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Maryland Health Services Cost Review Commission

National Benchmarking Informational Webinar

August 31, 2020

September 10, 2020

If you did not receive the materials, please email
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Agenda

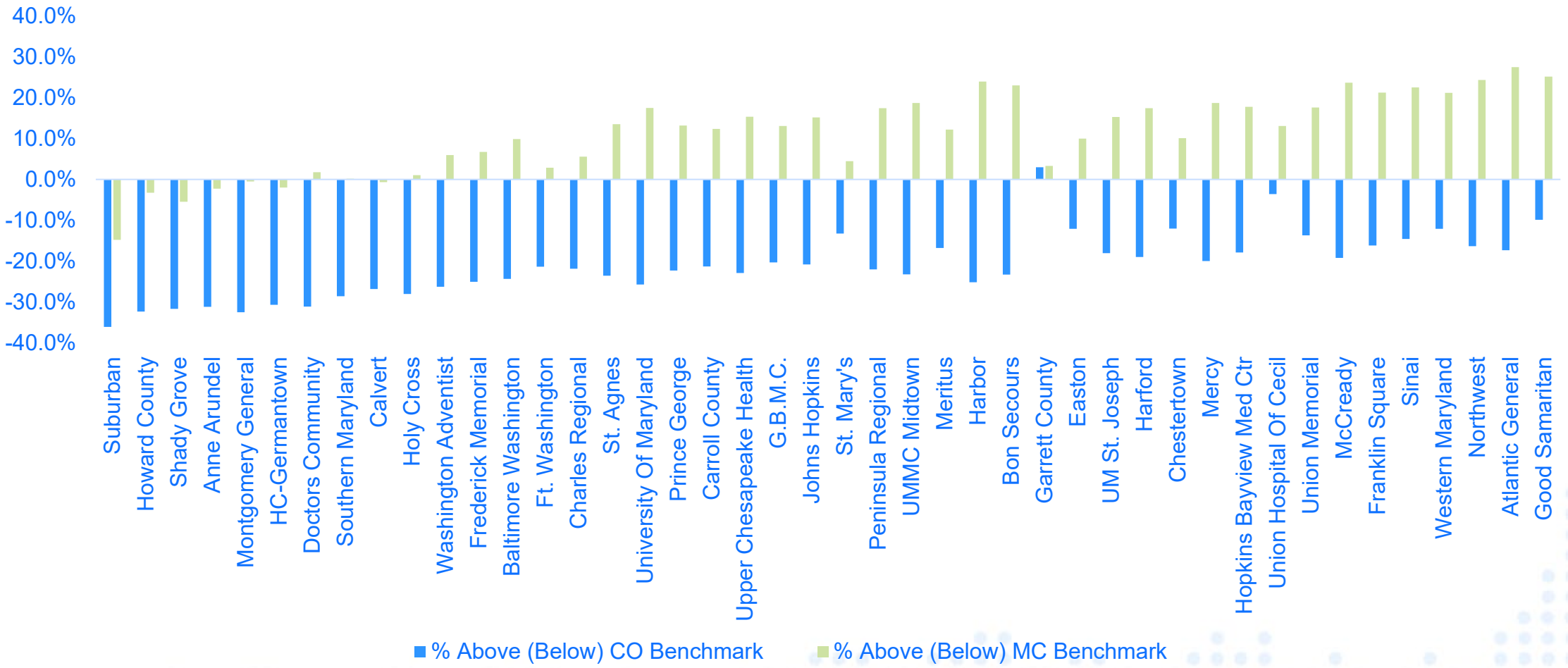
- Overview of Outcomes and Policy Applications
- Methodology
- Review of Supporting Files and Documentation

Benchmarking Overview

- Goal: Create a tool to allow the incorporation of Total Cost of Care (TCOC) benchmarks into appropriate methodologies at a granular level and guide the State on areas of strength and weakness in terms of cost and quality.
- Focus on Medicare (MC) fee-for-service and Commercial (CO) benchmarks of people younger than 65; will explore Medicaid and other areas, but it is likely to just be these two benchmarks in the next year.
  - Because of different data availability MC and CO benchmarks use different comparison groups (although the selection methods are similar and there is substantial overlap in the selected geographies).

