



Health Care Costs in Baltimore Relative to Other Urban Areas in Maryland



December 15, 2022 - FINAL

Submitted to:
Maryland Health Services and Cost Review Commission (HSCRC)
4160 Patterson Ave
Baltimore, MD 21215

Submitted by:
Abt Associates
6130 Executive Boulevard
Rockville, MD 20852

About This Report

This report was developed by Abt Associates for the Maryland Health Services and Cost Review Commission (HSCRC), under contract # HSCRC-TO-2018-2-0601, in partnership with Milliman, Optimal Solutions Group, and SAG Corporation.

Authors

Abt Associates: Sean McClellan, PhD

Optimal Solutions Group: Oswaldo Urdapilleta, PhD and Sagar Anvekar, MS

Acknowledgements

We thank Steven Brownell and Reid Buskirk of SAG for conducting a literature review early in the process of developing the report. We also thank Peter Hallum and Mark Franklin of Milliman for looking into the composition of the Other Outpatient Facility line item.

Caveats and Limitations

Milliman prepared the 2019 benchmark and Maryland APCD processed and summarized data for the use of the Maryland HSCRC. This information is intended solely for educational purposes and presents information of a general nature. It is not intended to guide or determine any specific individual situation and persons should consult qualified professionals before taking specific actions. Milliman does not intend to benefit or create a legal duty to any third-party recipient of its work. This information is subject to the terms and conditions of the Task Order Agreement (#50209) effective March 1, 2019.

In preparation of the analysis, Milliman relied upon the accuracy of data and information gathered from or provided to us by the Centers for Medicare and Medicaid Services (CMS), Department of Health and Human Services (HHS), and our data partners. Milliman has not audited this information, although it has been reviewed for reasonableness. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete.

Milliman has also relied on the data and other information provided by the HSCRC for this analysis. Milliman has performed a limited review of this data and other information and checked for reasonableness and consistency. Milliman has not found material defects in the data or information used other than those described in this report, which also describes how those defects were addressed to enable this analysis to be reliably performed. If there are other material defects in the data or other information, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of this assignment.



Abt Associates | 6130 Executive Boulevard | Rockville, MD 20852

CONTENTS

Executive Summary	iii
1. Background	1
Research Questions	2
2. Methodology	2
Data	2
Benchmark Communities	2
Costs and Utilization	2
County Characteristics	3
Methods	3
3. Findings	4
Employer-sponsored Health Insurance Costs	4
Medicare costs	6
4. Discussion	6
5. Tables	8
Appendix A: Selecting Baltimore and Non-Baltimore Counties	16
Appendix B: Results from Medicare Fee-For-Service Data	17

Executive Summary

Objective: This report explores differences in 2019 per-capita costs of care between counties in the Baltimore area and other urban counties in Maryland, before and after risk adjustment for patient complexity.

Methods: Analyses incorporated data from multiple sources compiled for the purposes of comparing Maryland (MD) communities with similar benchmark (BM) communities across the United States to monitor health care costs and utilization for individuals covered by employer-sponsored health insurance in Maryland. To account for demographic differences between Baltimore-area counties and other urban counties, we compared costs for each area relative to costs in their respective benchmark areas in other states. This report also assessed drivers of differences in per-capita costs, including whether differences were driven by *unit cost*, versus *utilization*, and differences in the mix of services provided.

Findings: Total per-member-per-month (PMPM) costs for employer-sponsored health insurance were about \$15 higher in the Baltimore area than in non-Baltimore urban areas after risk and benefit adjustment, relative to their respective benchmarks, a relative difference of roughly 4%. Extrapolating across the nearly five million member months included in the study in the Baltimore area, this suggests additional health care spending of roughly \$73 million in the Baltimore area compared to other urban areas in Maryland. Decomposing this \$73 million, the Baltimore area had higher total spending than non-Baltimore urban areas of roughly \$40 million in inpatient facility spending and \$120 million in outpatient facility spending, which was offset by \$86 million less in total spending on professional services and additional benefits. Statewide, the population included in this study represented roughly 40 percent of the entire employer-sponsored health insurance population in Maryland. This difference was driven by higher *unit costs* in the Baltimore area than in non-Baltimore urban areas, particularly for facility outpatient services, while utilization was relatively lower in the Baltimore area.

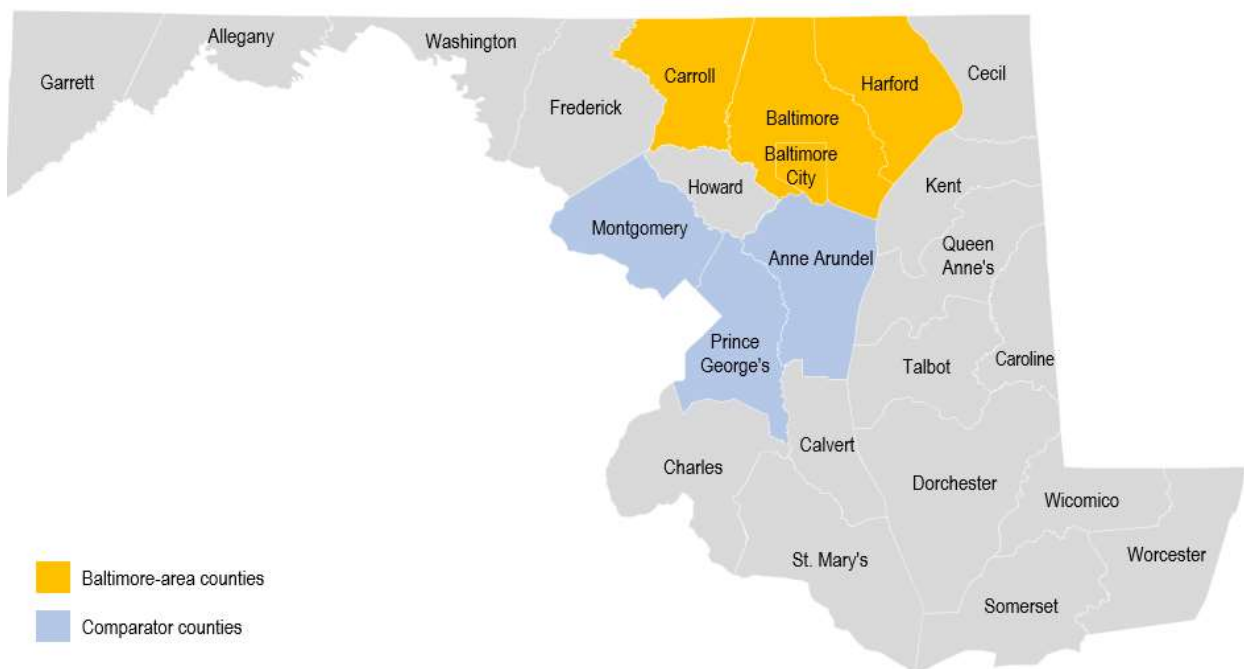
Discussion: Total costs of care for commercial patients were 4% higher in the Baltimore area than in other urban areas in Maryland, relative to their respective benchmarks. This was driven by relatively higher unit costs in the Baltimore area. These findings suggest that high unit costs could be offsetting lower utilization in the Baltimore area. It is possible that reductions in health care spending for the commercially insured population from the Maryland Total Cost of Care Model have accrued unevenly across the state.

