination, nationally recognized clinical practice guidelines, etc.). Coverage and testing shall be conducted in an efficient manner to provide the most complete range of results to	Includes, but is not limited to, single-analyte tests, multi-plex panel tests, and partial or whole genome sequencing.	Diagnosis, treatment, appropriate management, or ongoing monitoring of a disease or condition when the test is supported by medical and scientific evidence.	A group or individual policy of accident and health insurance or managed care plan amended, delivered, issued or renewed on or after January 1, 2022, shall include coverage for biomarker testing.	X

State	Has State Laws Requiring Insurance Coverage of Biomarker Tests	State Law Description	Type(s) of biomarker testing covered	Testing Purpose (e.g., screening, diagnosis, treatment, and/or monitoring)	Entities covered by the law (e.g., health plans, employers, labs, etc.)	State Medicaid Program Required Coverage of Biomarker Tests
		the healthcare provider without requiring multiple biopsies, biospecimen samples, or other delays or disruptions in patient care. Law also provides that where biomarker testing is restricted by an insurance plan, there shall be a clear and accessible process to request an exception on the insurer's website.				
INDIANA	Ind. Code § 27-8-14.3-10	Effective July 1, 2024, this law requires health plans to provide coverage for biomarker testing.		A health plan shall provide coverage for biomarker testing for the purposes of diagnosis, treatment, appropriate management, or ongoing monitoring of an enrollee's disease or condition when biomarker testing is supported by medical and scientific evidence	(1) A policy of accident and sickness insurance. (2) A contract with a health maintenance organization that provides coverage for basic health care services. (3) The Medicaid risk based managed care program operated under IC 12-15. (4) A state employee health plan.	
IOWA	House File 2668	Requires all Iowa-regulated insurance plans to cover biomarker testing for covered individuals.	"Biomarker testing" means the analysis of an individual's tissue, blood, or other biospecimen for the presence of a biomarker, including but not limited to single-analyte tests, multiplex panel tests, or whole genome sequencing.	Diagnosing, treating, appropriately managing, or monitoring a disease or condition.	A policy, contract, or plan providing for third-party payment or prepayment of medical expenses.	Since July 1, 2013, the CPT Code 86352 "CELLULAR FUNC ASSAY, DETECT OF BIOMRKER" has been covered under the Iowa Medicaid physician fee schedules for MDs and DOs.

State	Has State Laws Requiring Insurance Coverage of Biomarker Tests	State Law Description	Type(s) of biomarker testing covered	Testing Purpose (e.g., screening, diagnosis, treatment, and/or monitoring)	Entities covered by the law (e.g., health plans, employers, labs, etc.)	State Medicaid Program Required Coverage of Biomarker Tests
KENTUCKY	Chapter 77 amends Kentucky Revised Statutes Chapter 304, Section 17-A, New Subsection	Requires Kentucky health benefit plans & the Department of Medicaid Services to provide coverage for biomarker testing.	Includes but is not limited to single-analyte tests, multiplex panel tests, and whole genome sequencing.	Diagnosis, treatment, appropriate management, ongoing monitoring of an insured's disease or condition when the test is supported by medical and scientific evidence.	Health benefit plans	x
LOUISIANA	Louisiana Rev. Stat. 22:1028.3.	Requires health coverage plans renewed, delivered, or issued for delivery in Louisiana to cover biomarker testing.	Biomarker testing includes but is not limited to single-analyte tests, multi-plex panel tests, protein expression, whole exome, whole genome, and whole transcriptome sequencing.	Diagnosis, treatment, appropriate management, or ongoing monitoring of an individual's disease or condition when the test is supported by medical and scientific evidence.	Any hospital, health, or medical expense insurance policy, hospital or medical service contract, employee welfare benefit plan, contract, or other agreement with a health maintenance organization or a preferred provider organization, health and accident insurance policy, or any other insurance contract of this type in Louisiana, including a group insurance plan or self-insurance plan, and the office of group benefits.	

State	Has State Laws Requiring Insurance Coverage of Biomarker Tests	State Law Description	Type(s) of biomarker testing covered	Testing Purpose (e.g., screening, diagnosis, treatment, and/or monitoring)	Entities covered by the law (e.g., health plans, employers, labs, etc.)	State Medicaid Program Required Coverage of Biomarker Tests
MARYLAND	Chapter 322 Annotated Code of Maryland Article – Health – General Sections 15–102.3(k), 103(a)	Effective July 1, 2025, health insurance plans shall provide coverage for biomarker testing.	Includes single–analyte tests, multi–plex panel tests, protein expression, and whole exome, whole genome, and whole transcriptome sequencing.	Diagnosis, treatment, appropriate management, or ongoing monitoring of a disease or condition that is supported by medical and scientific evidence	(1) Insurers and nonprofit health service plans that provide hospital, medical, or surgical benefits to individuals or groups on an expense–incurred basis under health insurance policies or contracts that are issued or delivered in the state; and (2) health maintenance organizations that provide hospital, medical, or surgical benefits to individuals or groups under contracts that are issued or delivered in the state.	X
MINNESOTA	Minn. Stat. § 62Q.473Added by 2023 Minn. Laws, ch. 70,s 2-26, eff. 1/1/2025	Effective January 1, 2025, health plans must provide coverage for biomarker testing.	Includes single–analyte tests, multi–plex panel tests, protein expression, and whole exome, whole genome, and whole transcriptome sequencing.	Diagnosis, treatment, management, and monitoring illness or disease if the test provides clinical utility, as demonstrated by medical and scientific evidence.	Health plans	

State	Has State Laws Requiring Insurance Coverage of Biomarker Tests	State Law Description	Type(s) of biomarker testing covered	Testing Purpose (e.g., screening, diagnosis, treatment, and/or monitoring)	Entities covered by the law (e.g., health plans, employers, labs, etc.)	State Medicaid Program Required Coverage of Biomarker Tests
NEBRASKA	NE LB77 was signed into law on 6/4/2025; provisions related to biomarker testing will be effective as of 1/1/2028	Requires that insurers provide coverage for biomarker testing when the test is used for the diagnosis, treatment, appropriate management, or ongoing monitoring of cancer, an autoimmune or autoinflammatory disease, Parkinson's disease, ALS, Alzheimer's disease and related dementias, rheumatoid arthritis, preeclampsia, sickle cell anemia, or a cardiovascular condition; an organ or tissue transplant; or pharmacogenomic testing	Includes, but is not limited to, single-analyte tests, multi-plex panel tests, protein expression, and whole exome, whole genome, and whole transcriptome sequencing	Diagnosis, treatment, appropriate management, or ongoing monitoring or cancer, as well as other conditions (See state law description)	Individual or group policies, as well as any self-funded employee benefit plans to the extent not preempted by federal law	No later than 1/1/2028
NEVADA	NRS 287.010, 287.04335, 422.2717-422.27248, 689A.04033-689A.0465, 689B.0303-689B.0379, 689C.1655-689C.169, 689C.194-689C.195, 689C.425, 695A.184-695A.1875, 695B.1901-695B.1949, 695C.050, 695C.1691-695C.176, 695G.162-695G.177	Requires insurers that issue policies of health insurance to include coverage for medically necessary biomarker testing.	Includes, without limitation, single-analyte tests, multiplex panel tests and whole genome, whole exome and whole transcriptome sequencing.	Diagnosis, treatment, appropriate management and ongoing monitoring of cancer when such biomarker testing is supported by medical and scientific evidence	Insurers that issue policies of health insurance	The director shall include in the State Plan for Medicaid a requirement that the State pay the nonfederal share of expenditures incurred for medically necessary biomarker testing for the diagnosis, treatment, appropriate management and ongoing monitoring of cancer when such biomarker testing is supported by medical and scientific evidence.

State	Has State Laws Requiring Insurance Coverage of Biomarker Tests	State Law Description	Type(s) of biomarker testing covered	Testing Purpose (e.g., screening, diagnosis, treatment, and/or monitoring)	Entities covered by the law (e.g., health plans, employers, labs, etc.)	State Medicaid Program Required Coverage of Biomarker Tests
NEW JERSEY	A-4163/S-3098 was signed into law on 4/23/2025	Requires state-regulated health insurers to cover biomarker testing.	Includes, but Is not limited to, single-analyte tests, multiplex panel tests, protein expression, and whole exome, whole genome, and whole transcriptome sequencing.	Diagnosis, treatment, appropriate management, or ongoing monitoring of a disease or condition when the test is supported by medical and scientific evidence	Hospital service corporation contracts, medical service corporation contracts, health service corporation contracts, individual and group health insurance policies, individual health benefit plans, small employer health benefits plans, health maintenance organization contracts, State Health Commission and School Employees' Health Benefits Commission contracts	x

State	Has State Laws Requiring Insurance Coverage of Biomarker Tests	State Law Description	Type(s) of biomarker testing covered	Testing Purpose (e.g., screening, diagnosis, treatment, and/or monitoring)	Entities covered by the law (e.g., health plans, employers, labs, etc.)	State Medicaid Program Required Coverage of Biomarker Tests
NEW MEXICO	NMS § 13-7-NEWAdded by 2023, c. 138,s. 1, eff. 6/13/2023	Effective January 1, 2024, biomarker testing is covered for the purposes of diagnosis, treatment, appropriate management or ongoing monitoring of an insured's disease or condition when the test is supported by medical and scientific evidence.	Includes single-analyte tests, multi-plex panel tests, protein expression and whole exome, whole genome and whole transcriptome sequencing.	Diagnosis, treatment, appropriate management or ongoing monitoring of an insured's disease or condition when the test is supported by medical and scientific evidence	Group health coverage, including self-insurance, offered, issued, amended, delivered or renewed under the Health Care Purchasing Act; A blanket or group health insurance policy, health care plan or certificate of health insurance that is delivered, issued for delivery or renewed in this state; An individual or group health maintenance organization contract that is delivered, issued for delivery or renewed in this state; An individual or group health insurance policy, health care plan or certificate of health insurance that is delivered, issued for delivery or renewed in this state	x