Benchmarking Results, Percentage Above (Below) Benchmark

2018, Risk and Demographic Adjusted, Blended Statewide: MC 8.6%, CO (24.3%)



Notes: Results are sorted by average rank on the two benchmarks. Commercial benchmark shown is the average of commercial benchmark. Efficiency policy will use the average of the top half of the benchmark (See discussion on slide 8).

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PMPM Contributors to Variation to Higher (Lower) Costs

Commercial, $ Contribution and % Variation by Bucket

	Utilization	Unit Cost	Total	Comment
Inpatient	$4.14 4.7%	($23.18) (25.1%)	($19.04) (21.6%)	Milliman Global RVUs allow standard calculation of utilization across categories. MD advantage is primarily unit cost.
Outpatient	($9.86) (7.1%)	($34.44) (26.9%)	($44.30) (32.1%)	
Professional	$47.33 28.8%	($44.14) (20.9%)	$3.19 1.9%	
Medical Education			($0.72) 19.5%	MD has slightly higher Med. Education costs, creating a favorable variance when removed.
Risk and Benefit Adjustment			($13.37)	The MD CO population evaluated was riskier and has higher benefits (maybe be population mix in data).
Demographics Adjustment			($21.10)	MD demographics are less favorable: mainly higher incomes correlate with higher costs.
		Total	($95.33)	This ties to 24.3% favorable variation.

PMPM Contributors to Variation to Higher (Lower) Costs

Medicare, $ Contribution and % Variation by Bucket

	Utilization	Unit Cost	Total	Comment
Inpatient	($19.97) (6.0%)	$75.87 24.4%	$55.90 16.9%	
Outpatient			$36.99 19.9%	Global RVUs not available to standardize units yet. Inpatient utilization is admissions per 1000.
Professional			$29.15 10.1%	
Post-Acute			($29.53) 19.3%	
Medical Education			($12.26) 69.6%	MD has higher Medical Education costs, as it includes both IME and DGME, creating a favorable variance when removed*.
Risk Adjustment			$7.50	The MD Medicare population is slightly less risky than the benchmark.
Demographics Adjustment			($8.22)	MD demographics are more expensive.
		Total	$79.52	This ties to 8.6% unfavorable variation.

*National adjustment includes only Indirect Medicare Education payments (IME). Adjustments for Maryland claims include both IME and Direct Medical Education Amounts (DGME). See slide 19.

Applications of the Benchmarking

- ICC and Efficiency Policies will be discussed in the September Efficiency workgroups (9/15 and 9/29).
- Attainment measurement under the MPA will be discussed in the 8/26 TCOC workgroup. They will be captured in CY2021 MPA policy.
- Readmission information used in quality policies has been discussed elsewhere, so the focus of this presentation is on cost.
- Care analytics and diagnostics:
  - Sharing data so industry can use the information to manage care and address gaps
  - HSCRC plans to continue to leverage the data
  - CRISP Learning Collaborative will be promoting additional detailed analysis

Revised Commercial Benchmark for Efficiency Policy

- Efficiency policy will use the average of the top half of the benchmark values in determining CO performance:
  - It is roughly equivalent to 75th percentile (with 100th percentile = low cost), but it works better when looking at individual metrics than a percentile that selects one benchmark as representative.
  - All benchmark Metropolitan Statistical Areas (MSAs) were sequenced by normalized, demographic-adjusted TCOC, and the least expensive half were averaged together.
  - Amounts are shown in the overall results file and in the detail files that will be available with a signed release.

