Qlarant

Medicaid Managed Care Organization

Encounter Data Validation Final Report

Calendar Year 2021

Maryland
DEPARTMENT OF HEALTH

Revised March 2023

Table of Contents

Encounter Data Validation Report

Calendar Year 2021

Introduction and Purpose

The Medicaid Managed Care provisions of the Balanced Budget Act of 1997 (BBA) directed the U.S. Department of Health and Human Services to develop protocols to serve as guidelines for conducting external quality review organization (EQRO) activities. Beginning in 1995, the Centers for Medicare and Medicaid Services (CMS) began developing a series of tools to help state Medicaid agencies collect, validate, and utilize encounter data for managed care program oversight. According to CMS, encounter data identifies when a provider rendered a specific service under a managed care delivery system. States rely on valid and reliable encounter data submitted by managed care organizations (MCOs) to make key decisions, establish goals, assess and improve quality of care, monitor program integrity, and determine capitation rates.

Validation of encounter data provides the Maryland Department of Health (MDH) with a level of confidence in the completeness and accuracy of encounter data submitted by the MCOs. CMS strongly encourages states to contract with EQROs to conduct encounter data validation (EDV) to ensure the overall validity and reliability of its encounter data. As payment methodologies evolve and incorporate value-based payment elements, collecting complete and accurate encounter data is critical.

In compliance with the BBA, MDH contracts with Qlarant to serve as the EQRO for the HealthChoice Program. MDH contracts with The Hilltop Institute at the University of Maryland, Baltimore County (Hilltop) to analyze and evaluate the validity of encounter data. Qlarant conducted EDV for calendar year (CY) 2021, encompassing January 1, 2021 through December 31, 2021, for all nine HealthChoice MCOs:

- Aetna Better Health of Maryland (ABH)
- AMERIGROUP Community Care (ACC)
- CareFirst BlueCross BlueShield Community Health Plan (CFCHP)
- Jai Medical Systems, Inc. (JMS)
- Kaiser Permanente of the Mid-Atlantic States, Inc. (KPMAS)
- Maryland Physicians Care (MPC)
- MedStar Family Choice, Inc. (MSFC)
- Priority Partners (PPMCO)
- UnitedHealthcare (UHC)

Methodology

Qlarant conducted EDV in accordance with the *CMS External Quality Review (EQR) Protocol 5*, *Validation of Encounter Data Reported by the Medicaid and CHIP Managed Care Plan.*[1] To assess the completeness and accuracy of encounter data, Qlarant completed the following activities:

1. **Reviewed state requirements for collecting and submitting encounter data.** Qlarant reviewed MDH contractual requirements for encounter data collection and submission to ensure the MCOs followed the State's specifications in file format and encounter types.

2. **Reviewed the MCO's capability to produce accurate and complete encounter data.** Qlarant completed an evaluation of the MCO's Information Systems Capabilities Assessment (ISCA) to determine whether the MCO's information system is able to collect and report high-quality encounter data.

3. **Analyzed MCO electronic encounter data for accuracy and completeness.** MDH elected to have Activity 3 completed by Hilltop. Hilltop performed an evaluation of all electronic encounter data submitted by the MCOs for CY 2018 through CY 2020 to determine the validity of the encounter data and ensure the data are complete, accurate, and of high quality.

4. **Reviewed medical records for confirmation of findings of encounter data analysis.** Qlarant's certified coders/nurse reviewers compared electronic encounter data to medical record documentation to confirm the accuracy of reported encounters. A random sample of encounters for inpatient, outpatient, and office visit claims were reviewed to evaluate if the electronic encounter was documented in the medical record and the level of documentation supported the billed service codes. Reviewers further validated the date of service, place of service, primary and secondary diagnoses and procedure codes, and if applicable, revenue codes.

5. **Submitted findings to the State.** Qlarant prepared this report for submission to MDH, which includes results, strengths, and recommendations.

