MILLIMAN REPORT

Simulation of Version 40 APR DRG Payments

Commissioned by Blue Cross Blue Shield of Massachusetts

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Executive Summary

We have prepared this report to document the data sources, assumptions, and methodologies supporting our simulation of payments for certain commercial inpatient hospital services provided by in-network acute care hospitals using the version 40 3M™ All Patient Refined Diagnosis Related Groups (APR DRG) classification system, as requested by Blue Cross Blue Shield of Massachusetts (BCBSMA). We understand that BCBSMA will share exhibits and data extracts documenting the results of the modeling described in this report with these hospitals.

BCBSMA currently uses version 34 of the APR DRG classification system to calculate payments for certain commercial inpatient hospital services provided by in-network acute care hospitals. On May 1, 2024, BCBSMA plans to implement the following updates to the APR DRG based payment system:

- Updating to version 40 of the 3M™ APR DRG classification system.
- Updating APR DRG relative weights to be based on information published by 3M™ for version 40 of the APR DRG classification system.
- Updating per diem conversion factors, outlier thresholds, short stay thresholds, and other payment system parameters.

BCBSMA also plans to implement the following updates to the Inpatient Acute Medical Admissions payment policy for discharge dates on or after May 1, 2024:

- Updating the readmissions payment policy to deny all readmissions that occur within seven (7) days of a prior discharge at the same hospital with certain exceptions specified by BCBSMA.

Based on the methodologies and parameters described in this report as specified by BCBSMA for the updated APR DRG-based payment system and using an analytical dataset of commercial inpatient hospital claims provided by BCBSMA, Milliman calculated standard rates to achieve simulated budget targets at a provider and product level specified by BCBSMA. Our calculation of standard rates and other parameters for the updated APR DRG-based payment system assumes a constant volume and mix of services based on March 2022 through February 2023 claims experience, adjudicated through July 2023. Additionally, while we have calculated payment system parameters to achieve simulated budget targets at the provider and product level specified by BCBSMA, simulated payment impacts for specific populations, types of services, and hospital and/or product combinations may vary in direction and magnitude.

The simulation model results can be used to understand the relative impact of reimbursement changes between the version 34 and version 40 APR DRG based payment systems when applied to the fixed set of March 2022 through February 2023 claims experience. However, the simulation results may not represent a complete estimate of total hospital inpatient payments during the period of March 2022 through February 2023 for several reasons – including, but not limited to, the following:

- The simulation model does not attempt to account for expected changes in enrollment, utilization patterns, or service mix between the March 2022 through February 2023 claims experience and future periods.
- BCBSMA's expenditures for commercial claims could be impacted by other plan coverage, design, or other policy changes between the March 2022 through February 2023 claims experience and future periods.
- We excluded certain claims when establishing the analytical dataset of commercial inpatient hospital claims used in the simulation model. These exclusions are detailed later in this report. Additionally, the analytical dataset may reflect other limitations or inconsistencies in the inpatient hospital claims data and other data sources used to construct it.

In the subsequent sections of this report, we provide background information on BCBSMA's use of the 3M™ APR DRG classification system for determining inpatient hospital payments for commercial lines of business, as well as a detailed discussion of the methodologies, assumptions, and data sources that we relied on to simulate payments under BCBSMA's current version 34 and updated version 40 APR DRG payment systems.

Background

BCBSMA's APR DRG based payment methodology and rates are used to calculate payments for commercial inpatient hospital services provided by in-network acute care hospitals. On May 1, 2024, BCBSMA plans to implement version 40 of the APR DRG classification system, associated revisions to APR DRG weights and other payment system parameters, and a change in readmissions payment policy.

3M™ VERSION 40 APR DRG CLASSIFICATION SYSTEM AND RELATIVE WEIGHTS

Each year, on or around October 1, 3M™ releases a new APR DRG grouper version, revising the grouper logic to accommodate changes in the ICD-10-CM diagnosis and ICD-10-PCS procedure code sets and to enhance the clinical precision for APR DRG and severity of illness (SOI) classifications based on patient diagnoses, procedures, and other patient-related clinical data.