State	Has State Laws Requiring Insurance Coverage of Biomarker Tests	State Law Description	Type(s) of biomarker testing covered	Testing Purpose (e.g., screening, diagnosis, treatment, and/or monitoring)	Entities covered by the law (e.g., health plans, employers, labs, etc.)	State Medicaid Program Required Coverage of Biomarker Tests
NEW YORK	Assembly Bill 8502	As of 4/1/2024, requires health insurance policies and Medicaid to cover biomarker testing for certain purposes.	Includes, but is not limited to, single-analyte tests and multi-plex panel tests performed at participating in-network laboratory facilities that are either CLIA certified or CLIA waived by the federal food and drug administration.	Diagnosis, treatment, appropriate management, or ongoing monitoring of a person's disease or condition when the test provides clinical utility to the patient as demonstrated by medical and scientific evidence.	Every policy which provides medical, major medical, or similar comprehensive-type coverage; every insurer delivering a group or blanket policy or issuing a group or blanket policy for delivery in this state that provides coverage for medical, major medical, or similar comprehensive-type coverage; a medical expense indemnity corporation, a hospital service corporation or a health service corporation that provides coverage for medical, major medical, or similar comprehensive-type coverage	x
OKLAHOMA	Okla. Stat. tit. 56, § 4003Added by Laws 2023, c. 331,s. 3, eff. 1/1/2024.	As of 1/1/2024, requires health benefit plans, including the Oklahoma Employees Insurance Plan, as well as Medicaid, to provide coverage for biomarker testing.	Includes, but is not limited to, single-analyte tests, multiplex panel tests, gene or protein expression, and whole exome, whole genome, and whole transcriptome sequencing.	Diagnosis, treatment, appropriate management, or ongoing monitoring of someone's disease or condition to guide treatment decisions when the biomarker test provides clinical utility as demonstrated by medical and scientific evidence.	Any health benefit plan, including the Oklahoma Employees Insurance Plan that is offered, issued, or renewed on or after 1/1/2024.	X

State	Has State Laws Requiring Insurance Coverage of Biomarker Tests	State Law Description	Type(s) of biomarker testing covered	Testing Purpose (e.g., screening, diagnosis, treatment, and/or monitoring)	Entities covered by the law (e.g., health plans, employers, labs, etc.)	State Medicaid Program Required Coverage of Biomarker Tests
PENNSYLVANIA	HB 1754: An Act amending the act of May 17, 1921 (P.L.682, No.284), known as The Insurance Company Law of 1921, in casualty insurance, providing for coverage for biomarker testing.	Effective January 1, 2024, requires insurers to include biomarker testing as a covered benefit.	Includes, but is not limited to, single-analyte tests and multi-plex panels performed at a participating in-network laboratory that is CLIA certified by the federal FDA.	Diagnosis, treatment, appropriate management, or ongoing monitoring of a covered person's disease or condition to guide treatment decisions.	Insurers that offer, issue, or renew health insurance policies in PA.	As of 1/1/2026
RHODE ISLAND	RI Stat. 27-18-89	As of 1/1/2024, requires health insurers, nonprofit hospital service corporations, and health maintenance organizations to issue policies that provide coverage for biomarker testing	Includes, but is not limited to, single-analyte tests, multi-plex panel tests, and whole genome sequencing	Diagnosis, treatment, appropriate management, or ongoing monitoring of an enrollee's disease or condition to guide treatment decisions, when the test provides clinical utility as demonstrated by medical and scientific evidence	Every individual or group health insurance contract, or every individual or group hospital or medical expense insurance policy, plan, or group policy delivered, issued for delivery, or renewed in RI on or after January 1, 2024	x
TEXAS	SECTIONA1. Subtitle E, Title 8, Insurance Code, is amended by adding Chapter 1372 to read as follows: CHAPTER 1372. COVERAGE FOR BIOMARKER TESTINGSec.A1372.001.A	Effective 9/1/2023, requires health benefit plans, including Medicaid, to cover biomarker testing	Includes single-analyte tests, multiplex panel tests, and whole genome sequencing	Diagnosis, treatment, appropriate management, or ongoing monitoring of an enrollee's disease or condition to guide treatment when the test is supported by medical and scientific evidence	Sec. 1372.002 provides a lengthy description of the health benefit plans that are covered, including individual and group coverage, Medicaid (including the Medicaid managed care program), and self-funded health benefit plans sponsored by professional employer organizations	x
LAST UPDATED	8/5/2025	7/3/2025	7/3/2025	7/3/2025	7/3/2025	7/3/2025

Appendix B. Biomarker Testing Survey Questions

Corporate Group Name: _____
Contact Name:_____
Contact Email: _____
Largest (By Enrollment) PPO in Large Group Market Plan Name: _____
Largest (By Enrollment) HMO in Large Group Market Plan Name: _____

Please complete this survey for your largest (by enrollment) large group market PPO and HMO plans.

1. Have you received claims for biomarker testing since January 1, 2024?

    a. Yes
    b. No

2. Does your plan apply utilization review to biomarker testing?

    a. Yes, for all biomarker testing claims
    b. Yes, but only for certain types of tests and/or conditions

        i. If yes, please list the types of tests and/or conditions

    c. No

3. If yes to question 3, what type(s) of utilization review are applied to biomarker testing? Select all that apply.

    a. Prior Authorization
    b. Concurrent Review
    c. Retrospective Review
    d. Step Therapy
    e. Other (Describe:)_____

4. How many claims has your plan received for biomarker testing between January 1, 2024, and June 30, 2025? If possible, please provide these by race/ethnicity.

    a. # Approved:_____
    b. # Denied:_____
    c. #Pending/Under Review: _____
    d. Total # Claims: _____

5. What are the most common reasons for denial of biomarker testing claims? (Check all the apply.)

a. Lack of Medical Necessity
b. Incomplete Documentation
c. Out-of-Network Provider
d. Experimental/Investigational
e. Other:_____

6. What is the average cost for biomarker tests for the following conditions? [Drop down box]

    a. Cancer
    b. Autoimmune
    c. Cardiovascular
    d. Kidney
    e. Infectious
    f. Metabolic
    g. Behavioral Disorder
    h. Other (Describe): _____

7. Does your company cover biomarker testing in plans in other states?

    a. Yes

        i. If yes, please list the states
    b. No
    c. N/A

8. Have you observed any material differences in the uptake and/or utilization patterns within the Large Group, Fully Insured and State Employee Health Plan markets?

Appendix C. Codes Used to Identify Biomarker Tests

The codes below were derived from the Centers for Medicare & Medicaid Services billing and coding manual and through consultation with clinicians at the Maryland Department of Health.[16]

Table C1. Codes Used to Identify Cancer Tests

CPT	Description
81120	Idh1 common variants
81121	IDH2 (ISOCITRATE DEHYDROGENASE 2 [NADP+], MITOCHONDRIAL) (EG, GLIOMA), COMMON VARIANTS (EG, R140W, R172M)
81162	BRCA1 (BRCA1, DNA REPAIR ASSOCIATED), BRCA2 (BRCA2, DNA REPAIR ASSOCIATED) (EG, HEREDITARY BREAST AND OVARIAN CANCER) GENE ANALYSIS; FULL SEQUENCE ANALYSIS AND FULL DUPLICATION/DELETION ANALYSIS (IE, DETECTION OF LARGE GENE REARRANGEMENTS)
81163	BRCA1 (BRCA1, DNA REPAIR ASSOCIATED), BRCA2 (BRCA2, DNA REPAIR ASSOCIATED) (EG, HEREDITARY BREAST AND OVARIAN CANCER) GENE ANALYSIS; FULL SEQUENCE ANALYSIS
81164	BRCA1 (BRCA1, DNA REPAIR ASSOCIATED), BRCA2 (BRCA2, DNA REPAIR ASSOCIATED) (EG, HEREDITARY BREAST AND OVARIAN CANCER) GENE ANALYSIS; FULL DUPLICATION/DELETION ANALYSIS (IE, DETECTION OF LARGE GENE REARRANGEMENTS)
81165	BRCA1 (BRCA1, DNA REPAIR ASSOCIATED) (EG, HEREDITARY BREAST AND OVARIAN CANCER) GENE ANALYSIS; FULL SEQUENCE ANALYSIS
81166	BRCA1 (BRCA1, DNA REPAIR ASSOCIATED) (EG, HEREDITARY BREAST AND OVARIAN CANCER) GENE ANALYSIS; FULL DUPLICATION/DELETION ANALYSIS (IE, DETECTION OF LARGE GENE REARRANGEMENTS)
81167	BRCA2 (BRCA2, DNA REPAIR ASSOCIATED) (EG, HEREDITARY BREAST AND OVARIAN CANCER) GENE ANALYSIS; FULL DUPLICATION/DELETION ANALYSIS (IE, DETECTION OF LARGE GENE REARRANGEMENTS)
81168	CCND1/IGH (T(11;14)) (EG, MANTLE CELL LYMPHOMA) TRANSLOCATION ANALYSIS, MAJOR BREAKPOINT, QUALITATIVE AND QUANTITATIVE, IF PERFORMED
81170	ABL1 (ABL PROTO-ONCOGENE 1, NON-RECEPTOR TYROSINE KINASE) (EG, ACQUIRED IMATINIB TYROSINE KINASE INHIBITOR RESISTANCE), GENE ANALYSIS, VARIANTS IN THE KINASE DOMAIN
81191	NTRK1 (NEUROTROPHIC RECEPTOR TYROSINE KINASE 1) (EG, SOLID TUMORS) TRANSLOCATION ANALYSIS
81192	NTRK2 (NEUROTROPHIC RECEPTOR TYROSINE KINASE 2) (EG, SOLID TUMORS) TRANSLOCATION ANALYSIS
81193	NTRK3 (NEUROTROPHIC RECEPTOR TYROSINE KINASE 3) (EG, SOLID TUMORS) TRANSLOCATION ANALYSIS

[16] https://www.cms.gov/medicare-coverage-database/view/article.aspx?articleid=56199