Results

State Requirements for Collecting and Submitting Encounter Data

Qlarant reviewed information regarding MDH's requirements for collecting and submitting encounter data. MDH provided Qlarant with:

[1] CMS EQRO Protocols

- MDH's requirements for collecting and submitting encounter data by MCOs, including specifications in the contracts between the State and the MCO.
- Data submission format requirements for MCOs.
- Requirements specifying the types of encounters that must be validated.
- MDH's abridged data dictionary.
- A description of the information flow from the MCO to the State, including the role of any contractors or data intermediaries.
- MDH's standards for encounter data completeness and accuracy.
- A list and description of edit checks built into MDH's Medicaid Management Information System (MMIS) that identifies how the system treats data that fails edit checks.
- Requirements regarding timeframes for data submission.
- Prior year's EQR report on validating encounter data.
- The Hilltop Institute's report, *EQR Protocol 5, Activity 3: Validation of Encounter Data, CY 2019 to CY 2021*.
- Any other information relevant to encounter data validation.

MDH sets forth the requirements for the collection and submission of encounter data by MCOs in Section II.I.4, and 5 of the CY 2021 HealthChoice MCO Agreement (page 12-13), which specifies the encounter data requirements. Appendix M of the contract includes all Code of Maryland Regulations (COMAR) provisions applicable to MCOs, including regulations concerning encounter data. Regulations applying to encounters in CY 2021 are noted in Table 1.

Table 1. CY 2021 COMAR Requirements for Encounter Data

COMAR	Requirement

10.67.03.11A	A description of the applicant's management information system, including, but not limited to:
	• Capacities, including:
	  ○ The ability to generate and transmit electronic claims data consistent with the Medicaid Statistical Information System (MSIS) requirements or successor systems;
	  ○ The ability to collect and report data on enrollee and provider characteristics and on all services furnished to enrollees through an encounter data system;
	  ○ The ability to screen the data collected for completeness, logic, and consistency; and
	  ○ The ability to collect and report data from providers in standardized formats using secure information exchanges and technologies utilized for Medicaid quality improvement and care coordination efforts;
	• Software;
	• Characteristics; and
	• Ability to interface with other systems

COMAR	Requirement
10.67.03.11B	A description of the applicant's operational procedures for generating service-specific encounter data.
10.67.03.11C	Evidence of the applicant's ability to report, on a monthly basis, service-specific encounter data in UB04 or CMS1500 format.
10.67.07.03A(1)	MCOs shall submit to MDH the following: Encounter data in the form and manner described in COMAR 10.67.04.15B, 42 CFR §438.242(c), and 42 CFR §438.818.
10.67.07.03B	MCOs shall report to MDH any identified inaccuracies in the encounter data reported by the MCOs or its subcontractors within 30 days of the date discovered regardless of the effect which the inaccuracy has upon MCOs reimbursement.

10.67.04.15B	Encounter Data:
	• MCOs shall submit encounter data reflecting 100% of provider-enrollee encounters, in CMS1500 or UB04 format or an alternative format previously approved by MDH.
	• MCOs may use alternative formats including:
	  ○ ASC X12N 837 and NCPDP formats; and
	  ○ ASC X12N 835 format, as appropriate.
	• MCOs shall submit encounter data that identifies the provider who delivers any items or services to enrollees at a frequency and level of detail to be specified by CMS and MDH, including, at a minimum:
	  ○ Enrollee and provider identifying information;
	  ○ Service, procedure, and diagnosis codes;
	  ○ Allowed, paid, enrollee responsibility, and third party liability amounts; and
	  ○ Service, claims submissions, adjudication, and payment dates.
	• MCOs shall report encounter data within 60 calendar days after receipt of the claim from the provider.
	• MCOs shall submit encounter data utilizing a secure online data transfer system.

The electronic data interchange (EDI) is the automated system that includes rules dictating the transfer of data from each MCO to MDH. MDH uses the Health Insurance Portability and Accountability Act (HIPAA) EDI transaction sets and standards for data submission of 820, 834, 835, and 837 files. The 837 contains patient claim information, while the 835 contains the payment and/or explanation of benefits for a claim. MDH processes encounters via the Electronic Data Interchange Translator Processing System for completeness and accuracy. All encounters are validated on two levels: first by performing Level 1 and Level 2 edits checks on 837 data using HIPAA EDI implementation guidelines; and second, within MMIS's adjudication process.