Along with the release of each new APR DRG grouper version, 3M™ also publishes an associated set of updated APR DRG relative weights which represent the average billed charges for inpatient hospital stays assigned to a particular APR DRG relative to the average charges of all inpatient hospital stays. 3M™ publishes two sets of relative weights: "traditional" relative weights and Hospital Specific Relative Value (HSRV) relative weights. To compute the HSRV relative weights, 3M™ applies a process that normalizes each hospital's billed charges by its case-mix adjusted average charge prior to calculating the relative weight for each APR DRG.

The traditional and HSRV relative weights for version 40 of the APR DRG grouper were calculated by 3M™ using approximately 13 million inpatient claims from the 2018 and 2019 Agency for Healthcare Research and Quality (AHRQ) Healthcare Cost and Utilization Project (HCUP) National Inpatient Sample (NIS) research datasets.[1] The NIS approximates a 20 percent stratified sample of all discharges from U.S. community hospitals, excluding rehabilitation and long-term acute care hospitals, and contains information on all hospital stays, regardless of the expected payer for the hospital stay.[2]

At BCBSMA's direction, we have used the 3M™ version 40 APR DRG HSRV relative weights to simulate payments under the updated version 40 APR DRG payment system except as noted later in this report. The current version 34 APR DRG based payment system uses the 3M™ version 34 APR DRG HSRV relative weights except as noted later in this report.

[1] APR DRG v40.0 Weights and Trims – Traditional calculation. Added September 7, 2022. Retrieved from 3M™ HIS website on September 8, 2022.

[2] For more information, see https://www.hcup-us.ahrq.gov/nisoverview.jsp

Methodology

BASE DATA

To perform the analysis described in this report, we relied on paid and rejected claims data files provided to us by BCBSMA. These claims data files include inpatient claim records for services provided by BCBSMA's in-network acute care hospitals. The claim records consist of clinical and administrative information about each inpatient hospital stay, including information required to assign an APR DRG to each claim using 3M™ Grouper Plus Content Services (GPCS) software and information required to calculate payments according to BCBSMA's current version 34 and updated version 40 APR DRG based payment systems.

The paid claims data include 90,945 claims with discharge dates spanning from March 1, 2022, through February 28, 2023, with paid dates through July 28, 2023. The rejected claims data include 924 claims that were identified as being original versions of bridged paid claims subject to BCBSMA's current readmissions payment policy. Prior to using the claims data for simulation modeling, we applied the following adjustments and exclusions at the direction of BCBSMA:

- For 18,923 newborn claims, BCBSMA provided a supplemental file of birth weights which were used to support version 34 and version 40 APR DRG assignment using the 3M™ GPCS software.
- For 252 high-cost claims that have processed through BCBSMA's itemized bill pre-payment review, charge adjustments were estimated and provided by BCBSMA.
- At BCBSMA's direction and guidance, we removed the following claims from the paid claims data:
    - One hospital which closed over half its services had those service types removed from the data.
    - Claims not subject to APR DRG reimbursement or eligible for payment under non-standard contract terms, including claims for hospitals reimbursed at a percentage of fees (PAF), claims that include services identified as being eligible for reimbursement under non-standard contract terms.
    - Claims with third-party liability.
    - Claims for Federal Employee Program (FEP) members aged 65 or older.
    - Claims for CAR-T services that were delivered as part of a clinical trial, identified as claims assigned a version 40 APR DRG of '011' but not having any claim lines with a cell therapy revenue code of '0891'.
    - Claims that were assigned an error version 34 or version 40 APR DRG of '955' or '956'.
    - Claims where Milliman's simulation of historical payments under the version 34 APR DRG payment system could not be reconciled within either $5.00 or 0.025% of the allowed amount reported by BCBSMA.
- If a bridged paid claim subject to BCBSMA's current readmissions payment policy was removed from the paid claims data based on the above criteria, original non-bridged versions of the claim from the rejected claims data were also excluded from the analytical dataset.

After applying the adjustments and exclusions described above, we established an analytical dataset containing 85,325 claims.

In developing the analytical dataset, we performed reasonableness and internal consistency testing and analysis. The intent of this testing and analysis was to understand and appropriately use the source data and validate that our process is working as intended. We also solicited feedback from BCBSMA to better understand and use their claims data records. The analytical dataset represents the culmination of our data processing steps and other testing and validation performed.

