MILLIMAN REPORT

Wisconsin Department of Health Services

Hospital Measurement Year 2020 Preliminary Readmissions Results

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Overview

The Wisconsin Department of Health Services (DHS) has engaged Milliman to provide inpatient hospital readmission analyses in support of DHS' Medicaid fee-for-service (FFS) hospital pay-for-performance (P4P) program and Health Maintenance Organization (HMO) quality initiatives for measurement year (MY) 2020. These analyses were conducted using the 3M™ Potentially Preventable Readmissions (PPR) grouping software and Wisconsin Medicaid FFS claims data and HMO encounter data. This report describes the MY 2020 preliminary Medicaid PPR analyses of readmissions by hospital and by FFS and by managed care Badger Care Plus (BCP) and Supplemental Security Income (SSI) populations. **The hospital MY 2020 preliminary readmissions results produced for these analyses are for informational and reporting purposes only, and do not represent final MY 2020 PPR analyses used for quality payment program purposes.** The services provided for this project were performed under the signed contract between Milliman and DHS effective February 3, 2021.

Per 3M, the PPR software identifies "a readmission within a specified time interval that is determined to be clinically related to a previous admission and potentially preventable."[1] The software identifies whether a readmission is clinically related to a prior admission for the same patient, regardless of whether the readmission occurred at the same hospital, based on the prior admission's diagnosis and procedure codes and the reason for readmission. For more information on the PPR software see the "3M™ Potentially Preventable Readmissions (PPR) Grouping Software" fact sheet.[2]

The DHS Medicaid quality payment programs related to the PPR analyses described in this report are performance measurements based on average rates of readmissions over time compared to statewide benchmarks (as opposed to a claim payment denial for an individual readmission). PPR analyses used for DHS' Medicaid quality payment programs are described as follows:

- *FFS hospital P4P program:* DHS goal for its FFS hospital P4P program is "to promote and recognize high quality patient care at all hospitals throughout Wisconsin."[3] For MY 2020, DHS withheld 3% of inpatient FFS claim payments for in-state acute hospitals and out-of-state major border hospitals paid under All Patient Refined Diagnosis Related Groups (APR DRGs) with more than 25 qualifying admissions per year (averaged over two prior years) to create a hospital P4P payment pool.[4] Once MY 2020 claims data is reasonably mature, qualifying hospitals will receive incentive payments from the P4P payment pool based on their risk-adjusted readmission performance compared to calendar year (CY) 2018 statewide benchmarks.

  In its FFS hospital P4P guide DHS stated that it aims to reduce the statewide FFS PPR rate by 7.5% for end of MY 2020. For more background, refer to DHS' "Wisconsin Medicaid Program Measurement Year (MY) 2020, 1/1/20 – 12/31/20 Hospital Pay-for-Performance (P4P) Guide."

- *HMO quality initiative:* DHS' Medicaid managed care quality initiative consists of multiple payment policies to incentivize HMOs to improve the measurable quality of care for Medicaid members in the BCP and SSI programs. DHS' HMO quality initiative includes a PPR program for BCP with the following stated goal:

  > *To reduce [PPRs] for Wisconsin Medicaid served by HMOs. Excess readmission chains relative to benchmarks suggest an opportunity to improve patient outcomes and to reduce costs through discharge planning, coordination across sites of service, and/or other improvements in the delivery of care.* [5]

[1] https://www.3m.com/3M/en_US/health-information-systems-us/drive-value-based-care/patient-classification-methodologies/pprs/

[2] https://multimedia.3m.com/mws/media/849903O/3m-ppr-grouping-software-fact-sheet.pdf

[3] Wisconsin DHS, "Wisconsin Medicaid Program Measurement Year (MY) 2020, 1/1/20 – 12/31/20 Hospital Pay-for-Performance (P4P) Guide", https://www.forwardhealth.wi.gov/wiportal/content/provider/medicaid/hospital/p4p_guides/pdf/MY2020_HospitalP4P_Guide.pdf.spage

[4] Hospitals paid on a per-diem basis (psychiatric hospitals, rehabilitation hospitals, and long term acute care providers), hospitals with 25 or fewer qualifying admissions per year, and out-of-state non-border hospitals are excluded from the FFS P4P claim payment withhold.