1. Background

The Maryland Health Services and Cost Review Commission (HSCRC) plays a vital role in the implementation of the State of Maryland's all-payer rate-setting system, going back to the 1970s. This system, which initially focused on rate setting for hospital services, aims to reduce per capita expenditures and improve health outcomes. From 2014-2018, Maryland implemented the Maryland All-Payer Model (MDAPM) in partnership with the Centers for Medicaid and Medicare Services (CMS), which established global budgets for hospital inpatient and outpatient hospital services. MDAPM successfully reduced costs and improved the quality of care for both inpatient and outpatient services.^{1,2} Starting in 2019, Maryland began implementing the Total cost of Care model, which includes new opportunities for non-hospital health care providers to participate in care redesign and receive value-based payments.

In internal analyses, the HSCRC identified potential differences in the costs of providing health care in the Baltimore area relative to other urban areas in Maryland. This report explores the extent of the differences in per-capita costs of care between Baltimore-area and other urban comparator counties (**Exhibit 1**) relative to benchmark communities in other states, before and after risk adjustment for patient complexity. We compared costs for each area relative to costs in their respective benchmark areas in other states to account for demographic differences between the Baltimore-area counties and other urban counties in Maryland. This report also identifies drivers of estimated differences in per-capita costs, including whether differences were driven by unit cost versus utilization, and differences in the mix of services provided.

Exhibit 1. Baltimore-Area and Comparator Counties in Maryland



¹ Haber S, Beil H, Morrison M, Greenwald L, Perry R, Jiang L, Masters S, Rutledge R, Berzin O, Cole-Beebe M, Feinberg R. Evaluation of the Maryland All-Payer Model, Volume I: Final Report. Waltham, MA: RTI International. 2019.

² Masters SH, Rutledge RI, Morrison M, Beil HA, Haber SG. Effects of Global Budget Payments on Vulnerable Medicare Subpopulations in Maryland. Medical Care Research and Review. 2021 Oct 26.

Research Questions

The following research questions motivated the analysis that follows:

1. How much more expensive are costs of care in the Baltimore area relative to other urban areas in Maryland, in comparison to the benchmarks?
2. What explains differences in costs between the Baltimore area and other urban areas in Maryland, outside of the Baltimore area, relative to the benchmarks for each area?

In addressing these questions, this study applied two sets of comparisons: (1) Baltimore area relative to other urban counties in Maryland, and (2) Maryland areas relative to similar “benchmark” areas outside of Maryland. The first comparison (Baltimore relative to non-Baltimore) accounts for factors specific to Maryland, including the history of all-payer rate-setting initiatives. The second comparison (Maryland areas relative to benchmark areas) helps to account for potential demographic differences between the Baltimore and non-Baltimore areas in Maryland.

2. Methodology

Data

We used data from multiple sources compiled for the purposes of comparing Maryland (MD) communities with similar benchmark (BM) communities in 2019 across the United States to monitor health care costs and utilization for individuals covered by employer-sponsored health insurance. We describe the data sources used in this report below. The detailed methodology for identifying benchmark communities and measuring health care costs and utilization, and risk-adjusting costs across communities is described in a separate report.³

Benchmark Communities

We identified benchmark communities at the Metropolitan Statistical Area (MSA) level. MSAs are defined in terms of entire counties or county equivalents. For each MSA in Maryland, we matched non-Maryland MSAs on key geographic characteristics: total population, population density, median income, deep poverty percentage, regional price parities (a measure of differences in price levels across states and metropolitan areas), HHS Platinum risk score, and payer mix (percent of Medicare and Medicaid bed days). Specifically, for each Maryland MSA, we selected the top 20 non-Maryland benchmark MSAs with the lowest total Euclidean distance across all matching measures. Additional detail is described in a separate report.³

Costs and Utilization

For employer-sponsored health insurance, we obtained data on health care costs and utilization for commercially insured patients from Milliman’s Consolidated Health Cost Guidelines (HCGs) Sources Database (CHSD) and the Maryland All Payer Claims Database (APCD). To assess health care costs across Maryland counties (Baltimore-area and non-Baltimore-area) and non-Maryland benchmarks, we used the following measures: average per-member-per-month (PMPM) allowed costs; average PMPM relative value units (RVUs), a measure of health care utilization; and average PMPM unit costs (total costs / RVUs).

³ Abt Associates, in partnership with: Milliman, Optimal Solutions Group, and SAG Corporation. “Healthcare Cost Benchmarking for Commercial Programs, Documentation, CY2019 Data.” March 21, 2022.

We assessed total costs across all line items and the following sub-total line items: facility inpatient (IP), facility outpatient (OP), professional, other professional, and additional benefits. We also assessed costs for selected individual line items to further identify drivers of costs.

To detect differences in costs, we tested benchmark differences for three measures of total allowed costs: unadjusted allowed costs; allowed costs adjusted for differences in Hierarchical Condition Categories (HCC) scores (risk-score adjusted costs); and allowed costs adjusted for differences HCC scores and in insurance plan benefits levels (risk-score and benefit adjusted costs).⁴ We did not adjust costs for potential demographic differences between the Baltimore and non-Baltimore urban areas; it is possible that demographic differences between the Baltimore and non-Baltimore urban areas could result in differences in total per capita costs not accounted for in this analysis. However, the benchmark selection process included several key demographic measures, mitigating the potential for differences due to demographics.

We conducted similar analysis for the Medicare Fee-For-Service (FFS) data. See **Appendix B**.

County Characteristics

We used the measures listed in **Exhibit 2** to characterize Baltimore-area counties and identify urban counties in Maryland outside of the Baltimore area to serve as a comparison group. When the elements were compared, we selected Baltimore City, Baltimore, Harford, and Carroll counties as the Baltimore counties and Prince George's, Montgomery, and Anne Arundel for the comparison group. Data from the Baltimore counties included 4,879,751 member months and data from the non-Baltimore counties included 6,275,417 member months. See **Appendix A** for additional detail.

Exhibit 2. County Characteristics and Data Sources

Factor	Data Source
Median income: median household income	ACS 2015-2019 5-Year Estimates
Deep poverty percentage: percentage of the population living in a household with total income below 50 percent of its poverty threshold	ACS 2015-2019 5-Year Estimates
HHS Platinum risk score: Risk score developed by HHS to predict Health Insurance Exchange plan liability.	2019 Milliman CHSD and MD APCD
County population and population density (population per square mile)	2019 US Census County Population Totals

Note: HHS = Health and Human Services; ACS = American Community Survey

Methods

We calculated population-weighted averages of unit costs, utilization (RVUs), and total PMPM allowed costs for the Baltimore area counties and the non-Baltimore area counties, as well as for their respective benchmarks. We used the total number of member months to weight estimates, both for the Maryland areas and for their respective benchmarks. Thus, each measure under study was computed for the Baltimore area, non-Baltimore area, and their respective benchmarks, as the weighted average across the counties in each grouping.