As described further below, we also relied on other sources to simulate payments under both the version 34 and version 40 APR DRG payment system scenarios. We relied on APR DRG payment system methodologies and

parameters described in the "BCBS of Massachusetts APR DRG v34 Hospital Inpatient Payment System Methodology" document, version 34 APR DRG weights, short stay thresholds, outlier thresholds, as well as supplemental guidance and information provided by BCBSMA. We also relied on Master Rate Files (MRFs) and 2023 "current rate" files provided by BCBSMA for standard rates and ratios of costs-to-charges (RCCs) to simulate version 34 APR DRG payments at historical and current rates. Finally, we relied on a file of admit keys and additional guidance provided by BCBSMA to link bridged paid claims subject to BCBSMA's current readmissions payment policy to associated original non-bridged rejected claims.

In relying on these data sources, we reviewed them for reasonableness, but we did not audit them.

APR DRG ASSIGNMENT

We assigned version 34 and version 40 APR DRGs to the claim records provided by BCBSMA. The APR DRG grouper preferences and settings used are documented below. If BCBSMA uses grouper preferences or settings in the implementation of the version 40 APR DRG payment system that are different from the preferences and settings documented below, the APR DRG classifications that we have assigned may not be appropriate for simulating payments.

We validated these APR DRG assignments by comparing our version 34 APR DRG assignments to the version 34 APR DRGs that were assigned by BCBSMA. Our version 34 APR DRG assignments were the same for 99.9% of the paid and rejected claim records analyzed. Some differences in APR DRG assignments may be related to changes in the version 34 APR DRG assignment logic that 3M™ implements as incremental updates to their software.

Additionally, we reviewed changes in version 34 to version 40 APR DRG assignments to confirm that changes were reasonable.

To assign version 34 APR DRGs, we relied on grouper preferences and settings documented in 3M's Grouper Reimbursement Matrix, which we received from 3M™ on June 16, 2022. The preferences and settings from 3M's Grouper Reimbursement Matrix were shared with and confirmed by BCBSMA. We used the following preferences and settings in the 3M™ GPCS software when assigning version 34 APR DRGs:

- **Use POA:** Yes
- **Interpretation of Undetermined POA Indicators:** None
- **Birth Weight Option:** Entered or coded weight with default
- **Discharge DRG Option:** Compute excluding all Complication of Care codes
- **Entered Code Mapping:** Automatically determine code mapping
- **Mapping Type:** Historical

At BCBSMA's direction, we updated the Discharge DRG Option to "Compute excluding only non-POA Complication of Care codes" for assignment of version 40 APR DRGs. This represents a change relative to the Discharge DRG Option setting used for assignment of version 34 APR DRGs. We used the following preferences and settings in the 3M™ GPCS software when assigning version 40 APR DRGs:

- **Use POA:** Yes
- **Interpretation of Undetermined POA Indicators:** None
- **Birth Weight Option:** Entered or coded weight with default
- **Discharge DRG Option:** Compute excluding only non-POA Complication of Care codes
- **Entered Code Mapping:** Automatically determine code mapping
- **Mapping Type:** Historical

For both the version 34 and version 40 APR DRG assignments, Hospital Acquired Condition (HAC) logic was not applied.

PAYMENT SIMULATION

We simulated payments for the claims in the analytical dataset under three scenarios:

Scenario 1: Version 34 APR DRG Payment System with Historical Rates

This scenario was used to validate Milliman's version 34 APR DRG assignments and simulated payments relative to the assignments and allowed amount reported in the claims data provided by BCBSMA. Under this scenario, we simulated payments for paid claims only based on:

- Version 34 APR DRGs assigned by Milliman,
- Version 34 APR DRG relative weights, short stay thresholds, and outlier thresholds provided by BCBSMA,
- Historical standard rates and RCCs documented in BCBSMA's MRF, and
- Methodologies and parameters described in the "BCBS of Massachusetts APR DRG v34 Hospital Inpatient Payment System Methodology" document provided by BCBSMA.

Scenario 2: Version 34 APR DRG Payment System with Current Rates

This scenario was used to develop the budget targets used to calculate standard rates under the version 40 APR DRG payment system scenario. Under this scenario, we simulated payments for paid claims only based on:

- Version 34 APR DRGs assigned by Milliman,
- Version 34 APR DRG relative weights, short stay thresholds, and outlier thresholds provided by BCBSMA,
- Trended standard rates documented in BCBSMA's "2023 Rate File",
- RCCs documented in BCBSMA's MRF,
- Methodologies and other parameters described in the "BCBS of Massachusetts APR DRG v34 Hospital Inpatient Payment System Methodology" document provided by BCBSMA.