[5] Wisconsin DHS, "Wisconsin Department of Health Services (DHS) Division of Medicaid Services (DMS) HMO Quality Guide: Measurement Year 2020",

For MY 2020, DHS established a funding pool for an upside only incentive payment (without penalties or capitation rate withholds) to be distributed among HMOs that meet their risk-adjusted readmission targets for the actual to benchmark ratio. HMOs that do not meet the target will not receive PPR incentive funds. HMOs may retain up to 15% of PPR incentive earned for their administrative expenses; remaining incentives must be shared with their providers, including hospital and non-hospital providers.

For more background, refer to DHS' "Wisconsin Department of Health Services (DHS) Division of Medicaid Services (DMS) HMO Quality Guide: Measurement Year 2020."[6]

The MY 2020 preliminary results accompanying this report are preliminary and subject to change based on the availability of additional data and information and DHS policy decisions. Final MY 2020 PPR calculations for the hospital P4P program will be conducted separately, subsequent to these analyses using claims and encounter data submitted through June 30, 2021. Readers should reference DHS' MY 2020 FFS hospital P4P guide and appropriate 3M PPR documentation to understand the appropriate use of the information presented; this report should not be considered complete without the reader's reference to those documents.

https://www.forwardhealth.wi.gov/WIPortal/content/Managed%20Care%20Organization/Quality_for_BCP_and_Medicaid_SSI/pdf/MY2020_HMO_Quality_Guide.pdf.spage

[6] Ibid.

Results and Methodology

The MY 2020 preliminary readmission results accompanying this report are based on Medicaid inpatient FFS claims and HMO encounter data received from DHS on April 30, 2021. These data include inpatient claims and encounters incurred between October 2019 and April 2021, paid through April 2021. We created an extract, transform, and load (ETL) process to combine these Medicaid inpatient claim and encounter header data into a single dataset. Once combined, we created necessary 3M PPR software input files, and executed the 3M PPR software using all inpatient claims and encounters from the DHS extract.

Per DHS P4P policy requirements, we processed the MY 2020 inpatient FFS claims and HMO encounter data, excluding Medicare crossovers claims, using 3M PPR software version 34 with a 30-day readmission time window. Upon successful completion of the software and assignment of the PPR grouper output, we reviewed the results for completeness and excluded records rejected by the 3M-PPR business rules. We augmented the cleansed 3M PPR results with necessary identifiers to develop exhibits and conduct further analyses. These identifiers include, but are not limited to, Medicaid population, facility name, and benchmark category. Finally, we created extracts in support of the exhibits accompanying this report, excluding records that did not match a Medicaid population[7] or facility of focus.

PPR grouper output relied upon included version 34 APR DRGs and secondary mental health status[8], and key flag fields needed to identify "index admissions" (the initial admission in a "chain" of readmissions), subsequent related PPRs, "only admissions" (without subsequent PPRs), and other admissions excluded from the readmission measurements by the 3M PPR algorithm.[9] The MY 2020 readmission rate analysis included initial admissions in readmission chains that began in CY 2020 (even if the readmissions occurred in CY 2021), and excluded readmissions that occurred in CY 2020 where the initial admission in the chain began in CY 2019. The MY 2020 readmission rate analysis also excluded Special Needs Plans (SNP) patients identified by DHS.

For validation purposes, the results of this process were compared to DHS' prior MY 2020 third quarter PPR analyses developed by DHS' prior contractor. We were generally able to reconcile the results to the prior analyses, with minor differences mainly attributed to the MY 2020 preliminary PPR analyses including more claim runout than the prior MY 2020 third quarter analysis.