We then calculated differences in costs between Baltimore area and non-Baltimore area relative to their respective benchmark areas. This calculation can be decomposed into three sets of comparisons.

- The difference between the Baltimore-areas and non-Baltimore areas (the “Difference” rows in the tables below)

⁴ We adjusted for differences in plan benefit levels, because generosity of coverage in commercial insurance plans can vary, affecting utilization.

- The differences between each Maryland group (Baltimore areas and non-Baltimore areas) and their benchmarks (the “Difference (MD-BM)” columns in the tables below)
- The net difference between Baltimore and non-Baltimore areas, relative to their respective benchmark areas. This can also be thought of as a difference-in-differences type calculation.

Once this difference was identified, we decomposed the factors (unit cost and utilization) contributing to cost differences between Maryland areas and benchmark (BM) areas and ultimately to the net total PMPM cost. These calculations are reported in the “Contribution to Variation” columns in the tables below. The contribution of each component is calculated as follows:

- Utilization contribution = (MD RVUs * BM Unit price) - (BM RVUs * BM Unit price)
- Unit cost contribution = (MD RVUs * MD Unit price) - (MD RVUs * BM Unit price)

3. Findings

Tables referenced in this section are listed in **Section 5**.

Employer-sponsored Health Insurance Costs

Total Unadjusted Costs

Both the Baltimore area and the non-Baltimore urban area had lower costs than their respective benchmark areas outside of Maryland (**Exhibit 4**). On average, in the Baltimore area, total unadjusted costs were \$375.81 PMPM, relative to total costs of \$396.42 PMPM for the benchmarks, a difference of -\$20.61 PMPM. In the non-Baltimore area, average total costs were \$329.39 PMPM, relative to \$394.28 PMPM for the benchmarks, a difference of -\$64.89 PMPM.

The absolute difference between the Baltimore and non-Baltimore areas was \$46.42 PMPM, while the difference between their respective benchmarks was \$2.14 PMPM. Therefore, costs in the Baltimore area were \$44.28 PMPM higher than in the non-Baltimore area, relative to the difference in costs between their respective benchmarks, a 12% difference compared to the average total of \$375.81 PMPM in the Baltimore area. Unit cost contributed \$28.90 (or roughly two thirds) to the overall relative cost difference of \$44.28 PMPM and utilization accounted for the remaining \$15.37 (**Exhibit 5**).

Total Risk-Score and Benefit Adjusted Costs

After risk-score and benefit adjustments, the difference in total costs between the Baltimore and non-Baltimore areas, relative to Baltimore areas their respective benchmarks, was \$14.99 (**Exhibit 4**), a 4% difference compared to the average total of \$343.33 PMPM in risk-score and benefit adjusted costs in the Baltimore area. Extrapolating across the 4,879,751 member months represented in the Baltimore area, this suggests an additional \$73,147,467 in health care spending covered by employer-sponsored health insurance in the Baltimore area, compared to the non-Baltimore urban area.⁵ Out of the total difference in allowed costs of \$14.99 PMPM, unit cost contributed \$37.41 and utilization accounted for -\$22.42, indicating higher unit costs but lower utilization in the Baltimore area relative to the non-Baltimore area (**Exhibit 5**). To account for potential differences in case-mix between the Baltimore area and non-

⁵ There was additional healthcare spending of \$14.99 PMPM across 4,879,751 member months in the Baltimore area, for a total of \$73,147,467. Decomposing this \$73 million, the Baltimore area had higher total spending than non-Baltimore urban areas of roughly \$40 million in inpatient facility spending and \$120 million in outpatient facility spending, which was offset by lower total spending on professional services and additional benefits of roughly \$86 million.

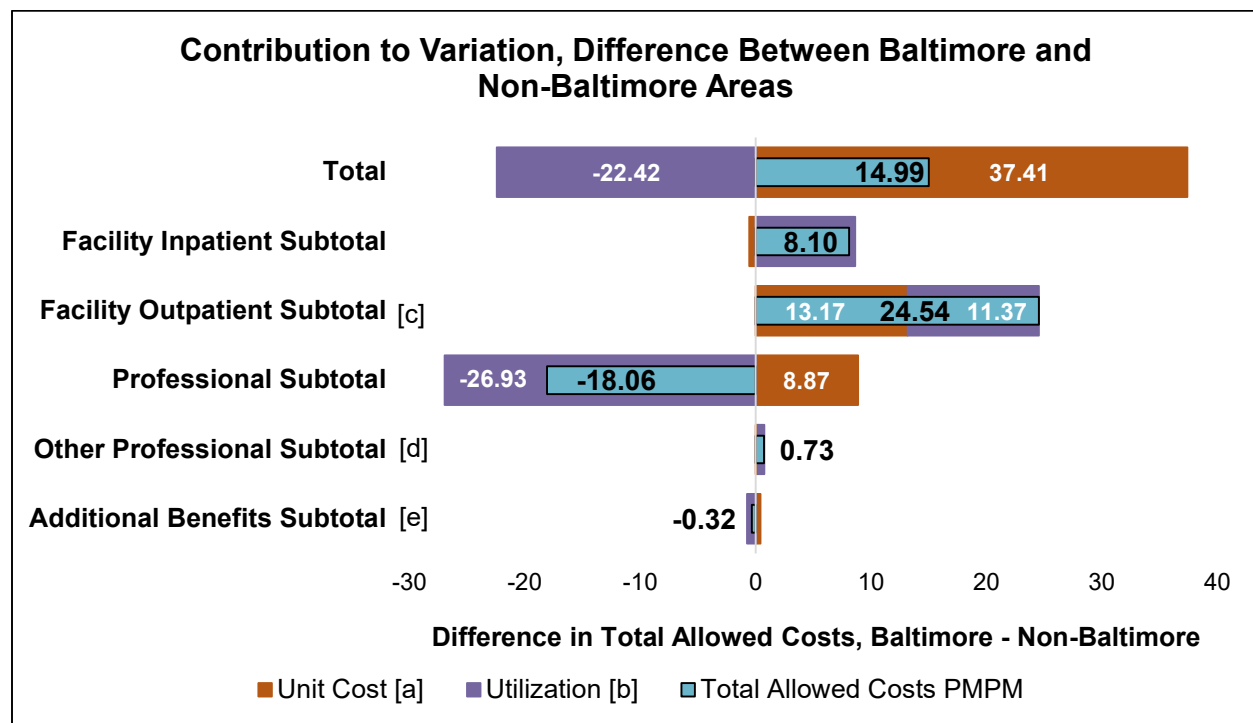
Baltimore areas, additional analyses of costs by service line-item groupings focused on risk-score and benefit adjusted measures.

Subtotal Costs by Line-Item Groupings

We also examined differences in costs stratified by the following line-item groupings: facility inpatient, facility outpatient, professional, other professional and additional benefits (**Exhibit 3** and **Exhibit 6**).