Scenario 3: Version 40 APR DRG Payment System

This scenario represents the updated version 40 APR DRG payment system. Under this scenario, we simulated payments for paid claims that are not bridged readmissions and rejected claims that are original non-bridged versions of bridged readmissions. We simulated payments for these claims based on:

- Version 40 APR DRGs assigned by Milliman,
- Version 40 APR DRG relative weights, short stay thresholds, and outlier thresholds described in the subsequent section of this report,
- Standard rates calculated to achieve simulated budget targets at a provider and product level specified by BCBSMA,
- RCCs documented in BCBSMA's MRF, and
- Methodologies described in the "BCBS of Massachusetts APR DRG v34 Hospital Inpatient Payment System Methodology" document provided by BCBSMA, and other version 40 APR DRG payment system parameters described in the subsequent section of this report.

VERSION 40 APR DRG PAYMENT SYSTEM METHODOLOGY AND PARAMETERS

APR DRG Grouper Version and Weights

We used the 3M™ version 40 APR DRG classification system and 3M™ version 40 APR DRG HSRV weights. At BCBSMA's direction, version 40 APR DRG classifications have been assigned excluding only non-POA complication of care codes. This represents a change relative to BCBSMA's version 34 APR DRG classifications, which are assigned excluding all complication of care codes.

Adjustments to 3M™ HSRV Weights

At the direction of BCBSMA, adjustments have been calculated for obstetric, mental health, and substance use disorder DRGs under the version 40 APR DRG payment system to enhance payment for these services.

- **Obstetrics (APR DRG Service Line 18):** 3M™ HSRV weights for DRGs '539' through '566' were adjusted by a factor of approximately 1.0819 to maintain similar payment levels network-wide for these services relative to payments under the version 34 APR DRG payment system.
- **Mental Health and Substance Use Disorder (APR DRG Service Line 22):** 3M™ HSRV weights for DRGs '750' through '776' were adjusted by a factor of approximately 2.1758 to increase payment levels network-wide for these services relative to payments under the version 34 APR DRG payment system.

Outlier Thresholds

DRG-specific outlier thresholds have been calculated at a DRG and SOI level as the product of each DRG's adjusted 3M™ HSRV weight and the weighted average network standard rate for all claims in the analytical dataset, plus a fixed amount calculated to preserve total network-wide simulated outlier payments as compared to the version 34 APR DRG payment system.

Short Stay Thresholds

DRG-specific short stay thresholds have been calculated at a DRG and SOI level as the third percentile of a lognormal length of stay distribution based on mean and variance statistics published by 3M™ for APR DRG version 40. After calculating the third percentile of the length of stay distribution for each DRG and SOI, the threshold was rounded down to the nearest whole number of days. DRGs with a 3M™ published mean length of stay of less than four days were assigned a short stay threshold of zero (0) such that they will not be subject to short stay adjustments.

Per Diem Conversion Factors

Behavioral health, short stay, and transfer per diem conversion factors for the version 40 APR DRG payment system have been calculated as the inverse of the discharge-weighted average of the 3M™ published average length of stay for APR DRG version 40 for claims subject to each per diem methodology in the analytical dataset.

- Behavioral Health: A per diem conversion factor of 0.166531 was calculated for behavioral health claims. Behavioral health claims are identified based on a DRG assignment of '750' through '776'. Claims assigned to DRG '740', which include gender affirming procedures, are not subject to per diem payment. This represents an update to the behavioral health payment methodology, as this DRG was subject to per diem payment under the version 34 APR DRG payment system.
- Transfer: A per diem conversion factor of 0.141942 was calculated for transfer claims. Transfer claims are identified based on a discharge status of '02', '05', '43', or '99'.
- Short Stay: A per diem conversion factor of 0.115698 was calculated for short stay claims. Short stay claims are identified based on a length of stay less than or equal to the DRG-specific short stay threshold.