Benchmarking Results

Methodology

Update on Open Items from 12/2019

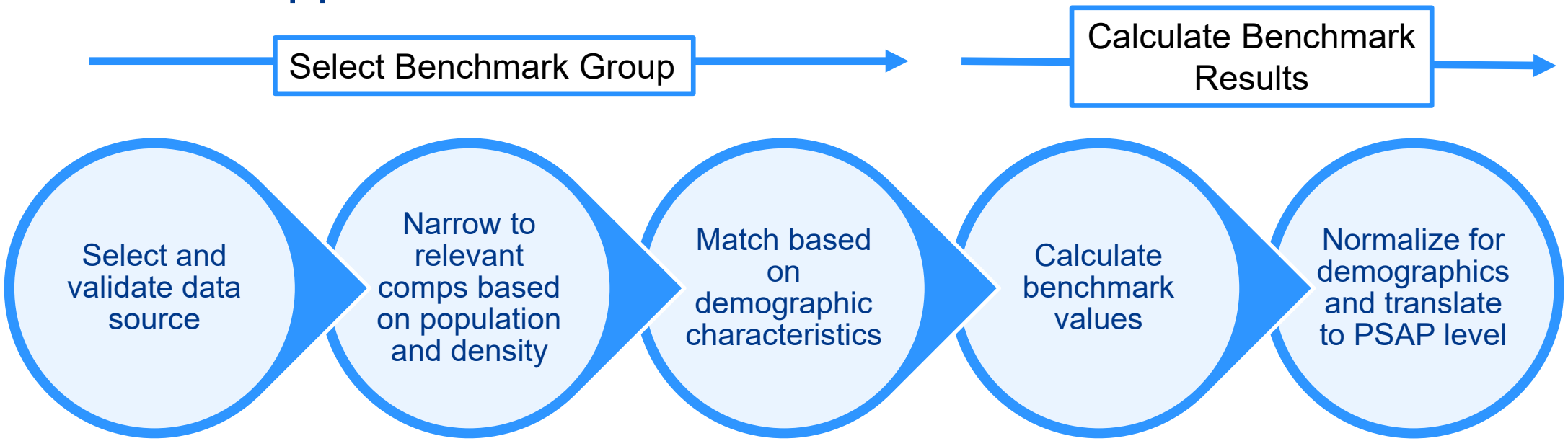
- Updated to 2018 data. The plan is to release an annual update in the spring, but it will always be one full year delayed.
- Medical Education stripped from both data sets.
- Demographic adjustment applied to both data sets—regression using Median Household Income and Average Percent Deep Poverty.
- Geographic peer groups have not changed from those shared previously.

Determination of Evaluation Unit

Geographic Benchmarks

- Focus for this effort is member and beneficiary geography:
  - Geographies align best with per capita measures.
  - Selection of comparison group relies on measures available on a geographic basis.
  - Different site of service mixes makes it important to consider TCOC, not just hospital per capita costs.
- Peer geographies are established at a county level for Medicare and MSA level for CO.
  - Commercial is limited by data availability.
- Maryland and benchmark total cost of care are mapped to each hospital based on MPA Primary Service Area Plus (PSAP) geographic attribution.

Overall Approach



- **MC**: County Level, 100% MD claims, 5% US Sample (A+B)
- **CO**: MSA Level, All-Payer Claims Database (APCD) for MD, Milliman's Consolidated Health Cost Guidelines Sources Database (CSHD) for National

- Limit to reasonable matches

- **MC**: Median Income, Deep Poverty Percentage, Regional Price Parity, Hierarchical Conditioning Categories
- **CO**: Same except add Government payer, share and HHS-HCC Platinum risk scores instead of CMS-HCC (Medicare only)

- Simple average of benchmarks at MSA/county level.
- Risk and Benefit (CO only) Adjustments
- Remove estimated medical education costs from all data

- Calculate MD TCOC for Hospital PSAP and blend relevant benchmarks
- Use regression to further adjust for demographics at the geography and hospital level

Select Benchmark Group

Select and Validate Data Sources

Medicare

CCW Medicare Claims for A+B Beneficiaries, 100% available for MD, 5% sample for national data

Commercial

MD - MD APCD collected by the Maryland Health Care Commission (MHCC), also known as the Medical Claim Database

- ERISA plans are not included in the APCD, and individuals are included.
- Benchmarking excluded Kaiser and beneficiaries older than age 65.
- It represents about 40% of MD beneficiaries. with these exclusions.

National - Milliman's CSHD

- ERISA plans are included but limited in number, and individuals are not included.
- Benchmarking excluded beneficiaries older than age 65.
- Reflects about 98 million commercial -insured people nationwide.

Although the member-type mix in the MD and National data sets vary somewhat, testing has shown that the combination of the risk- and benefit-level adjustments addresses the differences.

Select Benchmark Group

Narrow to Relevant Comparisons and Match Based on Demographic Characteristics

- After narrowing possible comparison geographies based on the level of urbanization, the "similarity" between each MD geography and each comparable geography was calculated across selected metrics.