- **Facility inpatient services.** After risk-score and benefit adjustments, and relative to their PMPM benchmarks, the Baltimore area had higher facility inpatient costs than the non-Baltimore area (+\$8.10), driven almost entirely by higher utilization (+\$8.63).
- **Facility outpatient services.** After risk-score and benefit adjustments, and relative to their PMPM benchmarks, the Baltimore area had higher facility outpatient costs (+\$24.54) than the non-Baltimore area, explained roughly equally by higher unit costs (+\$13.17) and utilization (+\$11.37).
- **Professional services.** Relative to their PMPM benchmarks, the Baltimore area had lower professional costs than the non-Baltimore area (-\$18.06), driven especially by low utilization (-\$26.93).

Exhibit 3. Factors Contributing to Variation Between Maryland and Benchmark Areas by Line-Item Groupings (Risk-Score and Benefit Adjusted)



Source: Abt Team analysis of 2019 data from Milliman's Consolidated Health Cost Guidelines Sources Database and the Maryland All Payer Claims Database.

Notes: Values for Total Allowed Costs shown in black; values for unit cost and utilization shown in white. Estimates were weighted by total number of member months. Abbreviations: BM, benchmark; MD, Maryland; PMPM, per member per month. [a] Unit cost contribution to variation is calculated as: $\text{unit_price [MD]} * \text{rvu_pmpm [MD]} - \text{unit_price [BM]} * \text{rvu_pmpm [MD]}$. [b] Utilization contribution to variation is calculated as: $\text{rvu_pmpm [MD]} * \text{unit_price [BM]} - \text{rvu_pmpm [BM]} * \text{unit_price [BM]}$. [c] The Facility Inpatient Subtotal category had a unit cost value of -0.54 and a utilization value of 8.63. [d] The Other Professional Subtotal category had a unit cost value of 0.23 and a utilization value of 0.51. [e] The Additional benefits Subtotal category had a unit cost value of 0.42 and a utilization value of -0.74.

Facility outpatient line items

Due to the findings above, we further analyzed what facility outpatient sub-line items could be contributing to the total allowed PMPM cost difference between the Baltimore and non-Baltimore areas, relative to their benchmarks. Out of the 14 line items in the Facility Outpatient setting, “Other Outpatient Facility” services accounted for nearly half of the difference between the Baltimore and non-Baltimore areas (\$10.45 of the total difference of \$24.54) (**Exhibit 8**), a difference driven almost entirely by unit costs (**Exhibit 9**). Other Outpatient Facility services include blood products, clinic visits, durable medical equipment/supplies, observation care, pulmonary, urgent care, and other diagnostic services, but dialysis comprised over half of the Other Outpatient Facility PMPM spending for both the Baltimore and non-Baltimore areas. Preliminary analysis indicates that unit costs for dialysis services were roughly twice as expensive in the Baltimore area than in the non-Baltimore area.⁶

Medicare Fee-For-Service costs

We conducted a similar analysis using data for Medicare FFS beneficiaries, mirroring the analyses using commercial data discussed above. After risk adjustment for HCC mix, the difference in total PMPM cost between the Baltimore and non-Baltimore areas, relative to their respective benchmarks, was \$197 per beneficiary per month (PBPM) (see **Appendix Exhibit B1**). This represents a 17% relative difference compared to the average total of \$1,167.82 PBPM for Medicare FFS beneficiaries in the Baltimore area. Unit cost and utilization contributed roughly equally to the higher total PMPM cost in Medicare.

We did not decompose the costs of services beyond total costs less medical education and inpatient line items, because measures of utilization were not available at the line-item level. However, we were able to conduct an analysis of Medicare inpatient costs. In this line item, the difference between the Baltimore and non-Baltimore areas, relative to their respective benchmarks, was \$131.49 PBPM, a relative difference of 29%. This difference was driven by higher unit costs in the Baltimore area than in the non-Baltimore area, with higher unit costs accounting for roughly 70% of the difference.

4. Discussion

Total costs for commercial insurers in 2019 were roughly \$15 PMPM, or roughly 4%, higher in the Baltimore area than other urban areas in Maryland after risk-score and benefit adjustment, relative to their respective benchmarks. Extrapolating across the nearly five million member months represented in the Baltimore area, this suggests additional health care spending of roughly \$73 million covered by employer-sponsored health insurance in the Baltimore area compared to other urban areas in Maryland. Further, this may under-estimate the overall difference in spending between the Baltimore and non-Baltimore areas for commercially-insured residents, because the data included in the Maryland All-Payer Claims Database represent roughly 40 percent of the entire employer-sponsored health insurance population in Maryland.⁷

⁶ This finding should be thought of as preliminary because we were not able to compare dialysis costs for the Baltimore and non-Baltimore areas against their respective benchmark areas.

⁷ The 2019 Maryland APCD data included 1,329,455 individuals, while the Kaiser Family Foundation estimated that 3,716,400 individuals were covered by employer-sponsored health insurance in Maryland in 2019. The APCD includes only privately fully-insured and self-insured non-ERISA health insurance plans (i.e., residents with health insurance sponsored by the federal government or ERISA plans are not included in the APCD).

Maryland Health Care Commission. Medical Care Data Base (MCDB) Data Release. Available at: https://mhcc.maryland.gov/mhcc/Pages/apcd/apcd_data_release/apcd_data_release_mcdb.aspx.

Kaiser Family Foundation. Health Insurance Coverage of the Total Population, 2019. Available at: <https://www.kff.org/other/state-indicator/total-population/>.

Overall, this difference was driven by higher unit costs in the Baltimore area relative to the non-Baltimore area, especially for outpatient facility and professional services. In contrast, overall utilization was lower in the Baltimore area relative to the non-Baltimore area, indicating that high unit costs in Baltimore could be offsetting lower utilization. It is possible that reductions in health care spending for the commercially insured population from the Maryland Total Cost of Care Model have accrued unevenly across the state.

A comparable analysis of Medicare data indicated that costs were nearly \$200 PBPM higher in the Baltimore area than in the non-Baltimore area after risk-score and benefit adjustment, relative to their respective benchmarks, a difference of roughly 17% (**Appendix Exhibits B1 and B2**).

This analysis has limitations. The data available presents cost and utilization data for Maryland and benchmark areas, overall and by line items, without risk adjustment and by two risk adjustment methodologies (risk-score adjusted and risk-score and benefit adjusted). The risk-score and benefit adjustments were calculated by adjusting the total cost and utilization measures across all line items and may not accurately reflect variation across sub-total line items. For the Medicare FFS data, we did not have access to a general summary measure of utilization, such as RVUs; therefore, we used inpatient admissions as the utilization measure, which may not accurately reflect utilization in outpatient settings.