MDH provided an abridged data dictionary and described the process of encounter data submission from the MCOs to the State. MCOs can submit encounter data through a web portal or through a file transfer protocol. Each MCO may contract a vendor or use data intermediaries to perform encounter data submission.

The system treats encounters that fail the MMIS edit checks in the following manner:

1. All denied and rejected encounters appear with the MMIS Explanation of Benefit (EOB) code and description in the 8ER file, with one exception. EOB 101 is excluded from this report.
2. The 835 file contains all paid and denied encounters. Denied encounters use the HIPAA EDI Claim Adjustment Reason Codes and Remittance Advice Remark Codes to report back the denied reason. Encounters marked as suspended are not included in the 835.
3. In addition, MMIS generates a summary report for each MCO.

MDH sets forth requirements regarding time frames for data submission in COMAR 10.67.04.15B, which specifies that MCOs must report encounter data within 60 calendar days after receipt of the claim from the provider. For daily data exchanges, the cutoff time is 3 PM for transmission of a single encounter data file for an MCO to receive an 835 the next day.

MCO's Capability to Produce Accurate and Complete Encounter Data

Qlarant assessed each MCO's capability for collecting accurate and complete encounter data. Each MCO's information system process and capabilities in capturing complete and accurate encounter data will be assessed through the following steps:

1. Review of the MCO's ISCA.
2. Interview MCO personnel, as needed.

The purpose of the ISCA review is to assess the MCO's information system capabilities to capture and assimilate information from multiple data sources. The documentation review also determines if the system may be vulnerable to incomplete or inaccurate data capture, integration, storage, or reporting. Documentation review findings are used to identify issues that may contribute to inaccurate or incomplete encounter data.

After reviewing the findings from the ISCA, Qlarant conducted follow-up interviews with MCO personnel, as needed, to supplement the information and ensure an understanding of the MCO's information systems and processes. No issues were identified. Results of the document review and interview process are summarized in Table 2 below.

Table 2. CY 2021 ISCA Summary

Information Systems Component	HealthChoice Aggregate
Capable of capturing accurate encounter data?	Yes
Captures all appropriate data elements for claims processing?	Yes
Clean Claims in 30 Days Timeliness Standard	95%

Clean Claims in 30 Days Timeliness Rate	99%
Electronic professional and facility claims	93%

Analysis of MCO's Electronic Encounter Data for Accuracy and Completeness

MDH has an interagency governmental agreement with Hilltop to serve as the data warehouse for its encounters. Therefore, Hilltop completed Activity 3 of the EDV. Results of Activity 3 are copied here and the full report of Hilltop's encounter data validation can be found in **Appendix A**.

Activity 3 contains the following four required analysis steps:

1. Develop a data quality test plan based on data element validity requirements
2. Encounter data macro-analysis—verification of data integrity
3. Encounter data micro-analysis—generate and review analytic reports
4. Compare findings to state-identified benchmarks

Step 1. Develop a data quality test plan based on data element validity requirements

Hilltop incorporated information in Activities 1 and 2 to develop a data quality test plan. This plan accounts for the EDI (front-end) edits built into the state's data system so that it pursues data problems that the state may have inadvertently missed or allowed (CMS, 2019).

Hilltop first met with the Department in August 2018 to obtain pertinent information regarding the processes and procedures used to receive, evaluate, and report on the validity of MCO encounter data. Hilltop also interviewed Department staff to document state processes for accepting and validating the completeness and accuracy of encounter data; this information was used to investigate and determine the magnitude and types of missing encounter data and identify potential data quality and MCO submission issues. Information provided included, but was not limited to, the following:

- MCO submission of encounter data through a secure data transfer system (837), via an EDI system, to the Department; the transfer of those data to the Department's mainframe for processing and validation checks; generation of exception (error) reports (8ER and 835); and the uploading of the accepted data to MMIS2.
    - The 837 system contains patient claim information, and the 835 system contains the claim payment and/or explanation of benefits data.