Readmissions Payment Policy

To reduce administrative complexity and improve the transparency of the readmissions payment policy, BCBSMA is updating the policy to deny all readmissions that occur within seven (7) days of a prior discharge at the same hospital with certain exceptions. The change in readmissions payment policy and related considerations for simulation modeling are described in greater detail later in this report.

Standard Rates

For contracts with combined standard rates across multiple hospital entities under the current version 34 APR DRG payment system, version 40 APR DRG payments were simulated using a combined standard rate across the same hospital entities. Otherwise, version 40 APR DRG payments were simulated using a standard rate for each hospital entity as defined by BCBSMA.

For contracts with a combined standard rate for HMO, PPO, and Indemnity products under the current version 34 APR DRG payment system, version 40 APR DRG payments were simulated using a combined standard rate across

HMO, PPO, and Indemnity products. Otherwise, version 40 APR DRG payments were simulated using a combined standard rate for PPO and Indemnity products.

Pricing Methodology

BCBSMA's version 40 APR DRG payment system uses the same underlying hierarchical logic as the version 34 APR DRG payment system to determine how each claim is priced:

- If claim charges multiplied by the hospital RCC is greater than the outlier threshold for the DRG and SOI assigned to the claim, the claim allowed amount is the Case Rate Allowed plus Outlier Allowed;
- Else, if the claim is assigned a behavioral health DRG, the claim allowed amount is the lesser of the Per Diem Allowed priced using the behavioral health per diem conversion factor or the Case Rate Allowed;
- Else, if the claim is coded with a transfer discharge status code, the claim allowed amount is the lesser of the Per Diem Allowed priced using the transfer per diem conversion factor or the Case Rate Allowed;
- Else, if the claim length of stay is less than or equal to the short stay threshold for the DRG assigned to the claim, the claim allowed amount is the lesser of the Per Diem Allowed using the short stay per diem conversion factor or the Case Rate Allowed;
- Else, the claim allowed amount is the Case Rate Allowed.

Case Rate Allowed is calculated by multiplying the DRG relative weight by the standard rate applicable for the given hospital and product:

$$Case\ Rate\ Allowed = (DRG\ Weight) \times (Standard\ Rate)$$

Outlier Allowed is calculated as the difference between the claim charges multiplied by the hospital RCC and the DRG outlier threshold:

$$Outlier\ Allowed = [(Claim\ Charges) \times (Hospital\ RCC)] - (DRG\ Outlier\ Threshold)$$

Per Diem Allowed is calculated as the product of the DRG relative weight, the standard rate applicable for the given hospital and product, the claim length of stay, and the per diem conversion factor:

$$Per\ Diem\ Allowed = (APR\ DRG\ Weight) \times (Standard\ Rate) \times (Claim\ Length\ of\ Stay)$$
$$\times (Per\ Diem\ Conversion\ Factor)$$

READMISSIONS PAYMENT POLICY UPDATES

Under BCBSMA's current inpatient acute medical admissions payment policy, BCBSMA bridges certain readmissions with prior related claims if the readmissions occur within seven (7) days of the discharge date of the prior inpatient stay, are at the same hospital as the prior inpatient stay and have a same or similar diagnosis as the prior inpatient stay, subject to clinical review. After bridging a readmission with a prior related claim, BCBSMA calculates payment for the bridged claim as if it were a single hospital stay. For discharge dates on or after May 1, 2024, BCBSMA is updating the payment policy to deny readmissions that occur within seven (7) days of the discharge date of a prior inpatient stay and are at the same hospital as the prior inpatient stay, with the following exceptions:

- **Transfers:** If an initial inpatient stay is assigned a discharge status code of '02', '05', '43', or '99', a subsequent inpatient stay will not be considered a readmission.
- **Chemotherapy:** If both an initial and subsequent inpatient stay are assigned a chemotherapy DRG of '695' or '696', the subsequent inpatient stay will not be considered a readmission.
- **Behavioral Health:** If either an initial inpatient stay or a subsequent inpatient stay has a behavioral health revenue code or is assigned a behavioral health DRG, the subsequent inpatient stay will not be considered a readmission.
    - Behavioral health revenue codes: '0114', '0124', '0118', '0128', '0134', '0138', '0144', '0148', '0158', '0154'

  - Behavioral health DRGs: '750' through '776'

- **Maternal Delivery:** If an inpatient stay is assigned a delivery DRG of '539', '540', '541', '542', or '560', it will not be considered a readmission.