5. Tables

Exhibit 4. Total Costs, RVUs, and Unit Costs

Areas	Maryland			Benchmark			Difference (Maryland - Benchmark)		
	Unit Cost	Utilization (RVUs)	Total Allowed Costs PMPM	Unit Cost	Utilization (RVUs)	Total Allowed Costs PMPM	Unit Cost	Utilization (RVUs)	Total Allowed Costs PMPM
Unadjusted Costs									
Baltimore-area	56.86	6.61	375.81	70.43	5.63	396.42	-13.58	0.98	-20.61
Non-Baltimore-area	53.00	6.21	329.39	72.09	5.47	394.28	-19.09	0.75	-64.89
Difference	3.86	0.40	46.42	-1.66	0.16	2.14	5.51	0.24	44.28
Risk Score Adjusted Costs									
Baltimore-area	56.60	6.24	353.27	70.63	5.68	401.20	-14.03	0.56	-47.92
Non-Baltimore-area	52.92	6.47	342.32	72.43	5.61	406.30	-19.52	0.86	-63.98
Difference	3.69	-0.23	10.96	-1.80	0.07	-5.10	5.49	-0.30	16.06
Risk Score and Benefit Adjusted Costs									
Baltimore-area	56.27	6.10	343.33	70.44	5.62	395.86	-14.17	0.48	-52.52
Non-Baltimore-area	52.53	6.31	331.69	72.15	5.53	399.20	-19.62	0.78	-67.51
Difference	3.74	-0.21	11.64	-1.71	0.09	-3.35	5.45	-0.30	14.99

Source: Abt Team analysis of 2019 data from Milliman's Consolidated Health Cost Guidelines Sources Database and the Maryland All Payer Claims Database.

Notes: Estimates were weighted by total number of member months. Abbreviations: PMPM, per member per month; RVUs, relative value units.

Exhibit 5. Factors Contributing to Variation Between Maryland and Benchmark Areas

Areas	Difference (Maryland - Benchmark)			Contribution to Variation		
	Unit Cost	Utilization (RVUs)	Total Allowed Costs PMPM	Unit Cost [a]	Utilization [b]	Total Allowed Costs PMPM
Unadjusted Costs						
Baltimore-area	-13.58	0.98	-20.61	-89.74	69.13	-20.61
Non-Baltimore-area	-19.09	0.75	-64.89	-118.64	53.75	-64.89
Difference	5.51	0.24	44.28	28.90	15.37	44.28
Risk Score Adjusted Costs						
Baltimore-area	-14.03	0.56	-47.92	-87.57	39.65	-47.92
Non-Baltimore-area	-19.52	0.86	-63.98	-126.26	62.27	-63.98
Difference	5.49	-0.30	16.06	38.68	-22.62	16.06
Risk Score and Benefit Adjusted Costs						
Baltimore-area	-14.17	0.48	-52.52	-86.48	33.96	-52.52
Non-Baltimore-area	-19.62	0.78	-67.51	-123.89	56.38	-67.51
Difference	5.45	-0.30	14.99	37.41	-22.42	14.99

Source: Abt Team analysis of 2019 data from Milliman's Consolidated Health Cost Guidelines Sources Database and the Maryland All Payer Claims Database.

Notes: Estimates were weighted by total number of member months. [a] Unit cost contribution to variation is calculated as: unit_price [MD] * rvu_pmpm [MD] - unit_price [BM] * rvu_pmpm [MD]. [b] Utilization contribution to variation is calculated as: rvu_pmpm [MD] * unit_price [BM] - rvu_pmpm [BM] * unit_price [BM]. Abbreviations: BM, Benchmark; MD, Maryland; PMPM, per member per month; RVUs, relative value units.

Exhibit 6. Total Costs, RVUs, and Unit Costs by Line Item Groupings (Risk-Score and Benefit Adjusted)

Areas	Maryland			Benchmark			Difference (Maryland - Benchmark)		
	Unit Cost	Utilization (RVUs)	Total Allowed Costs PMPM	Unit Cost	Utilization (RVUs)	Total Allowed Costs PMPM	Unit Cost	Utilization (RVUs)	Total Allowed Costs PMPM
Baltimore-area									
Total	56.27	6.10	343.33	70.44	5.62	395.86	-14.17	0.48	-52.52
Facility Inpatient Subtotal	70.67	0.96	67.87	93.26	0.91	84.64	-22.59	0.05	-16.77
Facility Outpatient Subtotal	86.81	1.29	112.23	99.73	1.39	139.01	-12.92	-0.10	-26.78
Professional Subtotal	42.82	3.39	145.20	52.44	3.05	159.82	-9.62	0.34	-14.62
Other Professional Subtotal	39.68	0.24	9.66	45.15	0.23	10.44	-5.47	0.01	-0.78
Additional Benefits Subtotal	39.12	0.21	8.38	49.14	0.04	1.95	-10.02	0.17	6.43
Non-Baltimore-area									
Total	52.53	6.31	331.69	72.15	5.53	399.20	-19.62	0.78	-67.51
Facility Inpatient Subtotal	74.36	0.85	63.14	99.28	0.89	88.01	-24.92	-0.04	-24.87
Facility Outpatient Subtotal	75.47	1.14	86.40	101.57	1.36	137.72	-26.10	-0.21	-51.32
Professional Subtotal	42.52	3.86	164.14	53.27	3.02	160.69	-10.75	0.84	3.45
Other Professional Subtotal	38.99	0.23	8.89	45.83	0.23	10.40	-6.84	0.00	-1.51
Additional Benefits Subtotal	39.24	0.23	9.12	50.28	0.05	2.37	-11.04	0.19	6.75
Difference, Baltimore – Non-Baltimore									
Total	3.74	-0.21	11.64	-1.71	0.09	-3.35	5.45	-0.30	14.99
Facility Inpatient Subtotal	-3.69	0.11	4.72	-6.02	0.02	-3.37	2.33	0.09	8.10
Facility Outpatient Subtotal	11.34	0.15	25.83	-1.83	0.04	1.29	13.17	0.11	24.54
Professional Subtotal	0.29	-0.47	-18.94	-0.83	0.03	-0.87	1.13	-0.50	-18.06
Other Professional Subtotal	0.69	0.02	0.77	-0.68	0.00	0.03	1.37	0.01	0.73
Additional Benefits Subtotal	-0.12	-0.02	-0.74	-1.14	-0.01	-0.42	1.02	-0.01	-0.32

Source: Abt Team analysis of 2019 data from Milliman's Consolidated Health Cost Guidelines Sources Database and the Maryland All Payer Claims Database.

Notes: Estimates were weighted by total number of member months. Abbreviations: PMPM, per member per month; RVUs, relative value units.