    - The Department receives encounter data from the MCOs in a format that is HIPAA 837 compliant, via an EDI system. It then executes validations to generate exception (error) reports that are in HIPAA 835 compliant file format, as well as a summarized version known to the Department as the "8ER" report.
- Encounter data fields validated through the EDI process include recipient ID, sex, age, diagnosis codes, and procedure codes.
    - The EDI does not perform validation checks on the completeness or accuracy of payment fields submitted by the MCOs.
- After the data have been validated by the EDI, the Department processes incoming data from the MCOs within one to two business days.

Hilltop receives the EDI error report data (the 8ER report) and analyzes the number, types, and reasons for failed encounter submissions for each MCO. This report includes an analysis of the frequency of different error types and rejection categories. The 8ER error descriptions were used to develop a comprehensive overview of the validation process.

Successfully processed encounters receive additional code validation that identifies the criteria each encounter must meet to be accepted into MMIS2. In addition, Hilltop reviews the accepted encounter data for accuracy, completeness, and timeliness of MCO data submission.

Hilltop meets with the Department annually to discuss encounter data analysis, strategize efforts for improvement, and coordinate messaging on these topics. Major topics of discussion have included the completion of payment fields, the use of sub-indicators in payment fields, and provider enrollment edits. Hilltop also discussed with the Department the impact of the provider enrollment edits that took effect in January 2020. These edits were a response to the 2016 Medicaid managed care final rule, which required states to screen and enroll all managed care network providers who are not already enrolled in FFS.[2] Hilltop met with the Department regarding the increase in provider-related encounter rejections in May 2021 and October 2022 to coordinate a further investigation of the issue. Hilltop refined the categorization of provider-related rejection codes to distinguish the provider-related issues tied to enrollment from all other provider-related rejection codes.

The Department reestablished the technical Encounter Data Workgroup with the MCOs in 2018 to ensure the submission of data that are complete, accurate, of high quality, and in compliance with the new requirements for pay fields. The Workgroup also provides an opportunity to review the new structure in which CMS requires states to submit data, the Transformed Medicaid Statistical Information System (T-MSIS). States must comply with T-MSIS requirements and follow all guidance for managed care data submitted to CMS.[3]

Due to the COVID-19 public health emergency, the Workgroup paused its meetings and reconvened again in July 2021. During these meetings, the Workgroup addressed the issues of exception errors, encounter denials, provider enrollment, and provider enrollment edit exceptions ("free agent") usage and monitoring. The Department also provided updates on T-MSIS, procedure codes, very low birth weight capitation, and

[2] Medicaid and CHIP Managed Care Final Rule. 81 Fed. Reg. 27,890 (May 6, 2016) (to be codified at 42 CFR Parts 431, 433, 438, 440, 457 and 495).
[3] See August 10, 2018, letter to State Health Officials (SHO# 18-008) providing guidance to states regarding expectations for Medicaid and CHIP data and ongoing T-MSIS implementation at https://www.medicaid.gov/Federal-Policy-Guidance/downloads/SHO18008.pdf

encounter processing resolutions, including a solution for outpatient encounters that span more than one date of service, specifically through the overnight (midnight) hours.

To conduct the analysis, Hilltop used the Department's information regarding encounter data that failed the edit checks (rejected encounters), reasons for failure by the EDI, and comparisons with CY 2019 through CY 2021 rejection results. Hilltop also used these data and knowledge of the MCOs' relationships with providers to identify specific areas to investigate for missing services; data quality problems, such as the inability to process or retain certain fields; and problems MCOs might have compiling their encounter data and submitting the data files.