CPT	Description
81194	NTRK (NEUROTROPHIC RECEPTOR TYROSINE KINASE 1, 2, AND 3) (EG, SOLID TUMORS) TRANSLOCATION ANALYSIS
81201	APC (ADENOMATOUS POLYPOSIS COLI) (EG, FAMILIAL ADENOMATOSIS POLYPOSIS [FAP], ATTENUATED FAP) GENE ANALYSIS; FULL GENE SEQUENCE
81202	APC (ADENOMATOUS POLYPOSIS COLI) (EG, FAMILIAL ADENOMATOSIS POLYPOSIS [FAP], ATTENUATED FAP) GENE ANALYSIS; KNOWN FAMILIAL VARIANTS
81203	APC (ADENOMATOUS POLYPOSIS COLI) (EG, FAMILIAL ADENOMATOSIS POLYPOSIS [FAP], ATTENUATED FAP) GENE ANALYSIS; DUPLICATION/DELETION VARIANTS
81206	BCR/ABL1 (T(9;22)) (EG, CHRONIC MYELOGENOUS LEUKEMIA) TRANSLOCATION ANALYSIS; MAJOR BREAKPOINT, QUALITATIVE OR QUANTITATIVE
81207	BCR/ABL1 (T(9;22)) (EG, CHRONIC MYELOGENOUS LEUKEMIA) TRANSLOCATION ANALYSIS; MINOR BREAKPOINT, QUALITATIVE OR QUANTITATIVE
81208	BCR/ABL1 (T(9;22)) (EG, CHRONIC MYELOGENOUS LEUKEMIA) TRANSLOCATION ANALYSIS; OTHER BREAKPOINT, QUALITATIVE OR QUANTITATIVE
81210	BRAF (B-RAF PROTO-ONCOGENE, SERINE/THREONINE KINASE) (EG, COLON CANCER, MELANOMA), GENE ANALYSIS, V600 VARIANT(S)
81212	BRCA1 (BRCA1, DNA REPAIR ASSOCIATED), BRCA2 (BRCA2, DNA REPAIR ASSOCIATED) (EG, HEREDITARY BREAST AND OVARIAN CANCER) GENE ANALYSIS; 185DELAG, 5385INSC, 6174DELT VARIANTS
81215	BRCA1 (BRCA1, DNA REPAIR ASSOCIATED) (EG, HEREDITARY BREAST AND OVARIAN CANCER) GENE ANALYSIS; KNOWN FAMILIAL VARIANT
81216	BRCA2 (BRCA2, DNA REPAIR ASSOCIATED) (EG, HEREDITARY BREAST AND OVARIAN CANCER) GENE ANALYSIS; FULL SEQUENCE ANALYSIS
81217	BRCA2 (BRCA2, DNA REPAIR ASSOCIATED) (EG, HEREDITARY BREAST AND OVARIAN CANCER) GENE ANALYSIS; KNOWN FAMILIAL VARIANT
81218	CEBPA (CCAAT/ENHANCER BINDING PROTEIN [C/EBP], ALPHA) (EG, ACUTE MYELOID LEUKEMIA), GENE ANALYSIS, FULL GENE SEQUENCE
81219	CALR (CALRETICULIN) (EG, MYELOPROLIFERATIVE DISORDERS), GENE ANALYSIS, COMMON VARIANTS IN EXON 9
81233	BTK (BRUTON'S TYROSINE KINASE) (EG, CHRONIC LYMPHOCYTIC LEUKEMIA) GENE ANALYSIS, COMMON VARIANTS (EG, C481S, C481R, C481F)
81235	EGFR (EPIDERMAL GROWTH FACTOR RECEPTOR) (EG, NON-SMALL CELL LUNG CANCER) GENE ANALYSIS, COMMON VARIANTS (EG, EXON 19 LREA DELETION, L858R, T790M, G719A, G719S, L861Q)
81236	EZH2 (ENHANCER OF ZESTE 2 POLYCOMB REPRESSIVE COMPLEX 2 SUBUNIT) (EG, MYELODYSPLASTIC SYNDROME, MYELOPROLIFERATIVE NEOPLASMS) GENE ANALYSIS, FULL GENE SEQUENCE
81237	EZH2 (ENHANCER OF ZESTE 2 POLYCOMB REPRESSIVE COMPLEX 2 SUBUNIT) (EG, DIFFUSE LARGE B-CELL LYMPHOMA) GENE ANALYSIS, COMMON VARIANT(S) (EG, CODON 646)
81245	FLT3 (FMS-RELATED TYROSINE KINASE 3) (EG, ACUTE MYELOID LEUKEMIA), GENE ANALYSIS; INTERNAL TANDEM DUPLICATION (ITD) VARIANTS (IE, EXONS 14, 15)

CPT	Description
81246	FLT3 (FMS-RELATED TYROSINE KINASE 3) (EG, ACUTE MYELOID LEUKEMIA), GENE ANALYSIS; TYROSINE KINASE DOMAIN (TKD) VARIANTS (EG, D835, I836)
81261	IGH@ (IMMUNOGLOBULIN HEAVY CHAIN LOCUS) (EG, LEUKEMIAS AND LYMPHOMAS, B-CELL), GENE REARRANGEMENT ANALYSIS TO DETECT ABNORMAL CLONAL POPULATION(S); AMPLIFIED METHODOLOGY (EG, POLYMERASE CHAIN REACTION)
81262	IGH@ (IMMUNOGLOBULIN HEAVY CHAIN LOCUS) (EG, LEUKEMIAS AND LYMPHOMAS, B-CELL), GENE REARRANGEMENT ANALYSIS TO DETECT ABNORMAL CLONAL POPULATION(S); DIRECT PROBE METHODOLOGY (EG, SOUTHERN BLOT)
81263	IGH@ (IMMUNOGLOBULIN HEAVY CHAIN LOCUS) (EG, LEUKEMIA AND LYMPHOMA, B-CELL), VARIABLE REGION SOMATIC MUTATION ANALYSIS
81264	IGK@ (IMMUNOGLOBULIN KAPPA LIGHT CHAIN LOCUS) (EG, LEUKEMIA AND LYMPHOMA, B-CELL), GENE REARRANGEMENT ANALYSIS, EVALUATION TO DETECT ABNORMAL CLONAL POPULATION(S)
81270	JAK2 (JANUS KINASE 2) (EG, MYELOPROLIFERATIVE DISORDER) GENE ANALYSIS, P.VAL617PHE (V617F) VARIANT
81272	KIT (V-KIT HARDY-ZUCKERMAN 4 FELINE SARCOMA VIRAL ONCOGENE HOMOLOG) (EG, GASTROINTESTINAL STROMAL TUMOR [GIST], ACUTE MYELOID LEUKEMIA, MELANOMA), GENE ANALYSIS, TARGETED SEQUENCE ANALYSIS (EG, EXONS 8, 11, 13, 17, 18)
81273	KIT (V-KIT HARDY-ZUCKERMAN 4 FELINE SARCOMA VIRAL ONCOGENE HOMOLOG) (EG, MASTOCYTOSIS), GENE ANALYSIS, D816 VARIANT(S)
81275	KRAS (KIRSTEN RAT SARCOMA VIRAL ONCOGENE HOMOLOG) (EG, CARCINOMA) GENE ANALYSIS; VARIANTS IN EXON 2 (EG, CODONS 12 AND 13)
81276	KRAS (KIRSTEN RAT SARCOMA VIRAL ONCOGENE HOMOLOG) (EG, CARCINOMA) GENE ANALYSIS; ADDITIONAL VARIANT(S) (EG, CODON 61, CODON 146)
81277	CYTOGENOMIC NEOPLASIA (GENOME-WIDE) MICROARRAY ANALYSIS, INTERROGATION OF GENOMIC REGIONS FOR COPY NUMBER AND LOSS-OF-HETEROZYGOSITY VARIANTS FOR CHROMOSOMAL ABNORMALITIES
81287	MGMT (O-6-METHYLGUANINE-DNA METHYLTRANSFERASE) (EG, GLIOBLASTOMA MULTIFORME) PROMOTER METHYLATION ANALYSIS
81288	MLH1 (MUTL HOMOLOG 1, COLON CANCER, NONPOLYPOSIS TYPE 2) (EG, HEREDITARY NON-POLYPOSIS COLORECTAL CANCER, LYNCH SYNDROME) GENE ANALYSIS; PROMOTER METHYLATION ANALYSIS
81292	MLH1 (MUTL HOMOLOG 1, COLON CANCER, NONPOLYPOSIS TYPE 2) (EG, HEREDITARY NON-POLYPOSIS COLORECTAL CANCER, LYNCH SYNDROME) GENE ANALYSIS; FULL SEQUENCE ANALYSIS
81293	MLH1 (MUTL HOMOLOG 1, COLON CANCER, NONPOLYPOSIS TYPE 2) (EG, HEREDITARY NON-POLYPOSIS COLORECTAL CANCER, LYNCH SYNDROME) GENE ANALYSIS; KNOWN FAMILIAL VARIANTS
81294	MLH1 (MUTL HOMOLOG 1, COLON CANCER, NONPOLYPOSIS TYPE 2) (EG, HEREDITARY NON-POLYPOSIS COLORECTAL CANCER, LYNCH SYNDROME) GENE ANALYSIS; DUPLICATION/DELETION VARIANTS

CPT	Description
81295	MSH2 (MUTS HOMOLOG 2, COLON CANCER, NONPOLYPOSIS TYPE 1) (EG, HEREDITARY NON-POLYPOSIS COLORECTAL CANCER, LYNCH SYNDROME) GENE ANALYSIS; FULL SEQUENCE ANALYSIS
81296	MSH2 (MUTS HOMOLOG 2, COLON CANCER, NONPOLYPOSIS TYPE 1) (EG, HEREDITARY NON-POLYPOSIS COLORECTAL CANCER, LYNCH SYNDROME) GENE ANALYSIS; KNOWN FAMILIAL VARIANTS
81297	MSH2 (MUTS HOMOLOG 2, COLON CANCER, NONPOLYPOSIS TYPE 1) (EG, HEREDITARY NON-POLYPOSIS COLORECTAL CANCER, LYNCH SYNDROME) GENE ANALYSIS; DUPLICATION/DELETION VARIANTS
81298	MSH6 (MUTS HOMOLOG 6 [E. COLI]) (EG, HEREDITARY NON-POLYPOSIS COLORECTAL CANCER, LYNCH SYNDROME) GENE ANALYSIS; FULL SEQUENCE ANALYSIS
81299	MSH6 (MUTS HOMOLOG 6 [E. COLI]) (EG, HEREDITARY NON-POLYPOSIS COLORECTAL CANCER, LYNCH SYNDROME) GENE ANALYSIS; KNOWN FAMILIAL VARIANTS
81300	MSH6 (MUTS HOMOLOG 6 [E. COLI]) (EG, HEREDITARY NON-POLYPOSIS COLORECTAL CANCER, LYNCH SYNDROME) GENE ANALYSIS; DUPLICATION/DELETION VARIANTS
81301	MICROSATELLITE INSTABILITY ANALYSIS (EG, HEREDITARY NON-POLYPOSIS COLORECTAL CANCER, LYNCH SYNDROME) OF MARKERS FOR MISMATCH REPAIR DEFICIENCY (EG, BAT25, BAT26), INCLUDES COMPARISON OF NEOPLASTIC AND NORMAL TISSUE, IF PERFORMED
81305	MYD88 (MYELOID DIFFERENTIATION PRIMARY RESPONSE 88) (EG, WALDENSTROM'S MACROGLOBULINEMIA, LYMPHOPLASMACYTIC LEUKEMIA) GENE ANALYSIS, P.LEU265PRO (L265P) VARIANT
81307	PALB2 (PARTNER AND LOCALIZER OF BRCA2) (EG, BREAST AND PANCREATIC CANCER) GENE ANALYSIS; FULL GENE SEQUENCE
81308	PALB2 (PARTNER AND LOCALIZER OF BRCA2) (EG, BREAST AND PANCREATIC CANCER) GENE ANALYSIS; KNOWN FAMILIAL VARIANT
81309	PIK3CA (PHOSPHATIDYLINOSITOL-4, 5-BIPHOSPHATE 3-KINASE, CATALYTIC SUBUNIT ALPHA) (EG, COLORECTAL AND BREAST CANCER) GENE ANALYSIS, TARGETED SEQUENCE ANALYSIS (EG, EXONS 7, 9, 20)
81310	NPM1 (NUCLEOPHOSMIN) (EG, ACUTE MYELOID LEUKEMIA) GENE ANALYSIS, EXON 12 VARIANTS
81311	NRAS (NEUROBLASTOMA RAS VIRAL [V-RAS] ONCOGENE HOMOLOG) (EG, COLORECTAL CARCINOMA), GENE ANALYSIS, VARIANTS IN EXON 2 (EG, CODONS 12 AND 13) AND EXON 3 (EG, CODON 61)
81314	PDGFRA (PLATELET-DERIVED GROWTH FACTOR RECEPTOR, ALPHA POLYPEPTIDE) (EG, GASTROINTESTINAL STROMAL TUMOR [GIST]), GENE ANALYSIS, TARGETED SEQUENCE ANALYSIS (EG, EXONS 12, 18)
81315	PML/RARALPHA, (T(15;17)), (PROMYELOCYTIC LEUKEMIA/RETINOIC ACID RECEPTOR ALPHA) (EG, PROMYELOCYTIC LEUKEMIA) TRANSLOCATION ANALYSIS; COMMON BREAKPOINTS (EG, INTRON 3 AND INTRON 6), QUALITATIVE OR QUANTITATIVE