Exhibit 7. Factors Contributing to Variation Between Maryland and Benchmark Areas by Line-Item Groupings (Risk-Score and Benefit Adjusted)

Areas	Difference (Maryland - Benchmark)			Contribution to Variation		
	Unit Cost	Utilization (RVUs)	Total Allowed Costs PMPM	Unit Cost [a]	Utilization [b]	Total Allowed Costs PMPM
Baltimore Area						
Total	-14.17	0.48	-52.52	-86.48	33.96	-52.52
Facility Inpatient Subtotal	-22.59	0.05	-16.77	-21.70	4.93	-16.77
Facility Outpatient Subtotal	-12.92	-0.10	-26.78	-16.70	-10.08	-26.78
Professional Subtotal	-9.62	0.34	-14.62	-32.64	18.02	-14.62
Other Professional Subtotal	-5.47	0.01	-0.78	-1.33	0.55	-0.78
Additional Benefits Subtotal	-10.02	0.17	6.43	-2.15	8.57	6.43
Non-Baltimore Area						
Total	-19.62	0.78	-67.51	-123.89	56.38	-67.51
Facility Inpatient Subtotal	-24.92	-0.04	-24.87	-21.16	-3.71	-24.87
Facility Outpatient Subtotal	-26.10	-0.21	-51.32	-29.87	-21.45	-51.32
Professional Subtotal	-10.75	0.84	3.45	-41.50	44.95	3.45
Other Professional Subtotal	-6.84	0.00	-1.51	-1.56	0.05	-1.51
Additional Benefits Subtotal	-11.04	0.19	6.75	-2.56	9.31	6.75
Difference, Baltimore – Non-Baltimore						
Total	5.45	-0.30	14.99	37.41	-22.42	14.99
Facility Inpatient Subtotal	2.33	0.09	8.10	-0.54	8.63	8.10
Facility Outpatient Subtotal	13.17	0.11	24.54	13.17	11.37	24.54
Professional Subtotal	1.13	-0.50	-18.06	8.87	-26.93	-18.06
Other Professional Subtotal	1.37	0.01	0.73	0.23	0.51	0.73
Additional Benefits Subtotal	1.02	-0.01	-0.32	0.42	-0.74	-0.32

Source: Abt Team analysis of 2019 data from Milliman's Consolidated Health Cost Guidelines Sources Database and the Maryland All Payer Claims Database.

Notes: Estimates were weighted by total number of member months. [a] Unit cost contribution to variation is calculated as: unit_price [MD] * rvu_pmpm [MD] – unit_price [BM] * rvu_pmpm [MD]. [b] Utilization contribution to variation is calculated as: rvu_pmpm [MD] * unit_price [BM] – rvu_pmpm [BM] * unit_price [BM]. Abbreviations: BM, Benchmark; MD, Maryland; PMPM, per member per month; RVUs, relative value units.

Exhibit 8. Total Costs, RVUs, and Unit Costs by Facility Outpatient Line Items (Risk-Score and Benefit Adjusted)

Line item	Maryland			Benchmark			Difference (Maryland - Benchmark)		
	Unit Cost	Utilization (RVUs)	Total Allowed Costs PMPM	Unit Cost	Utilization (RVUs)	Total Allowed Costs PMPM	Unit Cost	Utilization (RVUs)	Total Allowed Costs PMPM
Baltimore Area									
Total	86.81	1.29	112.23	99.73	1.39	139.01	-12.92	-0.10	-26.78
Alcohol and Drug Abuse	55.83	0.03	1.46	88.12	0.02	1.40	-32.29	0.01	0.06
Cardiovascular	57.16	0.02	1.13	138.56	0.02	2.75	-81.40	0.00	-1.62
Emergency Department	92.69	0.15	13.78	146.91	0.16	23.07	-54.22	-0.01	-9.29
Observation	75.71	0.08	5.71	118.98	0.05	6.44	-43.27	0.02	-0.73
Other Outpatient Facility	196.43	0.12	24.08	120.32	0.09	11.07	76.10	0.03	13.01
Pathology Lab	154.35	0.02	2.62	121.17	0.06	7.07	33.18	-0.04	-4.45
Pharmacy	85.77	0.17	14.87	100.32	0.20	19.73	-14.55	-0.02	-4.86
Preventive	68.00	0.03	2.09	79.38	0.08	6.05	-11.38	-0.05	-3.96
Psychiatric	73.16	0.03	2.18	81.16	0.02	1.97	-8.00	0.01	0.21
Physical Therapy, Occupational Therapy, and Speech Therapy	87.73	0.03	2.68	98.78	0.04	3.76	-11.05	-0.01	-1.08
Radiology Diagnostic	170.42	0.02	2.76	155.17	0.03	4.81	15.25	-0.01	-2.04
Radiology CT Scan	116.37	0.01	1.63	194.13	0.03	6.38	-77.76	-0.02	-4.75
Radiology Therapeutic	130.26	0.02	2.68	159.57	0.02	3.54	-29.32	0.00	-0.86
Surgery	60.84	0.57	34.54	71.21	0.58	40.96	-10.37	-0.01	-6.41
Non-Baltimore Area									
Total	75.47	1.14	86.40	101.57	1.36	137.72	-26.10	-0.21	-51.32
Alcohol and Drug Abuse	53.40	0.02	0.97	86.43	0.02	1.47	-33.03	0.00	-0.50
Cardiovascular	61.16	0.02	1.36	146.45	0.02	2.80	-85.29	0.00	-1.44
Emergency Department	93.90	0.14	13.44	149.85	0.15	22.54	-55.96	-0.01	-9.10
Observation	72.36	0.06	4.39	120.18	0.05	5.87	-47.82	0.01	-1.48
Other Outpatient Facility	111.09	0.12	13.63	122.54	0.09	11.07	-11.45	0.03	2.56
Pathology Lab	141.02	0.01	1.91	123.92	0.06	6.97	17.10	-0.04	-5.07
Pharmacy	87.14	0.12	10.29	99.64	0.20	19.85	-12.50	-0.08	-9.55

Line item	Maryland			Benchmark			Difference (Maryland - Benchmark)		
	Unit Cost	Utilization (RVUs)	Total Allowed Costs PMPM	Unit Cost	Utilization (RVUs)	Total Allowed Costs PMPM	Unit Cost	Utilization (RVUs)	Total Allowed Costs PMPM
Preventive	37.87	0.03	1.21	82.21	0.07	6.10	-44.34	-0.04	-4.88
Psychiatric	64.58	0.03	1.79	81.72	0.02	2.00	-17.14	0.00	-0.21
Physical Therapy, Occupational Therapy, and Speech Therapy	74.17	0.02	1.85	98.80	0.04	3.51	-24.64	-0.01	-1.66
Radiology Diagnostic	162.64	0.01	1.30	157.42	0.03	4.92	5.22	-0.02	-3.62
Radiology CT Scan	160.46	0.01	1.89	198.18	0.03	6.48	-37.72	-0.02	-4.59
Radiology Therapeutic	137.08	0.02	2.12	168.77	0.02	3.93	-31.69	-0.01	-1.80
Surgery	57.47	0.53	30.24	72.67	0.55	40.22	-15.21	-0.03	-9.97
Difference, Baltimore – Non-Baltimore									
Total	11.34	0.15	25.83	-1.83	0.04	1.29	13.17	0.11	24.54
Alcohol and Drug Abuse	2.43	0.01	0.49	1.69	0.00	-0.07	0.74	0.01	0.56
Cardiovascular	-4.01	0.00	-0.23	-7.90	0.00	-0.05	3.89	0.00	-0.18
Emergency Department	-1.21	0.01	0.34	-2.94	0.01	0.53	1.73	0.00	-0.18
Observation	3.35	0.01	1.32	-1.20	0.01	0.57	4.55	0.01	0.75
Other Outpatient Facility	85.34	0.00	10.46	-2.22	0.00	0.01	87.56	0.00	10.45
Pathology Lab	13.33	0.00	0.72	-2.75	0.00	0.10	16.08	0.00	0.62
Pharmacy	-1.37	0.06	4.58	0.68	0.00	-0.12	-2.05	0.06	4.70
Preventive	30.13	0.00	0.87	-2.84	0.00	-0.05	32.96	0.00	0.92
Psychiatric	8.58	0.00	0.39	-0.56	0.00	-0.03	9.14	0.00	0.42
Physical Therapy, Occupational Therapy, and Speech Therapy	13.57	0.01	0.83	-0.02	0.00	0.25	13.59	0.00	0.58
Radiology Diagnostic	7.78	0.01	1.46	-2.25	0.00	-0.12	10.03	0.01	1.58
Radiology CT Scan	-44.08	0.00	-0.26	-4.05	0.00	-0.10	-40.03	0.00	-0.16
Radiology Therapeutic	-6.82	0.01	0.56	-9.20	0.00	-0.39	2.38	0.01	0.94
Surgery	3.37	0.04	4.30	-1.46	0.02	0.74	4.83	0.02	3.56