Median Income Source: American Community Survey	**Regional Price Parities** Measure of price levels across the United States Source: Bureau of Economic Analysis
Deep Poverty Percentage of people earning below 50% of the poverty line Source: American Community Survey	**Risk Score (Medicare CMS- HCC, Commercial HHS – Platinum Risk Score)** Measure of health care cost risk in a population Source: Claims Data
Percentage Government Payer (Commercial Only) – Source: Medicare Cost Reports	

- Peer counties/MSAs are those with the most "similarity" across all measures. The measures are weighted equally in calculating the similarity.

Select Benchmark Group

Match Based on Demographic Characteristics

- Medicare
  - The 20 most “similar” counties are included in the benchmark for 5 major urbanized counties: Anne Arundel, Baltimore City and County, Montgomery and Prince George’s.
  - 50 most “similar” counties are included in the benchmark for all others.
  - Large counties have a smaller selection of peers to choose from. Smaller counties tend to be more unstable in the 5% sample, requiring a larger benchmark group.
- Commercial
  - Regrouped all MD counties into 5 MSA-like regions: Baltimore Area, Eastern Shore, Northern DC Suburbs, Prince George’s, and Southern MD and Western MD
  - Removed cross-state MSAs and incorporated MD non-MSA counties.
  - The 20 most “similar” MSAs are included in the benchmark.
  - Fewer MSAs available to select from but MD Aggregations are larger, so instability is not an issue.

A complete list of benchmark geographies is included in the data package.

Calculate Benchmark Results

Aggregation of Benchmark Geographies and Translation to Hospital PSAP level

- County/MSA Benchmark = Straight average of selected benchmark county/MSA results.

  As noted earlier, the straight average of the 50% lowest-cost MSAs in a benchmark group will be used in the efficiency policy.

  Other reference points can be calculated from the data.

- PSAP Benchmark

  Uses MPA PSAP approach that assigns 100% of MD ZIP codes to a hospital (file with mapping included in data).

  - Hospital-designated Service Area
  - Plus shared ZIPs split by the share of ECMADs* delivered by each hospital (Medicare for Medicare, all-payer for Commercial)
  - Plus unassigned ZIPs assigned to a hospital service area based on location

  Then blends benchmarks for each geography included in a hospital's PSAP

  - For example, on Medicare, if a hospital's PSAP is 40% Kent County beneficiaries and 60% Queen Anne's beneficiaries, the benchmark is 40% the Kent County Benchmark and 60% Queen Anne's
  - Most PSAPs don't cross MSAs, so a single benchmark is used for most PSAPs in Commercial
  - Demographic Adjustment is used to better match benchmark to Hospital PSAP (see later slide)

* ECMADs are an intensity normalized hospital volume measure used by the HSCRC to compare hospital volumes across all service lines

Calculate Benchmark Results

2018 Baltimore Washington Medical Center (BWMC) Example

		Commercial		Medicare	
		BWMC PSAP	Benchmark	BWMC PSAP	Benchmark
A	Unadjusted Total Cost of Care (TCOC)	$348	$391	$1,050	$960
B	Medical Education	$5	$4	$27	$17
C = A - B	TCOC Less Medical Education	$343	$387	$1,023	$944
D	Normalized Risk Score	1.061	0.988	1.006	1.006
E = C / D	Risk Adjusted TCOC	$323	$391	$1,017	$938
F	Benefit-Level Adjustment	1.033	1.009		
G = E / F	Risk- and Benefit-Level Adjusted TCOC	$313	$388	$1,017	$938
H	Regression Predicted TCOC	$416	$391	$928	$940
I = F/H	Observed-to-Expected Ratio	0.752	0.993	1.097	0.998
J	Benchmark Average Allowed TCOC	$394	$394	$923	$923
K = I x J	Normalized Demographic Adjusted TCOC	$296	$392	$1,012	$921
L = K^{MD}/K^{BM} -1	MD Above (Below) Benchmark	**(24.3%)**		**9.9%**	

See following slides for discussion of each item in the build-up and the technical reference documents for further detail.