CPT	Description
81316	PML/RARALPHA, (T(15;17)), (PROMYELOCYTIC LEUKEMIA/RETINOIC ACID RECEPTOR ALPHA) (EG, PROMYELOCYTIC LEUKEMIA) TRANSLOCATION ANALYSIS; SINGLE BREAKPOINT (EG, INTRON 3, INTRON 6 OR EXON 6), QUALITATIVE OR QUANTITATIVE
81317	PMS2 (POSTMEIOTIC SEGREGATION INCREASED 2 [S. CEREVISIAE]) (EG, HEREDITARY NON-POLYPOSIS COLORECTAL CANCER, LYNCH SYNDROME) GENE ANALYSIS; FULL SEQUENCE ANALYSIS
81318	PMS2 (POSTMEIOTIC SEGREGATION INCREASED 2 [S. CEREVISIAE]) (EG, HEREDITARY NON-POLYPOSIS COLORECTAL CANCER, LYNCH SYNDROME) GENE ANALYSIS; KNOWN FAMILIAL VARIANTS
81319	PMS2 (POSTMEIOTIC SEGREGATION INCREASED 2 [S. CEREVISIAE]) (EG, HEREDITARY NON-POLYPOSIS COLORECTAL CANCER, LYNCH SYNDROME) GENE ANALYSIS; DUPLICATION/DELETION VARIANTS
81320	PLCG2 (PHOSPHOLIPASE C GAMMA 2) (EG, CHRONIC LYMPHOCYTIC LEUKEMIA) GENE ANALYSIS, COMMON VARIANTS (EG, R665W, S707F, L845F)
81321	PTEN (PHOSPHATASE AND TENSIN HOMOLOG) (EG, COWDEN SYNDROME, PTEN HAMARTOMA TUMOR SYNDROME) GENE ANALYSIS; FULL SEQUENCE ANALYSIS
81322	PTEN (PHOSPHATASE AND TENSIN HOMOLOG) (EG, COWDEN SYNDROME, PTEN HAMARTOMA TUMOR SYNDROME) GENE ANALYSIS; KNOWN FAMILIAL VARIANT
81323	PTEN (PHOSPHATASE AND TENSIN HOMOLOG) (EG, COWDEN SYNDROME, PTEN HAMARTOMA TUMOR SYNDROME) GENE ANALYSIS; DUPLICATION/DELETION VARIANT
81327	SEPT9 (SEPTIN9) (EG, COLORECTAL CANCER) PROMOTER METHYLATION ANALYSIS
81334	RUNX1 (RUNT RELATED TRANSCRIPTION FACTOR 1) (EG, ACUTE MYELOID LEUKEMIA, FAMILIAL PLATELET DISORDER WITH ASSOCIATED MYELOID MALIGNANCY) GENE ANALYSIS, TARGETED SEQUENCE ANALYSIS (EG, EXONS 3-8)
81338	MPL (MPL PROTO-ONCOGENE, THROMBOPOIETIN RECEPTOR) (EG, MYELOPROLIFERATIVE DISORDER) GENE ANALYSIS; COMMON VARIANTS (EG, W515A, W515K, W515L, W515R)
81339	MPL (MPL PROTO-ONCOGENE, THROMBOPOIETIN RECEPTOR) (EG, MYELOPROLIFERATIVE DISORDER) GENE ANALYSIS; SEQUENCE ANALYSIS, EXON 10
81340	TRB@ (T CELL ANTIGEN RECEPTOR, BETA) (EG, LEUKEMIA AND LYMPHOMA), GENE REARRANGEMENT ANALYSIS TO DETECT ABNORMAL CLONAL POPULATION(S); USING AMPLIFICATION METHODOLOGY (EG, POLYMERASE CHAIN REACTION)
81341	TRB@ (T CELL ANTIGEN RECEPTOR, BETA) (EG, LEUKEMIA AND LYMPHOMA), GENE REARRANGEMENT ANALYSIS TO DETECT ABNORMAL CLONAL POPULATION(S); USING DIRECT PROBE METHODOLOGY (EG, SOUTHERN BLOT)
81342	TRG@ (T CELL ANTIGEN RECEPTOR, GAMMA) (EG, LEUKEMIA AND LYMPHOMA), GENE REARRANGEMENT ANALYSIS, EVALUATION TO DETECT ABNORMAL CLONAL POPULATION(S)
81345	TERT (TELOMERASE REVERSE TRANSCRIPTASE) (EG, THYROID CARCINOMA, GLIOBLASTOMA MULTIFORME) GENE ANALYSIS, TARGETED SEQUENCE ANALYSIS (EG, PROMOTER REGION)

CPT	Description
81347	SF3B1 (SPLICING FACTOR [3B] SUBUNIT B1) (EG, MYELODYSPLASTIC SYNDROME/ACUTE MYELOID LEUKEMIA) GENE ANALYSIS, COMMON VARIANTS (EG, A672T, E622D, L833F, R625C, R625L)
81348	SRSF2 (SERINE AND ARGININE-RICH SPLICING FACTOR 2) (EG, MYELODYSPLASTIC SYNDROME, ACUTE MYELOID LEUKEMIA) GENE ANALYSIS, COMMON VARIANTS (EG, P95H, P95L)
81351	TP53 (TUMOR PROTEIN 53) (EG, LI-FRAUMENI SYNDROME) GENE ANALYSIS; FULL GENE SEQUENCE
81352	TP53 (TUMOR PROTEIN 53) (EG, LI-FRAUMENI SYNDROME) GENE ANALYSIS; TARGETED SEQUENCE ANALYSIS (EG, 4 ONCOLOGY)
81353	TP53 (TUMOR PROTEIN 53) (EG, LI-FRAUMENI SYNDROME) GENE ANALYSIS; KNOWN FAMILIAL VARIANT
81357	U2AF1 (U2 SMALL NUCLEAR RNA AUXILIARY FACTOR 1) (EG, MYELODYSPLASTIC SYNDROME, ACUTE MYELOID LEUKEMIA) GENE ANALYSIS, COMMON VARIANTS (EG, S34F, S34Y, Q157R, Q157P)
81360	ZRSR2 (ZINC FINGER CCCH-TYPE, RNA BINDING MOTIF AND SERINE/ARGININE-RICH 2) (EG, MYELODYSPLASTIC SYNDROME, ACUTE MYELOID LEUKEMIA) GENE ANALYSIS, COMMON VARIANT(S) (EG, E65FS, E122FS, R448FS)
81379	HLA CLASS I TYPING, HIGH RESOLUTION (IE, ALLELES OR ALLELE GROUPS); COMPLETE (IE, HLA-A, -B, AND -C)
81380	HLA CLASS I TYPING, HIGH RESOLUTION (IE, ALLELES OR ALLELE GROUPS); ONE LOCUS (EG, HLA-A, -B, OR -C), EACH
81403	MOLECULAR PATHOLOGY PROCEDURE, LEVEL 4 (EG, ANALYSIS OF SINGLE EXON BY DNA SEQUENCE ANALYSIS, ANALYSIS OF >10 AMPLICONS USING MULTIPLEX PCR IN 2 OR MORE INDEPENDENT REACTIONS, MUTATION SCANNING OR DUPLICATION/DELETION VARIANTS OF 2-5 EXONS)
81408	MOLECULAR PATHOLOGY PROCEDURE, LEVEL 9 (EG, ANALYSIS OF >50 EXONS IN A SINGLE GENE BY DNA SEQUENCE ANALYSIS)
81425	GENOME (EG, UNEXPLAINED CONSTITUTIONAL OR HERITABLE DISORDER OR SYNDROME); SEQUENCE ANALYSIS
81432	HEREDITARY BREAST CANCER-RELATED DISORDERS (EG, HEREDITARY BREAST CANCER, HEREDITARY OVARIAN CANCER, HEREDITARY ENDOMETRIAL CANCER, HEREDITARY PANCREATIC CANCER, HEREDITARY PROSTATE CANCER), GENOMIC SEQUENCE ANALYSIS PANEL, 5 OR MORE GENES, INTERROGATION FOR SEQUENCE VARIANTS AND COPY NUMBER VARIANTS
81435	HEREDITARY COLON CANCER-RELATED DISORDERS (EG, LYNCH SYNDROME, PTEN HAMARTOMA SYNDROME, COWDEN SYNDROME, FAMILIAL ADENOMATOSIS POLYPOSIS), GENOMIC SEQUENCE ANALYSIS PANEL, 5 OR MORE GENES, INTERROGATION FOR SEQUENCE VARIANTS AND COPY NUMBER VARIANTS