Source: Abt Team analysis of 2019 data from Milliman's Consolidated Health Cost Guidelines Sources Database and the Maryland All Payer Claims Database.

Notes: Estimates were weighted by total number of member months. Abbreviations: CT, computed tomography; PMPM, per member per month; RVUs, relative value units.

Exhibit 9. Factors contributing to variation between Maryland and Benchmark areas by Facility Outpatient line items (Risk-Score and Benefit Adjusted)

Line item	Difference (Maryland - Benchmark)			Contribution to Variation		
	Unit Cost	Utilization (RVUs)	Total Allowed Costs PMPM	Unit Cost [a]	Utilization [b]	Total Allowed Costs PMPM
Baltimore Area						
Total	-12.92	-0.10	-26.78	-16.70	-10.08	-26.78
Alcohol and Drug Abuse	-32.29	0.01	0.06	-0.85	0.90	0.06
Cardiovascular	-81.40	0.00	-1.62	-1.62	0.00	-1.62
Emergency Department	-54.22	-0.01	-9.29	-8.06	-1.22	-9.29
Observation	-43.27	0.02	-0.73	-3.26	2.53	-0.73
Other Outpatient Facility	76.10	0.03	13.01	9.33	3.68	13.01
Pathology Lab	33.18	-0.04	-4.45	0.56	-5.01	-4.45
Pharmacy	-14.55	-0.02	-4.86	-2.52	-2.34	-4.86
Preventive	-11.38	-0.05	-3.96	-0.35	-3.62	-3.96
Psychiatric	-8.00	0.01	0.21	-0.24	0.44	0.21
Physical Therapy, Occupational Therapy, and Speech Therapy	-11.05	-0.01	-1.08	-0.34	-0.74	-1.08
Radiology Diagnostic	15.25	-0.01	-2.04	0.25	-2.29	-2.04
Radiology CT Scan	-77.76	-0.02	-4.75	-1.09	-3.66	-4.75
Radiology Therapeutic	-29.32	0.00	-0.86	-0.60	-0.26	-0.86
Surgery	-10.37	-0.01	-6.41	-5.89	-0.52	-6.41
Non-Baltimore Area						
Total	-26.10	-0.21	-51.32	-29.87	-21.45	-51.32
Alcohol and Drug Abuse	-33.03	0.00	-0.50	-0.60	0.10	-0.50
Cardiovascular	-85.29	0.00	-1.44	-1.90	0.46	-1.44
Emergency Department	-55.96	-0.01	-9.10	-8.01	-1.10	-9.10
Observation	-47.82	0.01	-1.48	-2.90	1.43	-1.48
Other Outpatient Facility	-11.45	0.03	2.56	-1.40	3.96	2.56
Pathology Lab	17.10	-0.04	-5.07	0.23	-5.30	-5.07
Pharmacy	-12.50	-0.08	-9.55	-1.48	-8.08	-9.55

Line item	Difference (Maryland - Benchmark)			Contribution to Variation		
	Unit Cost	Utilization (RVUs)	Total Allowed Costs PMPM	Unit Cost [a]	Utilization [b]	Total Allowed Costs PMPM
Preventive	-44.34	-0.04	-4.88	-1.42	-3.47	-4.88
Psychiatric	-17.14	0.00	-0.21	-0.47	0.26	-0.21
Physical Therapy, Occupational Therapy, and Speech Therapy	-24.64	-0.01	-1.66	-0.62	-1.04	-1.66
Radiology Diagnostic	5.22	-0.02	-3.62	0.04	-3.66	-3.62
Radiology CT Scan	-37.72	-0.02	-4.59	-0.44	-4.15	-4.59
Radiology Therapeutic	-31.69	-0.01	-1.80	-0.49	-1.31	-1.80
Surgery	-15.21	-0.03	-9.97	-8.00	-1.97	-9.97
Difference, Baltimore – Non-Baltimore						
Total	13.17	0.11	24.54	13.17	11.37	24.54
Alcohol and Drug Abuse	0.74	0.01	0.56	-0.25	0.80	0.56
Cardiovascular	3.89	0.00	-0.18	0.28	-0.46	-0.18
Emergency Department	1.73	0.00	-0.18	-0.05	-0.13	-0.18
Observation	4.55	0.01	0.75	-0.36	1.11	0.75
Other Outpatient Facility	87.56	0.00	10.45	10.73	-0.29	10.45
Pathology Lab	16.08	0.00	0.62	0.33	0.29	0.62
Pharmacy	-2.05	0.06	4.70	-1.05	5.74	4.70
Preventive	32.96	0.00	0.92	1.07	-0.15	0.92
Psychiatric	9.14	0.00	0.42	0.24	0.18	0.42
Physical Therapy, Occupational Therapy, and Speech Therapy	13.59	0.00	0.58	0.28	0.30	0.58
Radiology Diagnostic	10.03	0.01	1.58	0.21	1.37	1.58
Radiology CT Scan	-40.03	0.00	-0.16	-0.65	0.49	-0.16
Radiology Therapeutic	2.38	0.01	0.94	-0.11	1.06	0.94
Surgery	4.83	0.02	3.56	2.11	1.45	3.56

Source: Abt Team analysis of 2019 data from Milliman's Consolidated Health Cost Guidelines Sources Database and the Maryland All Payer Claims Database.

Notes: Estimates were weighted by total number of member months. [a] Unit cost contribution to variation is calculated as: unit_price [MD] * rvu_pmpm [MD] - unit_price [BM] * rvu_pmpm [MD]. [b] Utilization contribution to variation is calculated as: rvu_pmpm [MD] * unit_price [BM] - rvu_pmpm [BM] * unit_price [BM]. Abbreviations: CT, computed tomography; BM, Benchmark; MD, Maryland; PMPM, per member per month; RVUs, relative value units.