Benchmark Calculation Explanations

Unadjusted Total Cost of Care

Element	Commercial	Medicare
(A) Unadjusted Total Cost of Care	**Allowed Dollars**	**Paid Dollars**

Notes:

- Allowed is used for Commercial to avoid variation caused by different cost sharing structures. As Medicare cost sharing is standardized, that is not necessary for Medicare. In addition, Medicare paid correlates to the MD Model savings test.
- Both Paid and Allowed for both Commercial and Medicare are available in the detail files.
- Pharmacy claims are excluded other than those covered under the medical benefit.

Benchmark Calculation Explanations

Medical Education

Element	Commercial	Medicare
(B) Medical Education (Direct Graduate and Indirect Medical Education)	**MD & National: Direct and Indirect removed**	**MD: Direct and Indirect removed National: Indirect removed**

Notes:

- Amounts were all applied against inpatient costs. Indirect Medical Education (IME) amounts are removed based on a per resident cost developed by the HSCRC as part of our efficiency policies which is then translated into a per day cost based total days reported in Medicare cost reports. Per resident costs are calculated separately for Major ($321,708) and Moderate ($116,986) teaching hospitals. For each payer, we used proportion of patient days to calculate IME for Medicare and Commercial.

- Medicare: Direct Graduate Medical Education (DGME) is removed from Maryland hospitals based on the direct payments and days reported in Medicare cost report. Direct Graduate Medical Education is excluded from national Medicare claims and therefore does not need additional adjustment.

- Commercial: For Maryland amounts are removed at a hospital level for national they are removed based on an MSA average. Amounts are assumed to be a proxy for revenue premiums earned by non-MD teaching hospitals because of their teaching status.

Benchmark Calculation Explanations

Risk Adjustment

Element	Commercial	Medicare
(D) MD Normalized Risk Score	**HHS-HCC Platinum Risk Score normalized to the MD average**	**CMS HCC Score normalized to the MD average**

Notes:

- Risk scores are applied on a linear basis by dividing Unadjusted Cost of Care by the relevant risk score.
- CMS-HCC risk scores were calculated by the HSCRC based on CMS' published methodologies.
- Normalizing to the MD average results in a risk score of 1.00 for MD experience.

Benchmark Calculation Explanations

Benefit Adjustment

Element	Commercial	Medicare
(F) Benefit-Level Adjustment	**Milliman developed plan benefit normalization factor to account for allowed cost and utilization differences caused by plan design**	**Not Applicable**

Notes:

- Accounts for differences in consumer behavior resulting from varying plan design to remove the impact of richer plan designs on increasing health care utilization. Because the benchmark is based on allowed cost, the direct cost share differences are already removed. It is not applicable to Medicare because plan designs do not vary within Medicare.
- Value is stated as an index where 1.00 reflects average experience. At an MSA level, most benefit differences average out and the impact on the results is minimal. On average, MD has slightly richer plan designs, so the impact of this on increasing utilization is removed.

Benchmark Calculation Explanations

Demographic Regression Adjustment

Element	Commercial	Medicare
(H) Regression Predicted TCOC	**Predicted risk- and benefit-adjusted TCOC based on demographic values for deep poverty and median income**	**Predicted risk-adjusted TCOC based on demographic values for deep poverty and median income**

Notes:

- This value is used to accomplish two goals: (1) to adjust for demographic differences not fully accounted for by heath risk and (2) to allow a more refined comparison to a hospital-specific service area that varies in demographics from the geography on which its benchmarking was based. The supplemental documentation includes the regression coefficients and statistical evaluations for each model.
- Health risk factors are not considered in the regression because risk-adjusted TCOC values are used in the regression.
- This value is used to modify the adjusted TCOC calculated in step G by calculating an observed-to-expected ratio (step G / step H) and applying that to the Benchmark Average Allowed TCOC in the next step.
- See the appendix for a recap of the way different demographic and health risk factors are included in the mythology.

Benchmark Calculation Explanations

Establish Common Denominator for Evaluation

Element	Commercial	Medicare
(J) Benchmark Average Allowed TCOC	**Straight average of risk-, benefit-, and demographic-adjusted TCOC across all benchmark geographies**	**Straight average of risk- and demographic-adjusted TCOC across all benchmark geographies**

Notes:

- Value described in table is used as a base for restating all MD and benchmark values against a common standard by multiplying the observed-to-expected ratio in the prior step by this value. All results are thereby stated using a common demographic profile and are therefore directly comparable with one another.
- Benchmark rather than MD values were used in this step so that the expected relationship between MD and National is preserved.