CPT	Description
81437	HEREDITARY NEUROENDOCRINE TUMOR-RELATED DISORDERS (EG, MEDULLARY THYROID CARCINOMA, PARATHYROID CARCINOMA, MALIGNANT PHEOCHROMOCYTOMA OR PARAGANGLIOMA), GENOMIC SEQUENCE ANALYSIS PANEL, 5 OR MORE GENES, INTERROGATION FOR SEQUENCE VARIANTS AND COPY NUMBER VARIANTS
81449	SOLID ORGAN NEOPLASM, GENOMIC SEQUENCE ANALYSIS PANEL, 5-50 GENES, INTERROGATION FOR SEQUENCE VARIANTS AND COPY NUMBER VARIANTS OR REARRANGEMENTS, IF PERFORMED; RNA ANALYSIS
81455	TGSAP SO/HL 51/> DNA/DNA&RNA
81456	SOLID ORGAN OR HEMATOLYMPHOID NEOPLASM OR DISORDER, 51 OR GREATER GENES, GENOMIC SEQUENCE ANALYSIS PANEL, INTERROGATION FOR SEQUENCE VARIANTS AND COPY NUMBER VARIANTS OR REARRANGEMENTS, OR ISOFORM EXPRESSION OR MRNA EXPRESSION LEVELS, IF PERFORMED; RNA ANALYSIS
81500	ONCOLOGY (OVARIAN), BIOCHEMICAL ASSAYS OF TWO PROTEINS (CA-125 AND HE4), UTILIZING SERUM, WITH MENOPAUSAL STATUS, ALGORITHM REPORTED AS A RISK SCORE
81503	ONCOLOGY (OVARIAN), BIOCHEMICAL ASSAYS OF FIVE PROTEINS (CA-125, APOLIPOPROTEIN A1, BETA-2 MICROGLOBULIN, TRANSFERRIN, AND PRE-ALBUMIN), UTILIZING SERUM, ALGORITHM REPORTED AS A RISK SCORE
81504	ONCOLOGY (TISSUE OF ORIGIN), MICROARRAY GENE EXPRESSION PROFILING OF > 2000 GENES, UTILIZING FORMALIN-FIXED PARAFFIN-EMBEDDED TISSUE, ALGORITHM REPORTED AS TISSUE SIMILARITY SCORES
81518	ONCOLOGY (BREAST), MRNA, GENE EXPRESSION PROFILING BY REAL-TIME RT-PCR OF 11 GENES (7 CONTENT AND 4 HOUSEKEEPING), UTILIZING FORMALIN-FIXED PARAFFIN-EMBEDDED TISSUE, ALGORITHMS REPORTED AS PERCENTAGE RISK FOR METASTATIC RECURRENCE AND LIKELIHOOD OF BENEFIT FROM EXTENDED ENDOCRINE THERAPY
81519	ONCOLOGY (BREAST), MRNA, GENE EXPRESSION PROFILING BY REAL-TIME RT-PCR OF 21 GENES, UTILIZING FORMALIN-FIXED PARAFFIN-EMBEDDED TISSUE, ALGORITHM REPORTED AS RECURRENCE SCORE
81520	ONCOLOGY (BREAST), MRNA GENE EXPRESSION PROFILING BY HYBRID CAPTURE OF 58 GENES (50 CONTENT AND 8 HOUSEKEEPING), UTILIZING FORMALIN-FIXED PARAFFIN-EMBEDDED TISSUE, ALGORITHM REPORTED AS A RECURRENCE RISK SCORE
81521	ONCOLOGY (BREAST), MRNA, MICROARRAY GENE EXPRESSION PROFILING OF 70 CONTENT GENES AND 465 HOUSEKEEPING GENES, UTILIZING FRESH FROZEN OR FORMALIN-FIXED PARAFFIN-EMBEDDED TISSUE, ALGORITHM REPORTED AS INDEX RELATED TO RISK OF DISTANT METASTASIS
81522	ONCOLOGY (BREAST), MRNA, GENE EXPRESSION PROFILING BY RT-PCR OF 12 GENES (8 CONTENT AND 4 HOUSEKEEPING), UTILIZING FORMALIN-FIXED PARAFFIN-EMBEDDED TISSUE, ALGORITHM REPORTED AS RECURRENCE RISK SCORE

CPT	Description
81523	ONCOLOGY (BREAST), MRNA, NEXT-GENERATION SEQUENCING GENE EXPRESSION PROFILING OF 70 CONTENT GENES AND 31 HOUSEKEEPING GENES, UTILIZING FORMALIN-FIXED PARAFFIN-EMBEDDED TISSUE, ALGORITHM REPORTED AS INDEX RELATED TO RISK TO DISTANT METASTASIS
81525	ONCOLOGY (COLON), MRNA, GENE EXPRESSION PROFILING BY REAL-TIME RT-PCR OF 12 GENES (7 CONTENT AND 5 HOUSEKEEPING), UTILIZING FORMALIN-FIXED PARAFFIN-EMBEDDED TISSUE, ALGORITHM REPORTED AS A RECURRENCE SCORE
81529	ONCOLOGY (CUTANEOUS MELANOMA), MRNA, GENE EXPRESSION PROFILING BY REAL-TIME RT-PCR OF 31 GENES (28 CONTENT AND 3 HOUSEKEEPING), UTILIZING FORMALIN-FIXED PARAFFIN-EMBEDDED TISSUE, ALGORITHM REPORTED AS RECURRENCE RISK, INCLUDING LIKELIHOOD OF SENTINEL LYMPH NODE METASTASIS
81535	ONCOLOGY (GYNECOLOGIC), LIVE TUMOR CELL CULTURE AND CHEMOTHERAPEUTIC RESPONSE BY DAPI STAIN AND MORPHOLOGY, PREDICTIVE ALGORITHM REPORTED AS A DRUG RESPONSE SCORE; FIRST SINGLE DRUG OR DRUG COMBINATION
81536	ONCOLOGY (GYNECOLOGIC), LIVE TUMOR CELL CULTURE AND CHEMOTHERAPEUTIC RESPONSE BY DAPI STAIN AND MORPHOLOGY, PREDICTIVE ALGORITHM REPORTED AS A DRUG RESPONSE SCORE; EACH ADDITIONAL SINGLE DRUG OR DRUG COMBINATION (LIST SEPARATELY IN ADDITION TO CODE FOR PRIMARY PROCEDURE)
81538	ONCOLOGY (LUNG), MASS SPECTROMETRIC 8-PROTEIN SIGNATURE, INCLUDING AMYLOID A, UTILIZING SERUM, PROGNOSTIC AND PREDICTIVE ALGORITHM REPORTED AS GOOD VERSUS POOR OVERALL SURVIVAL
81540	ONCOLOGY (TUMOR OF UNKNOWN ORIGIN), MRNA, GENE EXPRESSION PROFILING BY REAL-TIME RT-PCR OF 92 GENES (87 CONTENT AND 5 HOUSEKEEPING) TO CLASSIFY TUMOR INTO MAIN CANCER TYPE AND SUBTYPE, UTILIZING FORMALIN-FIXED PARAFFIN-EMBEDDED TISSUE, ALGORITHM REPORTED AS A PROBABILITY OF A PREDICTED MAIN CANCER TYPE AND SUBTYPE
81541	ONCOLOGY (PROSTATE), MRNA GENE EXPRESSION PROFILING BY REAL-TIME RT-PCR OF 46 GENES (31 CONTENT AND 15 HOUSEKEEPING), UTILIZING FORMALIN-FIXED PARAFFIN-EMBEDDED TISSUE, ALGORITHM REPORTED AS A DISEASE-SPECIFIC MORTALITY RISK SCORE
81542	ONCOLOGY (PROSTATE), MRNA, MICROARRAY GENE EXPRESSION PROFILING OF 22 CONTENT GENES, UTILIZING FORMALIN-FIXED PARAFFIN-EMBEDDED TISSUE, ALGORITHM REPORTED AS METASTASIS RISK SCORE
81552	ONCOLOGY (UVEAL MELANOMA), MRNA, GENE EXPRESSION PROFILING BY REAL-TIME RT-PCR OF 15 GENES (12 CONTENT AND 3 HOUSEKEEPING), UTILIZING FINE NEEDLE ASPIRATE OR FORMALIN-FIXED PARAFFIN-EMBEDDED TISSUE, ALGORITHM REPORTED AS RISK OF METASTASIS
88341	Additional antibody staining for surgical pathology interpretation
88360	Tumor immunohistochem/manual
0037U	FoundationOne CDx (TMB, NTRK1, NTRK2 and NTRK3, MSI-High)
0239U	FoundationOne Liquid CDx
0244U	Oncotype MAP PanCancer Tissue Test

CPT	Description
0018U	ONC THYR 10 MICRORNA SEQ ALG
0131U	Hereditary breast cancer-related disorders (such as hereditary breast cancer, hereditary ovarian cancer, hereditary endometrial cancer), targeted mRNA sequence analysis panel (13 genes)

Table C2. Codes Used to Identify Autoimmune Tests

CPT	Description
81332	SERPINA1 (SERPIN PEPTIDASE INHIBITOR, CLADE A, ALPHA-1 ANTIPROTEINASE, ANTITRYPSIN, MEMBER 1) (EG, ALPHA-1-ANTITRYPSIN DEFICIENCY), GENE ANALYSIS, COMMON VARIANTS (EG, *S AND *Z)
83520	Immunoassay quantification of non-infectious analytes
81490	AUTOIMMUNE RA ALYS 12 BMRK
81404	MOPATH PROCEDURE LEVEL 5

Table C3. Codes Used to Identify Behavioral Tests

CPT	Description
81331	SNRPN/UBE3A (SMALL NUCLEAR RIBONUCLEOPROTEIN POLYPEPTIDE N AND UBIQUITIN PROTEIN LIGASE E3A) (EG, PRADER-WILLI SYNDROME AND/OR ANGELMAN SYNDROME), METHYLATION ANALYSIS
81470	X-LINKED INTELLECTUAL DISABILITY (XLID) (EG, SYNDROMIC AND NON-SYNDROMIC XLID); GENOMIC SEQUENCE ANALYSIS PANEL, MUST INCLUDE SEQUENCING OF AT LEAST 60 GENES, INCLUDING ARX, ATRX, CDKL5, FGD1, FMR1, HUWE1, IL1RAPL, KDM5C, L1CAM, MECP2, MED12, MID1, OCRL, RPS6KA3, AND SLC16A2
81471	X-LINKED INTELLECTUAL DISABILITY (XLID) (EG, SYNDROMIC AND NON-SYNDROMIC XLID); DUPLICATION/DELETION GENE ANALYSIS, MUST INCLUDE ANALYSIS OF AT LEAST 60 GENES, INCLUDING ARX, ATRX, CDKL5, FGD1, FMR1, HUWE1, IL1RAPL, KDM5C, L1CAM, MECP2, MED12, MID1, OCRL, RPS6KA3, AND SLC16A2
0345U	PSYC GENOM ALYS PNL 15 GEN
0441U	PSYC GENOM ALYS PNL 15 GEN

Table C4. Codes Used to Identify Cardiovascular Tests

CPT	Description
81410	AORTIC DYSFUNCTION OR DILATION (EG, MARFAN SYNDROME, LOEYS DIETZ SYNDROME, EHLER DANLOS SYNDROME TYPE IV, ARTERIAL TORTUOSITY SYNDROME); GENOMIC SEQUENCE ANALYSIS PANEL, MUST INCLUDE SEQUENCING OF AT LEAST 9 GENES, INCLUDING FBN1, TGFBR1, TGFBR2, COL3A1, MYH11, ACTA2, SLC2A10, SMAD3, AND MYLK