Step 2. Verify the integrity of the MCO's encounter data files

Hilltop reviewed encounter data for accuracy and completeness by conducting integrity checks of the data files and automating the analyses. The analysis includes verifying that the state's identifiers (IDs) are accurately incorporated into the MCO information system; applying other consistency checks, such as verifying critical fields containing non-missing data; and inspecting the data fields for quality and general validity. Hilltop evaluated the ratio of participants to total accepted encounters by MCO to assess whether the distribution was similar across MCOs. Selected fields not verified by the Department during the EDI process in Step 1 were assessed for completeness and accuracy. Hilltop investigated how completely and accurately the MCOs populated payment fields when submitting encounter data to the Department following the new mandate effective January 1, 2018.

Hilltop then assessed how many medical encounters with a paid amount of $0 were identified as sub-capitated payments or denied payments and compared the amount entered in the pay field with the amount listed in the FFS fee schedule. In addition, Hilltop analyzed the completion of the institutional paid amounts. Hilltop investigated the third-party liability (TPL) variable in MCO encounters to determine whether MCOs are reporting these encounters appropriately. Finally, Hilltop assessed the MCO provider numbers to ensure that encounters received and accepted only included MCOs currently active within the HealthChoice program. Encounters received and accepted with MCO provider numbers that were not active within the HealthChoice program were excluded from the analysis. Because Aetna Better Health of Maryland (ABH) joined the HealthChoice program in late 2017 and began reporting Maryland Medicaid data in CY 2018, its CY 2019 encounter data are considered benchmark data.

Step 3. Generate and review analytic reports

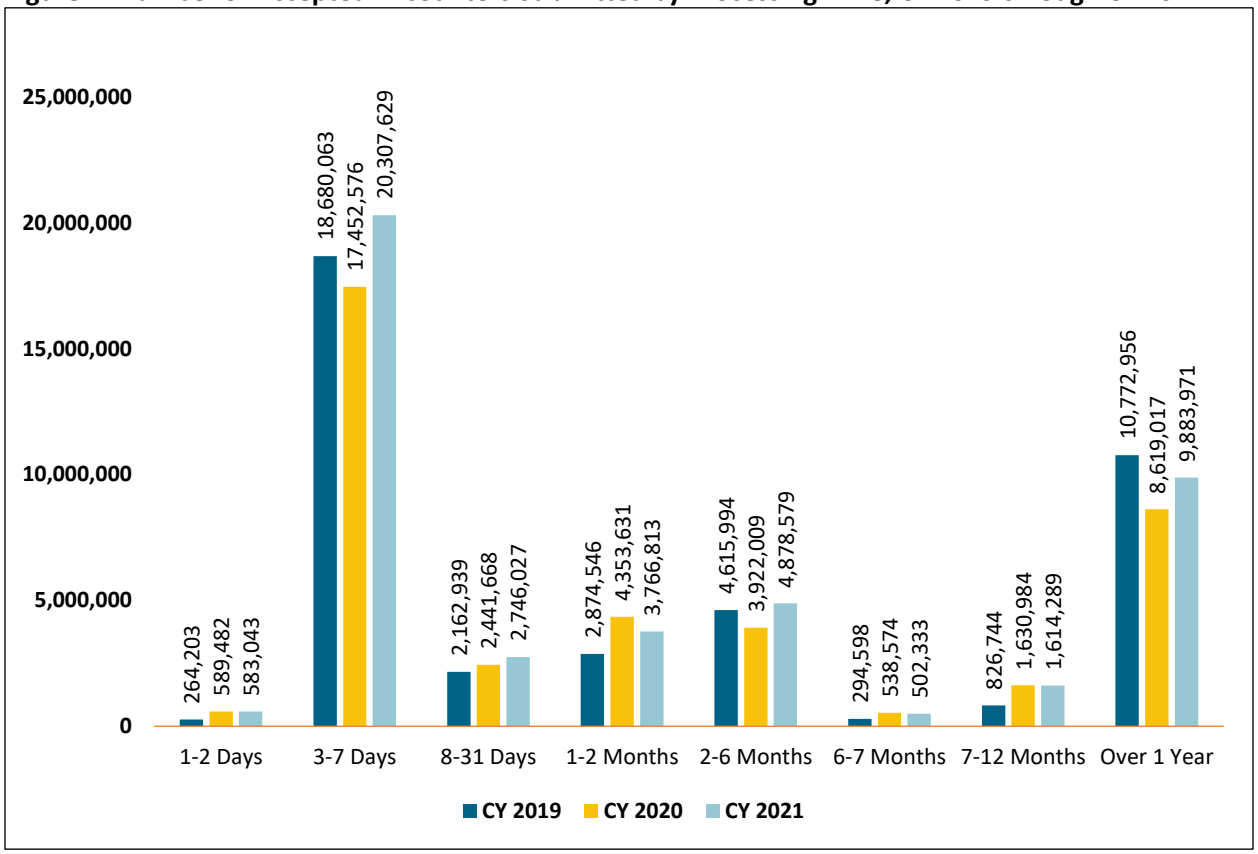
Hilltop analyzed and interpreted data based on the submitted fields, volume and consistency of the encounter data, and utilization rates. Hilltop specifically conducted analyses for other volume/consistency dimensions in four primary areas: time, provider type, service type, and appropriateness of diagnosis and procedure codes based on patient age and sex. The Department helped identify several specific analyses for each primary area related to policy interests; the results can inform the development of long-term strategies for monitoring and assessing the quality of encounter data.