To account for the revenue impact of changes in BCBSMA's readmissions payment policy, Milliman simulated payments under the version 34 and version 40 APR DRG payment system scenarios as follows.

Scenarios 1 and 2: Version 34 APR DRG Payment System with Historical and Current Rates

We simulated payments under the version 34 APR DRG payment system only for claims that were eligible for payment under the current readmissions payment policy. Claims eligible for payment under the current policy include the bridged versions of claims subject to the current policy but exclude the original non-bridged versions of these claims.

Scenario 3: Version 40 APR DRG Payment System

We simulated payments under the version 40 APR DRG payment system for claims that will be eligible for payment under the new readmissions payment policy. Claims eligible for payment under the new policy include the original non-bridged versions of claims subject to the current policy but exclude the bridged versions of claims subject to the current policy and also exclude claims that would be denied under the new policy. For modeling purposes, denials under the new readmissions payment policy were identified prior to applying exclusions to establish the analytical dataset, consistent with our understanding for how BCBSMA will implement the policy.

Because many newborn claims in the analytical dataset are reported with the mother's Member ID, we identified readmissions under the new policy using the combination of Member ID and patient date of birth. However, this approach also presents limitations in identifying readmissions, such as in cases where an initial inpatient stay for the newborn is reported with the mother's Member ID and a subsequent inpatient stay for the same newborn is reported with the child's Member ID after it has been assigned.

Additionally, due to data limitations, there were 150 bridged claims subject to the current readmissions payment policy for which it was not possible to identify associated original non-bridged claims. While the bridging of claims under the current readmissions payment policy generally results in reduced payments, many of the readmissions subject to bridging under the current policy would also be subject to denial under the new policy. Where the original non-bridged versions of claims subject to the current policy could not be identified, we increased the budget target for payments under the version 40 APR DRG payment system to account for the potential revenue impact of the change in policy. The budget targets for payments under the version 40 APR DRG payment system were increased as follows:

- **Step 1:** Calculate the average impact of the readmissions payment policy change on simulated payments under the version 34 APR DRG payment system for claims bridged under the current policy where the original non-bridged versions of the claims could be identified.
- **Step 2:** Calculate the ratio of (1) simulated payments under the version 34 APR DRG payment system for claims bridged under the current readmissions payment policy where the original non-bridged versions of the claims could not be identified relative to (2) simulated payments under the version 34 APR DRG payment system for claims bridged under the current readmissions payment policy where the original non-bridged versions of the claims could be identified.

$$Ratio = \frac{Simulated\ Version\ 34\ APR\ DRG\ Payments\ Where\ Original\ Unbridged\ Claims\ \boldsymbol{Could\ Not}\ Be\ Identified}{Simulated\ Version\ 34\ APR\ DRG\ Payments\ Where\ Original\ Unbridged\ Claims\ \boldsymbol{Could}\ Be\ Identified}$$

- **Step 3:** Increase the budget target for simulated version 40 APR DRG payments relative to simulated version 34 APR DRG payments by an amount equal to the product of the values calculated in Step 1 and Step 2, above.

Data Reliance and Variability of Results

Milliman prepared this report for the specific purpose of documenting the data sources, assumptions, and methodologies supporting our simulation of payments under an updated version 40 APR DRG payment system, as requested by BCBSMA. This material may not be appropriate, and should not be used, for any other purpose.

This material has been prepared solely for the use and benefit of BCBSMA, and it is only to be relied upon by BCBSMA. No portion of this material may be provided to any other party without Milliman's prior written consent. In the event such consent is provided, this material must be provided in its entirety. Milliman acknowledges and consents to BCBSMA's intent to share this information with the hospitals.