CPT	Description
81411	AORTIC DYSFUNCTION OR DILATION (EG, MARFAN SYNDROME, LOEYS DIETZ SYNDROME, EHLER DANLOS SYNDROME TYPE IV, ARTERIAL TORTUOSITY SYNDROME); DUPLICATION/DELETION ANALYSIS PANEL, MUST INCLUDE ANALYSES FOR TGFBR1, TGFBR2, MYH11, AND COL3A1
81413	CARDIAC ION CHANNELOPATHIES (EG, BRUGADA SYNDROME, LONG QT SYNDROME, SHORT QT SYNDROME, CATECHOLAMINERGIC POLYMORPHIC VENTRICULAR TACHYCARDIA); GENOMIC SEQUENCE ANALYSIS PANEL, MUST INCLUDE SEQUENCING OF AT LEAST 10 GENES, INCLUDING ANK2, CASQ2, CAV3, KCNE1, KCNE2, KCNH2, KCNJ2, KCNQ1, RYR2, AND SCN5A
81414	CARDIAC ION CHANNELOPATHIES (EG, BRUGADA SYNDROME, LONG QT SYNDROME, SHORT QT SYNDROME, CATECHOLAMINERGIC POLYMORPHIC VENTRICULAR TACHYCARDIA); DUPLICATION/DELETION GENE ANALYSIS PANEL, MUST INCLUDE ANALYSIS OF AT LEAST 2 GENES, INCLUDING KCNH2 AND KCNQ1
81439	HEREDITARY CARDIOMYOPATHY (EG, HYPERTROPHIC CARDIOMYOPATHY, DILATED CARDIOMYOPATHY, ARRHYTHMOGENIC RIGHT VENTRICULAR CARDIOMYOPATHY), GENOMIC SEQUENCE ANALYSIS PANEL, MUST INCLUDE SEQUENCING OF AT LEAST 5 CARDIOMYOPATHY-RELATED GENES (EG, DSG2, MYBPC3, MYH7, PKP2, TTN)
81493	CORONARY ARTERY DISEASE, MRNA, GENE EXPRESSION PROFILING BY REAL-TIME RT-PCR OF 23 GENES, UTILIZING WHOLE PERIPHERAL BLOOD, ALGORITHM REPORTED AS A RISK SCORE
81595	CARDIOLOGY (HEART TRANSPLANT), MRNA, GENE EXPRESSION PROFILING BY REAL-TIME QUANTITATIVE PCR OF 20 GENES (11 CONTENT AND 9 HOUSEKEEPING), UTILIZING SUBFRACTION OF PERIPHERAL BLOOD, ALGORITHM REPORTED AS A REJECTION RISK SCORE
84478	Triglycerides test for cardiovascular risk assessment
0119U	CARDIOLOGY, CERAMIDES BY LIQUID CHROMATOGRAPHY-TANDEM MASS SPECTROMETRY, PLASMA, QUANTITATIVE REPORT WITH RISK SCORE FOR MAJOR CARDIOVASCULAR EVENTS

Table C5. Codes Used to Identify Infectious Disease Tests

CPT	Description
83529	Interleukin-6
84145	Procalcitonin (PCT) serum level test
0351U	MeMed BV®
0427U	Early Sepsis Indicator, Beckman Coulter, Inc
0441U	IntelliSep® test, Cytovale®

Table C6. Codes Used to Identify Kidney Disease Tests

CPT	Description
81405	Genetic panels
0385U	Testing for risk of developing diabetic kidney disease

Table C7. Codes Used to Identify Metabolic Tests

CPT	Description
81205	BCKDHB (BRANCHED-CHAIN KETO ACID DEHYDROGENASE E1, BETA POLYPEPTIDE) (EG, MAPLE SYRUP URINE DISEASE) GENE ANALYSIS, COMMON VARIANTS (EG, R183P, G278S, E422X)
81250	G6PC (GLUCOSE-6-PHOSPHATASE, CATALYTIC SUBUNIT) (EG, GLYCOGEN STORAGE DISEASE, TYPE 1A, VON GIERKE DISEASE) GENE ANALYSIS, COMMON VARIANTS (EG, R83C, Q347X)
81251	GBA (GLUCOSIDASE, BETA, ACID) (EG, GAUCHER DISEASE) GENE ANALYSIS, COMMON VARIANTS (EG, N370S, 84GG, L444P, IVS2+1G>A)
81255	HEXA (HEXOSAMINIDASE A [ALPHA POLYPEPTIDE]) (EG, TAY-SACHS DISEASE) GENE ANALYSIS, COMMON VARIANTS (EG, 1278INSTATC, 1421+1G>C, G269S)
81256	HFE (HEMOCHROMATOSIS) (EG, HEREDITARY HEMOCHROMATOSIS) GENE ANALYSIS, COMMON VARIANTS (EG, C282Y, H63D)
81290	MCOLN1 (MUCOLIPIN 1) (EG, MUCOLIPIDOSIS, TYPE IV) GENE ANALYSIS, COMMON VARIANTS (EG, IVS3-2A>G, DEL6.4KB)
81330	SMPD1 (SPHINGOMYELIN PHOSPHODIESTERASE 1, ACID LYSOSOMAL) (EG, NIEMANN-PICK DISEASE, TYPE A) GENE ANALYSIS, COMMON VARIANTS (EG, R496L, L302P, FSP330)
81400	MOLECULAR PATHOLOGY PROCEDURE, LEVEL 1 (EG, IDENTIFICATION OF SINGLE GERMLINE VARIANT [EG, SNP] BY TECHNIQUES SUCH AS RESTRICTION ENZYME DIGESTION OR MELT CURVE ANALYSIS)

Table C8. Codes Used to Identify ECT Tests

CPT	Description
81412	ASHKENAZI JEWISH ASSOCIATED DISORDERS (EG, BLOOM SYNDROME, CANAVAN DISEASE, CYSTIC FIBROSIS, FAMILIAL DYSAUTONOMIA, FANCONI ANEMIA GROUP C, GAUCHER DISEASE, TAY-SACHS DISEASE), GENOMIC SEQUENCE ANALYSIS PANEL, MUST INCLUDE SEQUENCING OF AT LEAST 9 GENES, INCLUDING ASPA, BLM, CFTR, FANCC, GBA, HEXA, IKBKAP, MCOLN1, AND SMPD1

CPT	Description
81443	GENETIC TESTING FOR SEVERE INHERITED CONDITIONS (EG, CYSTIC FIBROSIS, ASHKENAZI JEWISH-ASSOCIATED DISORDERS [EG, BLOOM SYNDROME, CANAVAN DISEASE, FANCONI ANEMIA TYPE C, MUCOLIPIDOSIS TYPE VI, GAUCHER DISEASE, TAY-SACHS DISEASE], BETA HEMOGLOBINOPATHIES, PHENYLKETONURIA, GALACTOSEMIA), GENOMIC SEQUENCE ANALYSIS PANEL, MUST INCLUDE SEQUENCING OF AT LEAST 15 GENES (EG, ACADM, ARSA, ASPA, ATP7B, BCKDHA, BCKDHB, BLM, CFTR, DHCR7, FANCC, G6PC, GAA, GALT, GBA, GBE1, HBB, HEXA, IKBKAP, MCOLN1, PAH)
81479	UNLISTED MOLECULAR PATHOLOGY PROCEDURE
0400U	Obstetrics (expanded carrier screening), 145 genes by next generation sequencing, fragment analysis and multiplex ligation dependent probe amplification, DNA, reported as carrier positive or negative

Appendix D. Additional Race/Ethnicity Detail

Table D1. Utilization of Biomarker Testing by Race/Ethnicity - Medicaid vs. Commercial

Race/ Ethnicity	Utilizers/ Participants	%	Cumulative %	Claims Cost	%	Cumulative %	Cost/ Utilizer	Total Market (Medicaid, Large Group Fully Insured, or State of Maryland)			Uptake
								Total	%	Difference in Share of Utilizers vs. of Total Market	
Medicaid											
White	1,784	40.3%	40.3%	$319,078	34.6%	34.6%	$179	488,982	26.1%	14.2%	0.4%
Black	1,701	38.4%	78.8%	$384,726	41.8%	76.4%	$226	826,390	44.1%	-5.7%	0.2%
Hispanic	470	10.6%	89.4%	$98,493	10.7%	87.1%	$210	361,990	19.3%	-8.7%	0.1%
Asian	220	5.0%	94.4%	$63,364	6.9%	94.0%	$288	108,628	5.8%	-0.8%	0.2%
Missing/ Other/ Unknown	160	3.6%	98.0%	$37,937	4.1%	98.1%	$237	14,587	0.8%	2.8%	1.1%
Native American/ Alaskan	47	1.1%	99.0%	$9,690	1.1%	99.2%	$206	17,872	1.0%	0.1%	0.3%
Two or More Races	43	1.0%	100%	$7,743	0.8%	100%	$180	21,346	1.1%	-0.2%	0.2%
Black & White	0	0.0%	100%	$0	0.0%	100%	N/A	30,836	1.6%	-1.6%	0.0%
Pacific Islander/ Native Hawaiian	0	0.0%	100%	$0	0.0%	100%	N/A	2,395	0.1%	-0.1%	0.0%
Total	**4,425**	**100%**	**100%**	**$921,031**	**100%**	**100%**	**$208**	**1,873,026**	**100%**	**0.0%**	**0.2%**
Commercial - Large Group, Fully Insured											
White	3,220	45.1%	45.1%	$1,433,301	45.1%	45.1%	$445	141,043	28.8%	16.3%	2.3%
Missing/ Other/ Unknown	2,555	35.7%	80.8%	$1,076,455	33.9%	78.9%	$421	238,367	48.6%	-12.9%	1.1%
Black	827	11.6%	92.4%	$420,453	13.2%	92.1%	$508	68,166	13.9%	-2.3%	1.2%
Hispanic	312	4.4%	96.7%	$119,277	3.8%	95.9%	$382	25,162	5.1%	-0.8%	1.2%
Asian	194	2.7%	99.5%	$112,862	3.5%	99.4%	$582	14,223	2.9%	-0.2%	1.4%
Two or More Races	26	0.4%	99.8%	$13,379	0.4%	99.9%	$515	1,910	0.4%	0.0%	1.4%
Native American/	*	*	*	$3,969	0.1%	100%	*	874	0.2%	*	*