Benchmark Calculation Explanations

Calculate Performance

Element	Commercial	Medicare
(L) MD Above (Below) Benchmark	**Positive = % greater than benchmark TCOC Negative = % less than benchmark TCOC**	**Positive = % greater than benchmark TCOC Negative = % less than benchmark TCOC**

Notes:

- Amounts shown in the example compare Commercial with the national average. For some purposes, other benchmark reference points will be used.

Benchmarking Results

Explanation of Materials

Material Included in August 2020 Materials Zip

The first tab in most of the Excel files contains a directory to the other tabs.

Medicare Fee-for-Service Benchmarking Documentation C... Microsoft Word Document	1. Documentation for Medicare benchmarking process
MD_Commercial_Benchmarking_Documentation_CY2018_Long.docx Microsoft Word Document	2. Documentation for Commercial benchmarking process
Commercial Data Third Party Release - Template.doc Microsoft Word 97 - 2003 Docum...	3. Commercial data release template, see discussion on the next slide
Benchmarking Overview Presentation 8-24.pptx Microsoft PowerPoint Presentation	4. This presentation
Overall Summary of Results CY2018 8-24.xlsx Microsoft Excel Worksheet	5. Summary of final benchmarking results currently being used
Medicare Benchmark Data CY2018_Data 8-24.xlsx Microsoft Excel Worksheet	6. Medicare data, including MD and Benchmark summary and granular data
Commercial_Benchmark_CY2018_Data_8-24.xlsx Microsoft Excel Worksheet	7. Commercial data, including MD and Benchmark summary data (see next slide)
BWMC Build Up.xlsx Microsoft Excel Worksheet 14.3 KB	8. Excel version of BWMC example shown in this presentation
All payer and Medicare PSAP 4.2.2019.xlsx Microsoft Excel Worksheet	9. Current ZIP-code-to-hospital PSAP attribution for both Medicare and All-Payer
Benchmark_PSAP_weight_long_ad_hoc.csv Microsoft Excel Comma Separate...	10. Alternative presentation of Medicare Benchmark to PSAP mappings, see discussion in #6

Commercial Data Restrictions

Requesting Additional Detail

- Medicare file includes data for every MD and Benchmark county both in total and with numerous data slices. Because of restrictions on the use of Milliman CSHD data, the HSCRC can only release summary-level commercial results publicly.
- Hospitals can access granular detail for all MD geographies and the benchmark by signing the release form included in this package and returning to the HSCRC. We will share the additional data based on forms received by 9/4 and periodically thereafter.
  - Additional detail does not include specific benchmark MSAs. Instead, it includes various benchmark points (average, average of top half, and average of top three) plus many data slices. HSCRC has specific MSA information if it becomes necessary to investigate a specific benchmark.
  - Release form permits (encourages) sharing the data with your expert consultants and other key constituents.

Future Analytics and Reporting

- CRISP will release commercial data in a report format in early November:
  - Same data as in the additional data release but accessed through a tableau interface
  - Will require the same signed release to access
- Staff considering a tool for the Medicare data and application of a standardized unit approach like Milliman's global RVUs.
- HSCRC staff will continue to pursue analytics based on the benchmarking data:
  - We encourage hospitals to use the data to evaluate their service areas
  - CRISP Learning Collaborative is looking at pursuing some analytics using this data

Appendix

Recap of Demographic Factors

	Medicare	Commercial
Factors used in narrowing potential matching populations for each MD geography	Urban/Rural Indicator Population Size Population Density	Population Size Population Density
Factors used in selecting matching national geographies for each MD geography	CMS - HCC Score Deep Poverty Percentage Median Income Regional Price Parity	HHS-HCC Platinum Risk Score Deep Poverty Percentage Median Income Regional Price Parity Percentage Spending from Government Payers
Factors used in risk adjusting and normalizing benchmark values to MD geography and MD Hospital-Attributed Population (parenthesis indicates level of detail at which value is mapped to a beneficiary)	CMS - HCC Score (Beneficiary) Deep Poverty Percentage (ZIP) Median Income (ZIP)	HHS-HCC Platinum Score (Beneficiary) Deep Poverty Percentage (County) Median Income (County) Benefit Levels (County)