For each hospital we calculated MY 2020 readmission rates by population (FFS, BCP, and SSI) by dividing index admissions by "qualifying admissions" (the sum of index admissions and only admissions). We also calculated of hospital's benchmark readmission rates by applying 2018 readmission rates to the MY 2020 hospital utilization. For FFS, DHS had a MY 2020 goal of a 7.5% reduction in readmission rates compared to the 2018 benchmark; as such we calculated both "full" benchmark readmission rates (at 100% of the 2018 benchmark) and "target" benchmark readmission rates (at 92.5% of the 2018 benchmark).

Statewide aggregate MY 2020 readmission rates are summarized in Table 1 below.

TABLE 1 – MY 2020 STATEWIDE READMISSION RATES BY POPULATION

MY 2020 FFS Readmission Rates	Qualifying Admissions	Index Admissions (PPR Chain)	Readmission Rate
FFS			
MY 2020 FFS actual readmission rate	25,750	1,987	**7.72%**
MY 2020 FFS full benchmark readmission rate (based on 100% of 2018 benchmarks)	25,750	1,875	**7.28%**
MY 2020 FFS target benchmark readmission rate (based on 92.5% of 2018 benchmarks)	25,750	1,734	**6.73%**

[7] The MY 2020 readmissions analysis excludes 354 admissions where the population program could not be identified.

[8] Secondary mental health status is assigned by the PPR software and used to identify and account for the differing rates of readmissions occurring for these individuals. Secondary mental health status is not used when assessing the rate of readmissions for behavioral health-related admissions.

[9] See the PPR documentation for a listing of the classifications of inpatient stays performed by this software.

MY 2020 FFS Readmission Rates	Qualifying Admissions	Index Admissions (PPR Chain)	Readmission Rate
Managed Care BCP			
MY 2020 BCP actual readmission rate	61,403	2,650	**4.32%**
MY 2020 BCP full benchmark readmission rate (based on 100% of 2018 benchmarks)	61,403	2,468	**4.02%**
Managed Care SSI			
MY 2020 SSI actual readmission rate	6,673	773	**11.58%**
MY 2020 SSI full benchmark readmission rate (based on 100% of 2018 benchmarks)	6,673	732	**10.98%**

As shown Table 1, MY 2020 statewide aggregate actual readmission rates slightly exceeded the benchmarks for each population. MY 2020 inpatient hospital utilization, service mix, and practice patterns were significantly impacted by the COVID-19 pandemic. Given the effect of the public health emergency (which was not reflected in the 2018 benchmark data), DHS may need to further review of post-2020 experience to evaluate long-term trends in Wisconsin Medicaid hospital readmission rates.

Note that hospital P4P program payments will be based on each hospital's readmission performance relative to its own benchmark readmission rates (as opposed to the statewide aggregate average readmission rate).

DEVELOPMENT OF MY 2020 PRELIMINARY RESULTS

After the ETL and PPR grouping process, we summarized MY 2020 data for the purposes of producing hospital and HMO-specific reports based on the requirements specified in the DHS MY 2020 hospital and HMO P4P guides. Per DHS's direction, we summarized the PPR analyses for reporting purposes as follows:

1. MY 2020 data was summarize and as follows:
    a. Program – FFS, BCP, or SSI
    b. Attributed facility – the hospital at which an admission occurred or, for PPRs, the facility at which the attributed initial admission (start of the readmission chain) occurred
    c. APR DRG – based on the PPR grouping software assignment
    d. Admission type – based on PPR grouping software flag fields:
        i. Initial admissions – an initial inpatient admission for a patient where there was a subsequent PPR within 30 days (the start of a "readmission chain" of admissions)
        ii. PPRs – readmission that was potentially preventable within 30 days of an initial admission or another PPR, part of a readmission chain
        iii. Only admissions – admissions without a subsequent PPR within 30 days
        iv. Excluded admissions – admissions not counted as initial admissions, PPRs, or only admissions (e.g. cases where the patient expired or for clinically complex cases)
    e. Secondary mental health status – based on the PPR grouping software assignment (used for benchmarking purposes)

2. MY 2020 data summaries include the following totals:
    a. Count of admissions by the admission types and variables listed above
    b. Reported allowed dollars by the admission types and variables listed above
    c. Summary of benchmark PPR chains and benchmark readmission rates, both at 100% of the 2018 benchmark readmission rates at 92.5% of the 2018 rates (per DHS' goal of reducing readmissions by 7.5% by the end of MY 2020).