Race/ Ethnicity	Utilizers/ Participants	%	Cumulative %	Claims Cost	%	Cumulative %	Cost/ Utilizer	Total Market (Medicaid, Large Group Fully Insured, or State of Maryland)			Uptake
								Total	%	Difference in Share of Utilizers vs. of Total Market	
Alaskan											
Pacific Islander /Native Hawaiian	*	*	100%	$175	0.0%	100%	*	572	0.1%	*	*
Black & White	0	0.0%	100%	$0	0.0%	100%	N/A	0	0.0%	0.0%	N/A
Total	**7,147**	**100%**	**100%**	**$3,179,871**	**100%**	**100%**	**$445**	**490,317**	**100%**	**0.0%**	**1.5%**
Commercial - State of Maryland											
White	3,427	58.2%	58.2%	$1,519,211	59.6%	59.6%	$443	134,109	51.6%	6.6%	2.6%
Black	1,401	26.8%	85.1%	$678,986	26.6%	86.3%	$485	71,338	27.4%	-0.6%	2.0%
Missing/ Other/ Unknown	386	6.5%	91.5%	$139,301	5.5%	91.7%	$361	34,396	13.2%	-6.8%	1.1%
Asian	214	4.1%	95.6%	$110,018	4.3%	96.0%	$514	10,142	3.9%	0.2%	2.1%
Hispanic	175	3.3%	98.9%	$84,595	3.3%	99.4%	$483	7,299	2.8%	0.5%	2.4%
Two or More Races	43	0.7%	99.6%	$15,279	0.6%	100%	$355	1,613	0.6%	0.1%	2.7%
Native American/ Alaskan	*	*	*	$737	0.0%	100%	*	691	0.3%	*	*
Pacific Islander/ Native Hawaiian	*	*	100%	$164	0.0%	100%	*	311	0.1%	*	*
Black & White	0	0.0%	100%	$0	0.0%	100%	N/A	0	0.0%	0.0%	N/A
Total	**5,659**	**100%**	**100%**	**$2,548,291**	**100%**	**100%**	**$450**	**259,899**	**100%**	**0.0%**	**2.2%**

Table D2. Utilization of Biomarker Testing in the Large Group Fully Insured Market by Race/Ethnicity and Disease Prevalence

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%		733	20.7%	850	1.16	$29	22.1%	$24,225
Behavioral	30,223	37.4%		35	1.0%	35	1.00	$632	0.1%	$22,123
Cancer	2,815	3.5%		1,857	52.5%	3,515	1.89	$284	66.0%	$998,253
Cardiovascular	8,915	11.0%		197	5.6%	374	1.90	$8	2.2%	$2,846
ECT	0	0.0%		384	10.9%	406	1.06	$850	N/A	$345,031
Infectious	773	1.0%		126	3.6%	134	1.06	$215	16.3%	$28,745
Kidney	1,837	2.3%		17	0.5%	17	1.00	$146	0.9%	$2,475
Metabolic	32,904	40.7%		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%		161	17.6%	194	1.20	$32	13.9%	$6,278
Behavioral	6,747	21.0%		*	*	*	1.00	*	*	$1,521
Cancer	1,243	3.9%		470	51.4%	937	1.99	$303	37.8%	$283,549
Cardiovascular	3,126	9.7%		75	8.2%	129	1.72	$119	2.4%	$15,355
ECT	0	0.0%		113	12.3%	121	1.07	$824	N/A	$99,689
Infectious	1,051	3.3%		49	5.4%	60	1.22	$197	4.7%	$11,814
Kidney	1,597	5.0%		*	*	*	1.00	$0	*	$0
Metabolic	17,202	53.5%		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**
Hispanic Participants										
Autoimmune	343	3.5%		66	19.4%	72	1.09	$18	19.2%	$1,319
Behavioral	2,462	25.5%		*	*	*	1.00	*	*	$3,042

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
Cancer	249	2.6%		156	45.7%	299	1.92	$281	62.7%	$83,881
Cardiovascular	791	8.2%		24	7.0%	29	1.21	$3	3.0%	$88
ECT	0	0.0%		44	12.9%	45	1.02	$501	N/A	$22,529
Infectious	204	2.1%		18	5.3%	22	1.22	$283	8.8%	$6,224
Kidney	290	3.0%		*	*	*	1.00	*	*	$310
Metabolic	5,334	55.1%		28	8.2%	60	2.14	$31	0.5%	$1,884
Total	**9,673**	**100%**	**312**	**341**	**100%**	**532**	**1.56**	**$224**	**3.5%**	**$119,276**
All Other Races/Ethnicities										
Autoimmune	3,168	3.7%		672	20.9%	781	1.16	$36	21.2%	$28,022
Behavioral	31,651	36.8%		39	1.2%	40	1.03	$960	0.1%	$38,406
Cancer	2,386	2.8%		1,312	40.8%	2,385	1.82	$285	55.0%	$680,440
Cardiovascular	7,103	8.2%		208	6.5%	309	1.49	$63	2.9%	$19,372
ECT	0	0.0%		595	18.5%	619	1.04	$659	N/A	$408,121
Infectious	1,200	1.4%		145	4.5%	191	1.32	$86	12.1%	$16,519
Kidney	2,151	2.5%		15	0.5%	15	1.00	$114	0.7%	$1,706
Metabolic	38,452	44.7%		231	7.2%	377	1.63	$38	0.6%	$14,255
Total	**86,111**	**100%**	**2,555**	**3,217**	**100%**	**4,717**	**1.47**	**$256**	**3.7%**	**$1,206,841**
Total										
Autoimmune	7,988	3.8%		1,632	20.4%	1,897	1.16	$32	20.4%	$59,844
Behavioral	71,083	34.1%		83	1.0%	84	1.01	$775	0.1%	$65,092
Cancer	6,693	3.2%		3,795	47.4%	7,136	1.88	$287	56.7%	$2,046,123
Cardiovascular	19,935	9.6%		504	6.3%	841	1.67	$45	2.5%	$37,661
ECT	0	0.0%		1,136	14.2%	1,191	1.05	$735	N/A	$875,370
Infectious	3,228	1.5%		338	4.2%	407	1.20	$156	10.5%	$63,302

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
Kidney	5,875	2.8%		36	0.4%	36	1.00	$125	0.6%	$4,491
Metabolic	93,892	45.0%		485	6.1%	755	1.56	$37	0.5%	$27,986
Total	**208,694**	**100%**	**7,147**	**8,009**	**100%**	**12,347**	**1.54**	**$258**	**3.8%**	**$3,179,869**

Table D3. Utilization of Biomarker Testing in the State of Maryland Market by Race/Ethnicity and Disease Prevalence

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	3,917	3.6%		648	18.0%	738	1.14	$54	16.5%	$39,779
Behavioral	29,707	27.3%		39	1.1%	39	1.00	$749	0.1%	$29,222
Cancer	5,116	4.7%		2,292	63.5%	4,489	1.96	$253	44.8%	$1,137,553
Cardiovascular	15,808	14.5%		234	6.5%	396	1.69	$24	1.5%	$9,377
ECT	0	0.0%		182	5.0%	189	1.04	$1,378	N/A	$260,497
Infectious	1,136	1.0%		158	4.4%	172	1.09	$184	13.9%	$31,604
Kidney	4,774	4.4%		19	0.5%	19	1.00	$190	0.4%	$3,602
Metabolic	48,481	44.5%		37	1.0%	66	1.78	$115	0.1%	$7,577
Total	**108,939**	**100%**	**3,427**	**3,609**	**100%**	**6,108**	**1.69**	**$249**	**3.3%**	**$1,519,211**
Black Participants										
Autoimmune	2,144	3.8%		256	17.6%	277	1.08	$38	11.9%	$10,551
Behavioral	9,989	17.9%		*	*	*	1.00	*	*	$2,857
Cancer	2,791	5.0%		876	60.2%	1,948	2.22	$270	31.4%	$525,876
Cardiovascular	6,727	12.1%		159	10.9%	242	1.52	$31	2.4%	$7,398

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
ECT	0	0.0%		82	5.6%	92	1.12	$1,214	N/A	$111,714
Infectious	1,230	2.2%		63	4.3%	75	1.19	$250	5.1%	$18,727
Kidney	3,916	7.0%		*	*	*	1.00	*	*	$1,239
Metabolic	28,945	51.9%		*	*	*	1.30	*	*	$623
Total	**55,742**	**100%**	**1,401**	**1,454**	**100%**	**2,655**	**1.83**	**$256**	**2.6%**	**$678,985**
Hispanic Participants										
Autoimmune	142	3.2%		49	25.1%	56	1.14	$65	34.5%	$3,663
Behavioral	1,410	31.8%		0	0.0%	0	N/A	$0	0.0%	$0
Cancer	153	3.5%		103	52.8%	162	1.57	$285	67.3%	$46,191
Cardiovascular	448	10.1%		16	8.2%	17	1.06	$173	3.6%	$2,948
ECT	0	0.0%		17	8.7%	17	1.00	$1,754	N/A	$29,817
Infectious	50	1.1%		*	*	*	1.33	*	*	$1,118
Kidney	145	3.3%		*	*	*	1.00	*	*	$478
Metabolic	2,082	47.0%		*	*	*	2.00	*	*	$380
Total	**4,430**	**100%**	**175**	**195**	**100%**	**267**	**1.37**	**$317**	**4.4%**	**$84,595**
All Other Races/Ethnicities										
Autoimmune	663	3.2%		131	19.1%	144	1.10	$34	19.8%	$4,901
Behavioral	5,442	26.0%		*	*	*	1.00	*	*	$1,521
Cancer	798	3.8%		376	54.9%	645	1.72	$290	47.1%	$186,836
Cardiovascular	2,566	12.2%		72	10.5%	109	1.51	$41	2.8%	$4,521
ECT	0	0.0%		62	9.1%	64	1.03	$945	N/A	$60,504
Infectious	330	1.6%		*	*	*	1.15	*	*	$4,880
Kidney	917	4.4%		*	*	*	1.00	*	*	$741
Metabolic	10,253	48.9%		*	*	*	2.30	*	*	$1,595

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
Total	**20,969**	**100%**	**386**	**685**	**100%**	**1,023**	**1.49**	**$260**	**3.3%**	**$265,499**
Total										
Autoimmune	6,866	3.6%		1,084	18.2%	1,215	1.12	$48	15.8%	$58,894
Behavioral	46,548	24.5%		44	0.7%	44	1.00	$764	0.1%	$33,600
Cancer	8,858	4.7%		3,647	61.4%	7,244	1.99	$262	41.2%	$1,896,456
Cardiovascular	25,549	13.4%		481	8.1%	764	1.59	$32	1.9%	$24,244
ECT	0	0.0%		343	5.8%	362	1.06	$1,278	N/A	$462,531
Infectious	2,746	1.4%		250	4.2%	281	1.12	$200	9.1%	$56,329
Kidney	9,752	5.1%		33	0.6%	33	1.00	$184	0.3%	$6,060
Metabolic	89,761	47.2%		61	1.0%	110	1.80	$93	0.1%	$10,175
Total	**190,080**	**100%**	**5,659**	**5,943**	**100%**	**10,053**	**1.69**	**$253**	**3.1%**	**$2,548,290**