In preparing this material, we relied on several sources of data and information provided by BCBSMA and other sources, including:

- **Claims Data:** For the final simulation modeling described in this report, we relied on paid claims data with discharges from March 1, 2022, through February 28, 2023, paid through July 31, 2023, provided by BCBSMA on August 24, 2023. We additionally relied on rejected claims data with discharges from February 1, 2022, through February 28, 2023, adjudicated through July 31, 2023, provided by BCBSMA on August 31, 2023. We also relied on admit key data to link bridged paid claims subject to BCBSMA's current readmissions payment policy to rejected claims provided by BCBSMA on August 31, 2023.
- **Supplemental File of Newborn Birth Weights:** We relied on a supplemental file of newborn birth weights provided by BCBSMA on May 15, 2023.
- **Supplemental File of Adjusted Charges for Certain High Cost Claims:** For certain high-cost claims that have been processed through BCBSMA's itemized bill pre-payment review, BCBSMA provided a supplemental file of estimated charge adjustments on October 27, 2023.
- **Master Rate Files (MRFs):** For the final simulation modeling described in this report, we relied on historical version 34 APR DRG standard rates and RCCs provided by BCBSMA on August 24, 2023.
- **2023 Rate File:** For the final simulation modeling described in this report, we relied on trended version 34 APR DRG standard rates provided by BCBSMA on June 26, 2023.
- **Version 34 APR DRG Weights, Outlier Thresholds, and Short Stay Thresholds:** We relied on version 34 APR DRG weights, outlier thresholds, and short stay thresholds provided by BCBSMA on March 27, 2023, to simulate historical and current version 34 APR DRG payments.
- **Version 34 APR DRG Payment System Methodologies and Parameters:** We relied on documentation of the version 34 APR DRG payment system methodologies and parameters provided by BCBSMA on October 18, 2022.
- **Assignment of 3M™ Version 34 and Version 40 APR DRGs:** We relied on APR DRG assignments produced by the 3M™ GPCS software.
- **3M™ Version 40 APR DRG HSRV Relative Weights and Statistics:** We relied on version 40 APR DRG HSRV relative weights produced by 3M™ to simulate version 40 APR DRG payments. We also relied on length of stay statistics produced by 3M™ to calculate short stay thresholds and per diem conversion factors for the version 40 APR DRG payment system.
- **Medicare Cost Reports:** We relied on Medicare cost report data from the Healthcare Cost Report Information System (HCRIS) to estimate claim costs and margins.

In addition to the specific information and data sources described above, we relied on guidance and information provided by BCBSMA to support the development of the analytical dataset and the version 34 and version 40 APR DRG simulation models. We relied on BCBSMA for all final decisions related to the design of the version 40 APR DRG payment system, including decisions related to the simulated change in readmissions payment policies. Additionally, we relied on BCBSMA for the design of a budget target adjustment for simulated version 40 APR DRG

payments to account for the potential revenue impact of changes in BCBSMA's readmissions payment policy where original non-bridged versions of bridged readmissions could not be identified.

We did not audit any of the data sources or other information, but we did assess the data and information for reasonableness. If the data or other information used is inadequate or incomplete, the results will be likewise inadequate or incomplete.

Milliman has developed certain models to estimate the values included in this material. The intent of the models was to simulate hospital inpatient reimbursement under the version 34 and version 40 APR DRG payment systems. We have reviewed the models, including their inputs, calculations, and outputs for consistency, reasonableness, and appropriateness to the intended purpose and in compliance with generally accepted actuarial practice and relevant actuarial standards of practice (ASOPs). The models, including all input, calculations, and output, may not be appropriate for any other purpose.

Actual hospital inpatient reimbursement will differ from the simulated amounts due to differences in health care trends, enrollment changes, changes in hospital charge masters, the impact of the COVID-19 pandemic, incomplete data for original non-bridged versions of bridged readmissions, and many other factors. It is certain that actual experience will not conform exactly to the assumptions used. Actual amounts will differ from simulated amounts to the extent that actual experience is better or worse than expected.

The simulation model results can be used to evaluate the relative impact of the change from the version 34 to version 40 APR DRG payment system when applied to a fixed set of claims experience. However, simulation results do not represent a complete estimate of hospital inpatient costs for BCBSMA or related revenues for hospitals as the simulation model does not attempt to account for expected changes in enrollment, utilization patterns, or service mix. Additionally, the volume of claim records included in the simulation model may be higher or lower than actual future claims volume due to incomplete claims data submissions, the exclusion of certain claims due to data limitations, or other limitations to our analysis. The claims records used in the simulation model may also reflect other limitations or inconsistencies in the data sources used to construct the analytical dataset.

This material is technical in nature and is dependent upon specific assumptions and methods. No party should rely on this material without a thorough understanding of those assumptions and methods. Such an understanding may require consultation with qualified professionals.

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