The readmissions reporting is focused on initial admissions, only admissions, *qualifying admissions* (the sum of initial and only admissions), and the rate of PPR chains as a percent of qualifying admissions (i.e., the count of initial admissions divided by the count of qualifying admissions). Financial values associated with these admission types

are also included the analyses (e.g. the average allowed dollar cost of a PPR chain). For more information about the types of admissions identified by the PPR software and their definitions, please see pages 5 and 6 of the Hospital P4P Guide and page 19 of the HMO P4P Guide.

Per DHS' MY 2020 readmission policy requirements, in the PPR reporting we also compared MY 2020 PPR rates to benchmark values based on CY 2018 Medicaid experience developed by DHS' prior contractor.[10] CY 2018 PPR benchmark rates have been finalized by DHS, and were summarized at the APR DRG level, and included separate risk adjustments for pediatric patients, secondary mental health status, and behavior health DRGs. Milliman has relied on the validity and applicability of these CY 2018 benchmarks and has not audited or reconciled these results. To the extent this provided data is not accurate or is not complete, the values provided in this report may likewise be inaccurate or incomplete.

To calculate the benchmark PPR chains shown in the report, we first summarized the MY 2020 qualifying admission counts by program, hospital, APR DRG, adult/pediatric identification, secondary mental health status, and presence of behavior health DRG. We then multiplied the MY 2020 qualifying admission counts by the DHS' program-specific APR DRG benchmark PPR chain rate (based CY 2018 data), which produced a non-population adjusted PPR benchmark. We then adjusted the benchmark PPR chains by multiplying by the appropriate DHS pediatric and behavioral health population adjustment factor (also based CY 2018 data).

For a detailed description of the DHS requirements for our PPR analyses, including specifications for PPR calculations, comparison to CY 2018 benchmarks, and the basis for subsequent MY 2020 P4P payment calculations, refer to pages 10 and 11 in the Hospital P4P Guide (which illustrates the calculations required to develop the provided exhibits).

The hospital MY 2020 readmission reports accompanying this report consist of hospital-specific PDF summaries of admission types and benchmarks, separated by FFS, BCP, and SSI populations. Milliman has also developed Excel-based hospital-specific admission-level tables of each index admission and readmission identified by the PPR grouping software. This provides DHS and providers with the ability to track individuals through their PPR chain and review the services provided (as defined by the reported APR DRG) or to refer to their own claims data for more information about the PPR chain.

[10] DHS readmission policies for MY 2020 PPR reporting did not require a comparison to MY 2019 results.

Data Sources and Assumptions

The MY 2020 preliminary readmission results were developed using data from the sources described below.

DHS P4P PERFORMANCE GUIDES

The MY 2020 FFS hospital and HMO P4P Guides were downloaded from the DHS website. These DHS documents describe the methodologies employed in our development of the PPR analysis of readmission rates, readmission payments, average readmission chain payments, and associated benchmark values. These DHS documents also describe the subsequent P4P payment calculations for the final MY 2020 readmissions analyses.

HOSPITAL CROSSWALK

Based on DHS' list of in-state and major border hospitals and hospital types, provided by DHS on March 11, 2021.

3M PPR GROUPING SOFTWARE

3M™ PPR Grouping Software version 34 was used to process the Medicaid inpatient claims data provided by DHS. We relied on accurate processing by the software, reviewed the software output for reasonableness, but did not audit the results.