Appendix E. Uptake and Cost Assumptions

Table E1. Expected Scenario - Commercial Large Group Fully Insured Market

	2024 Actual	2025	2026	2027	2028	2029	2030	TOTAL	%
Average Members	490,317	504,166	518,407	533,050	548,106	563,588	579,507		
Uptake: % of Total Average Members									
Cancer	0.8%	1.6%	2.5%	3.4%	4.3%	5.1%	**6.0%**		
Behavioral Health	0.0%	0.3%	0.7%	1.0%	1.3%	1.7%	**2.0%**		
Metabolic	0.1%	0.4%	0.7%	1.0%	1.4%	1.7%	**2.0%**		
Infectious Disease	0.1%	0.4%	0.7%	1.0%	1.4%	1.7%	**2.0%**		
Autoimmune	0.3%	0.9%	1.6%	2.2%	2.8%	3.4%	**4.0%**		
Kidney	0.0%	0.3%	0.7%	1.0%	1.3%	1.7%	**2.0%**		
Cardiovascular	0.1%	0.4%	0.7%	1.1%	1.4%	1.7%	**2.0%**		
TOTAL	**1.4%**	**4.5%**	**7.6%**	**10.7%**	**13.8%**	**16.9%**	**20.0%**		
Change (Δ)		3.1%	3.1%	3.1%	3.1%	3.1%	3.1%		
Expanded Carrier Testing (ECT)	0.2%	0.5%	0.8%	1.1%	1.4%	1.7%	**2.0%**		
Uptake: # of Members									
Cancer	3,795	8,293	13,043	18,054	23,338	28,906	34,770	**130,201**	31.5%
Behavioral Health	83	1,752	3,515	5,376	7,339	9,409	11,590	**39,063**	9.5%
Metabolic	485	2,096	3,798	5,594	7,489	9,486	11,590	**40,538**	9.8%
Infectious Disease	338	1,970	3,694	5,514	7,434	9,458	11,590	**39,999**	9.7%
Autoimmune	1,632	4,760	8,062	11,548	15,224	19,099	23,180	**83,506**	20.2%
Kidney	36	1,711	3,481	5,350	7,322	9,400	11,590	**38,891**	9.4%
Cardiovascular	504	2,112	3,811	5,604	7,496	9,490	11,590	**40,608**	9.8%
TOTAL	**6,873**	**22,695**	**39,405**	**57,041**	**75,642**	**95,248**	**115,901**	**412,805**	**100%**
ECT	1,136	2,654	4,257	5,948	7,731	9,611	11,590	**42,927**	
Costs per Test									
Cancer	$287	$318	$352	$390	$432	$479	$531		

	2024 Actual	2025	2026	2027	2028	2029	2030	TOTAL	%
Behavioral Health	$775	$859	$951	$1,054	$1,168	$1,294	$1,434		
Metabolic	$37	$41	$46	$50	$56	$62	$69		
Infectious Disease	$156	$172	$191	$212	$234	$260	$288		
Autoimmune	$32	$35	$39	$43	$48	$53	$58		
Kidney	$125	$138	$153	$170	$188	$208	$231		
Cardiovascular	$45	$50	$55	$61	$67	$75	$83		
TOTAL	**$206**	**$224**	**$247**	**$274**	**$303**	**$335**	**$372**		
ECT	$735	$814	$902	$1,000	$1,108	$1,227	$1,360		
Tests per Member per Year									
Cancer	1.90	1.90	1.90	1.90	1.90	1.90	1.90		
Behavioral Health	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Metabolic	1.60	1.60	1.60	1.60	1.60	1.60	1.60		
Infectious Disease	1.20	1.20	1.20	1.20	1.20	1.20	1.20		
Autoimmune	1.20	1.20	1.20	1.20	1.20	1.20	1.20		
Kidney	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Cardiovascular	1.70	1.70	1.70	1.70	1.70	1.70	1.70		
TOTAL	**1.65**	**1.51**	**1.48**	**1.47**	**1.47**	**1.46**	**1.46**		
ECT	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Claims Costs									
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	57.5%
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	25.1%
Metabolic	$28,766	$137,753	$276,545	$451,331	$669,444	$939,565	$1,271,950	$3,775,354	2.0%
Infectious Disease	$63,083	$407,418	$846,459	$1,399,908	$2,091,119	$2,947,735	$4,002,422	$11,758,144	6.2%
Autoimmune	$61,788	$199,657	$374,736	$594,718	$868,714	$1,207,503	$1,623,821	$4,930,936	2.6%
Kidney	$4,491	$236,555	$533,184	$907,861	$1,376,574	$1,958,253	$2,675,272	$7,692,190	4.0%
Cardiovascular	$38,368	$178,177	$356,193	$580,345	$860,033	$1,206,379	$1,632,527	$4,852,022	2.5%
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**	**100%**
ECT	$834,949	$2,161,303	$3,840,970	$5,946,643	$8,564,414	$11,796,091	$15,761,910	$48,906,280	
Grant 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**	

Table E2. Expected Scenario - State Employee Market

	2024 Actual	2025	2026	2027	2028	2029	2030	TOTAL	%
Average Members	259,899	264,149	268,469	272,860	277,322	281,858	286,467		
Uptake: % of Total Average Members									
Cancer	1.4%	2.2%	2.9%	3.7%	4.5%	5.2%	**6.0%**		
Behavioral Health	0.0%	0.3%	0.7%	1.0%	1.3%	1.7%	**2.0%**		
Metabolic	0.0%	0.4%	0.7%	1.0%	1.3%	1.7%	**2.0%**		
Infectious Disease	0.1%	0.4%	0.7%	1.0%	1.4%	1.7%	**2.0%**		
Autoimmune	0.4%	1.0%	1.6%	2.2%	2.8%	3.4%	**4.0%**		
Kidney	0.0%	0.3%	0.7%	1.0%	1.3%	1.7%	**2.0%**		
Cardiovascular	0.2%	0.5%	0.8%	1.1%	1.4%	1.7%	**2.0%**		
TOTAL	**2.2%**	**5.1%**	**8.1%**	**11.1%**	**14.1%**	**17.0%**	**20.0%**		
Change (Δ)		**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**		
ECT	0.1%	0.4%	0.8%	1.1%	1.4%	1.7%	**2.0%**		
Uptake: # of Members									
Cancer	3,647	5,730	7,881	10,100	12,390	14,752	17,188	**71,689**	33.3%
Behavioral Health	44	918	1,820	2,752	3,713	4,706	5,729	**19,682**	9.1%
Metabolic	61	932	1,832	2,761	3,719	4,709	5,729	**19,743**	9.2%
Infectious Disease	250	1,092	1,962	2,860	3,787	4,743	5,729	**20,423**	9.5%
Autoimmune	1,084	2,679	4,326	6,026	7,781	9,591	11,459	**42,946**	19.9%
Kidney	33	908	1,813	2,746	3,709	4,704	5,729	**19,642**	9.1%
Cardiovascular	481	1,288	2,121	2,981	3,869	4,785	5,729	**21,254**	9.9%
TOTAL	**5,600**	**13,548**	**21,754**	**30,226**	**38,968**	**47,988**	**57,293**	**215,378**	**100%**
ECT	343	1,171	2,026	2,909	3,820	4,760	5,729		
Costs per Test									
Cancer	$262	$290	$321	$356	$395	$437	$484		
Behavioral Health	$764	$846	$937	$1,039	$1,151	$1,275	$1,413		
Metabolic	$93	$102	$114	$126	$139	$154	$171		
Infectious Disease	$200	$222	$246	$273	$302	$335	$371		
Autoimmune	$48	$54	$60	$66	$73	$81	$90		

	2024 Actual	2025	2026	2027	2028	2029	2030	TOTAL	%
Kidney	$184	$203	$225	$250	$277	$307	$340		
Cardiovascular	$32	$35	$39	$43	$48	$53	$59		
TOTAL	**$216**	**$234**	**$258**	**$285**	**$315**	**$348**	**$385**		
ECT	$1,278	$1,416	$1,569	$1,738	$1,926	$2,134	$2,364		
Tests per Member per Year									
Cancer	2.00	2.00	2.00	2.00	2.00	2.00	2.00		
Behavioral Health	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Metabolic	1.80	1.80	1.80	1.80	1.80	1.80	1.80		
Infectious Disease	1.10	1.10	1.10	1.10	1.10	1.10	1.10		
Autoimmune	1.10	1.10	1.10	1.10	1.10	1.10	1.10		
Kidney	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Cardiovascular	1.60	1.60	1.60	1.60	1.60	1.60	1.60		
TOTAL	**1.74**	**1.56**	**1.52**	**1.50**	**1.48**	**1.48**	**1.47**		
ECT	1.10	1.10	1.10	1.10	1.10	1.10	1.10		
Claims Costs									
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	54.8%
Behavioral Health	$33,600	$776,532	$1,706,328	$2,858,303	$4,273,713	$6,000,680	$8,095,280	$23,744,437	22.9%
Metabolic	$10,157	$171,967	$374,432	$625,230	$933,335	$1,309,211	$1,765,052	$5,189,383	5.0%
Infectious Disease	$55,127	$266,856	$531,116	$857,789	$1,258,413	$1,746,446	$2,337,565	$7,053,311	6.8%
Autoimmune	$57,796	$158,269	$283,166	$437,049	$625,244	$853,958	$1,130,418	$3,545,899	3.4%
Kidney	$6,060	$184,845	$408,630	$685,922	$1,026,659	$1,442,433	$1,946,751	$5,701,299	5.5%
Cardiovascular	$24,427	$72,468	$132,237	$205,931	$296,109	$405,759	$538,357	$1,675,288	1.6%
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**	**100%**
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**	

Appendix F. CY 2026 Estimates, Sorted by Cost

Condition	CY 2026 Utilizers	% of CY 2026 Utilizers	Cumulative % of 2026 Utilizers	2026 Costs	% of 2026 Costs	Cumulative CY 2026 Costs	%
Kidney	3,481	8.0%	8.0%	$533,184	2.9%	$533,184	2.9%
Behavioral Health	3,515	8.0%	16.0%	$3,343,451	18.3%	$3,876,635	21.2%
Infectious Disease	3,694	8.5%	24.5%	$846,459	4.6%	$4,723,094	25.8%
Metabolic	3,798	8.7%	33.2%	$276,545	1.5%	$4,999,639	27.3%
Cardiovascular	3,811	8.7%	41.9%	$356,193	1.9%	$5,355,832	29.3%
Expanded Carrier Testing	4,257	9.7%	51.7%	$3,840,970	21.0%	$9,196,802	50.3%
Autoimmune	8,062	18.5%	18.5%	$374,736	2.0%	$9,571,538	52.3%
Cancer	13,043	29.9%	**48%**	$8,723,415	47.7%	$18,294,954	**100%**
Total	**43,662**	**100%**		**$18,294,954**	**100%**		

Note: With $8 million of funding, 41.9% of expected utilizers, or 18, 299 people, could be covered for 5 of the 8 disease categories.

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