Appendix A: Selecting Baltimore and Non-Baltimore Counties

We identified potential counties for inclusion in the Baltimore and non-Baltimore area groupings in conjunction with the HSCRC staff (**Exhibit A1**). Candidates for the Baltimore area included counties in and near the Baltimore Metropolitan area. Candidates for the non-Baltimore area included other urban counties in Maryland. From that list, we further assessed the population density and demographic characteristics of each set of counties. Based on the information available, four counties were included in the Baltimore-area and three counties in the non-Baltimore area (comparison group). While Cecil, Frederick and Howard were considered for inclusion in the study, we ultimately excluded those counties because they had substantially lower population density (population per square mile) than the other counties included in the study.

Exhibit A1. Maryland County Characteristics

FIPS and County Name	County Demographics				Employer-sponsored insurance		Medicare FFS	
	Population	Population per square mile	Average Median Income	Deep Poverty Percentage	Member Months	Average Risk Score	Beneficiary Months	Average HCC Score
Candidate Baltimore-area Counties								
24510 Baltimore City*	593,490	7,327	58,108	9.3%	1,176,778	1.62	897,621	1.29
24005 Baltimore*	827,370	1,383	81,618	4.3%	2,282,285	1.45	1,374,499	1.20
24025 Harford*	255,441	585	94,091	3.5%	806,678	1.33	444,949	1.12
24013 Carroll*	168,447	446	97,913	2.6%	614,010	1.34	353,652	1.11
24015 Cecil	102,855	346	76,828	4.3%	220,590	1.38	190,236	1.17
Candidate Non-Baltimore-area Counties								
24033 Prince George's**	909,327	1,883	92,018	4.0%	1,796,092	1.45	1,058,251	1.16
24031 Montgomery**	1,050,688	2,140	124,202	2.9%	2,840,986	1.22	1,343,849	1.09
24003 Anne Arundel**	579,234	1,395	107,538	2.8%	1,638,339	1.37	872,850	1.11
24021 Frederick	259,547	394	106,452	2.9%	934,801	1.29	362,136	1.14
24027 Howard	325,690	248	130,332	2.5%	1,014,054	1.21	340,164	1.06

Source: Abt Team analysis of 2019 data from the American Community Survey, Milliman's Consolidated Health Cost Guidelines Sources Database, the Maryland All Payer Claims Database, and data provided by the HSCRC on Medicare expenditures per capita for Maryland counties.

Notes: * Selected as a county included in the Baltimore-area geography. ** Selected as a county included in the non-Baltimore-area geography. Abbreviations: FFS, fee-for-service; HCC, Hierarchical Condition Categories.

Appendix B: Results from Medicare Fee-For-Service Data

Exhibit B1. Total Costs, RVUs, and Unit Costs – Total (Medicare Fee-For-Service Data, After HCC-Adjustment)

Areas	Maryland			Benchmark			Difference (Maryland - Benchmark)		
	Unit Cost	Utilization (Monthly Admissions per 1000)	Total Payments PBPM	Unit Cost	Utilization (Monthly Admissions per 1000)	Total Payments PBPM	Unit Cost	Utilization (Monthly Admissions per 1000)	Total Payments PBPM
Baltimore-area									
Total payments	46.06	25.35	1167.82	37.71	25.95	978.69	8.35	-0.60	189.14
Total payments, less medical education	44.38	25.35	1125.23	36.98	25.95	959.84	7.40	-0.60	165.39
Inpatient payments	17.89	25.35	453.48	12.90	25.95	334.92	4.98	-0.60	118.56
Non-Baltimore-area									
Total payments	48.51	20.95	1016.03	42.55	24.06	1023.86	5.96	-3.12	-7.83
Total payments, less medical education	47.37	20.95	992.31	41.60	24.06	1001.05	5.77	-3.12	-8.74
Inpatient payments	16.35	20.95	342.56	14.77	24.06	355.33	1.59	-3.12	-12.77
Difference, Baltimore – Non-Baltimore									
Total payments	-2.44	4.41	151.79	-4.84	1.89	-45.17	2.39	2.52	196.97
Total payments, less medical education	-2.99	4.41	132.92	-4.62	1.89	-41.20	1.63	2.52	174.12
Inpatient payments	1.53	4.41	110.92	-1.86	1.89	-20.41	3.39	2.52	131.33

Source: Abt Team analysis of 2019 data provided by the HSCRC on Medicare expenditures per capita for Maryland counties and non-Maryland benchmark areas.

Notes: Estimates were weighted by total number of beneficiaries per month. Total PBPM costs were adjusted for HCC mix within each county. Utilization was based on the rate of admissions per thousand beneficiaries per month, because a measure of RVUs was not available. Accordingly, utilization does not vary between the total cost and the inpatient line items. Abbreviations: HCC, Hierarchical Condition Categories; PBPM, per beneficiary per month; RVUs, relative value units.

APPENDIX B: RESULTS FROM MEDICARE FEE-FOR-SERVICE DATA

Exhibit B2. Factors Contributing to Variation Between Maryland and Benchmark Areas by Line Item Groupings (Medicare Fee-For-Service Data, After HCC-Adjustment)

Areas	Difference (Maryland - Benchmark)			Contribution to Variation		
	Unit Cost	Utilization (Monthly Admissions per 1000)	Total Payments PBPM	Unit Cost [a]	Utilization [b]	Total Payments PBPM
Baltimore-area						
Total payments	8.35	-0.60	189.14	211.75	-22.61	189.14
Total payments, less medical education	7.40	-0.60	165.39	187.56	-22.18	165.39
Inpatient payments	4.98	-0.60	118.56	126.30	-7.74	118.56
Non-Baltimore-area						
Total payments	5.96	-3.12	-7.83	124.78	-132.61	-7.83
Total payments, less medical education	5.77	-3.12	-8.74	120.92	-129.65	-8.74
Inpatient payments	1.59	-3.12	-12.77	33.25	-46.02	-12.77
Difference, Baltimore – Non-Baltimore						
Total payments	2.39	2.52	196.97	86.97	110.00	196.97
Total payments, less medical education	1.63	2.52	174.12	66.65	107.48	174.12
Inpatient payments	3.39	2.52	131.33	93.05	38.28	131.33

Source: Abt Team analysis of 2019 data provided by the HSCRC on Medicare expenditures per capita for Maryland counties and non-Maryland benchmark areas.

Notes: Estimates were weighted by total number of beneficiaries per month. Total PBPM costs were adjusted for HCC mix within each county. Utilization was based on the rate of admissions per thousand beneficiaries per month, because a measure of RVUs was not available. Accordingly, utilization does not vary between the total cost and the inpatient line items. [a] Unit cost contribution to variation is calculated as: $\text{unit_price [MD]} * \text{util_pmpm [MD]} - \text{unit_price [BM]} * \text{util_pmpm [MD]}$. [b] Utilization contribution to variation is calculated as: $\text{util_pmpm [MD]} * \text{unit_price [BM]} - \text{util_pmpm [BM]} * \text{unit_price [BM]}$. Abbreviations: BM, Benchmark; HCC, Hierarchical Condition Categories; MD, Maryland; PBPM, per beneficiary per month; RVUs, relative value units.