For the purposes of our analyses, the software uses sorted detailed inpatient claims data as inputs and appends APR DRGs and admission type, among other outputs, to the claims data. These output fields, along with the other claims data information (such as reported allowed amounts), are the inputs for our analyses as outlined by the HMO and FFS P4P Guides.

WISCONSIN MEDICAID FFS CLAIMS AND HMO ENCOUNTER DATA

DHS provided Milliman with Medicaid inpatient hospital FFS claims and HMO encounter data used in these analyses on April 30, 2021. These claims included service dates during 2019 and 2020 and submitted through April 2021. We understand these claims were extracted by DHS' MMIS vendor. We reviewed the provided data for reasonableness and compared our results to those of the prior contractor for the overlapping periods of our analyses (when possible), but we did not audit the data provided by DHS.

WISCONSIN MEDICAID SNP MEMBER LIST

DHS provided Milliman with a Medicaid SNP member list on June 9, 2021 for exclusion from the readmission rate analysis.

2018 PPR BENCHMARKS, PRIOR RESULTS, AND DOCUMENT TEMPLATES

DHS provided Milliman with its prior period PPR claims and encounter data processed by the prior PPR contractor, including MY 2019 and MY 2020 quarters 1-3 claims and encounter data processed under PPRs received from DHS on February 15, 2021, and MY 2018 PPR benchmark data received from DHS on March 12, 2021. Prior period PPR data did not include documentation for preprocessing, PPR software setting, post-processing, or data cleaning steps; as such our reliance upon these claims and encounter data are based on our assumptions and interpretations of available information. In addition, DHS provided Milliman its prior period quarterly readmission reports developed by the prior contractor for reference purposes on February 3-5, 2021.

Caveats and Limitations

The services provided for this project were performed under the signed contract between Milliman and DHS effective February 3, 2021.

This report contains information produced, in part, by using the 3M™ Potentially Preventable Readmissions (PPR) software, which is proprietary computer software created, owned and licensed by 3M Company. All copyrights in and to the 3M Software are owned by 3M Company or its affiliates. All rights reserved.

The information contained in this report has been prepared for the State of Wisconsin Department of Health Services (DHS). We understand that this report may be shared with Wisconsin Medicaid hospitals. To the extent that the information contained in this correspondence is provided to any approved third parties, the correspondence should be distributed in its entirety. Any user of the data must possess a certain level of expertise in health care modeling that will allow appropriate use of the data presented.

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Milliman has developed certain models to estimate the values included in this report. The intent of the models is to provide hospitals and HMOs with preliminary estimates of MY 2020 readmission rates relative to statewide benchmarks for informational purposes. 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 (ASOP).

The models rely on data and information as input to the models. We have relied upon certain data and information provided by CMS, 3M, Gainwell Technologies, Guidehouse, DHS, and DHS's provider and HMO partners for this purpose and accepted it without audit. To the extent that the data and information provided is not accurate, or is not complete, the values provided in this report may likewise be inaccurate or incomplete.

Milliman's data and information reliance includes the items outlined in the Data Sources and Assumptions section of this report. The models, including all input, calculations, and output may not be appropriate, and should not be use, for any other purpose.

This work does not represent a projection. Differences between our results and actual amounts depend on the extent to which future experience conforms to the assumptions made for these analyses. PPR analyses results may change from these estimates due to final DHS policy decisions. In addition, future PPR results will differ from these estimates due to a number of factors, including changes to medical management policies, enrollment, provider utilization and service mix, COVID-19-related impacts, and other factors.

The model and results for MY 2020 are preliminary and subject to change based on the availability of additional data and information. These results do not represent the final PPR analyses and withholding impacts for MY 2020.

Guidelines issued by the American Academy of Actuaries require actuaries to include their professional qualifications in all actuarial communications. Peter Hallum is a member of the American Academy of Actuaries and meets the qualification standards for performing the analyses in this report.

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