Hilltop conducted an analysis of encounter data by time dimensions (i.e., service date and processing date) to show trends and evaluate data consistency. After establishing the length of time between service dates and processing dates, Hilltop compared these dimensions with state standards or benchmarks for data submission and processing. Hilltop also compared time dimension data between MCOs to determine whether they process data within similar time frames.

Hilltop analyzed encounter data by provider type to identify missing data. This analysis evaluates trends in provider services and seeks to determine any fluctuation in visits between CY 2019 and CY 2021. Provider analysis is focused on primary care visits, specifically the number of participants who had a visit with their PCPs within the calendar year. The service type analysis concentrated on three main service areas: inpatient hospitalizations, emergency department (ED) visits, and observation stays. The CY 2019 analysis provides baseline data and would typically allow the Department to identify any inconsistencies in utilization patterns for these types of services in CY 2020 and CY 2021. The pandemic emergency, however, resulted in declines in healthcare service utilization across the board, limiting the usefulness of the comparison.

Finally, Hilltop analyzed the age and sex appropriateness of diagnosis and procedure codes. Specifically, Hilltop conducted an age analysis of enrollees over 66 years, deliveries (births), the presence of a dementia diagnosis, and dental services. Hilltop conducted a sex analysis for delivery diagnosis codes. Participants older than 65 are ineligible for HealthChoice; therefore, any encounters for this population were noted, which could indicate an error in a participant's date of birth. Hilltop also conducted an analysis of dental encounters for enrollees aged 0 to 20 years whose dental services should have been paid through the FFS system.

Figure 1. Number of Accepted Encounters Submitted by Processing Time, CY 2019 through CY 2021



Provider Analysis

Evaluating encounters by provider type for fluctuations across MCOs contributes to the assessment of encounter data volume and consistency. The following provider analysis examines encounter data for PCPs and establishes a comparison rate of PCP visits in HealthChoice. For this analysis, Hilltop matched the Medicaid identification numbers the MCOs provided for their members to eligibility data in MMIS2. Only participants listed in an MCO's files and enrolled in MMIS2 were included in the analysis.

The CY 2021 PCP visit rate (defined as a visit to the assigned PCP, group practice, or partner PCP) ranged from 35.6% (CFCHP) to 74.8% (KPMAS), excluding ABH. Using the broadest definition of a PCP visit—that is, a visit to any PCP within any MCO's network—the PCP visit rate ranged from 64.4% (CFCHP) to 80.8% (ACC), excluding ABH. The PCP visit rate decreased across all measures between CY 2019 and CY 2021.

Service Type Analysis

For this analysis, a visit was defined as one encounter per person per provider per day. MCOs reported a consistent distribution of visits by service type for all years of the evaluation period. The percentages for both the total inpatient hospitalizations and observation stays combined were less than 1.0% of visits each year. ED visits, which were 3.0% of all visits in CY 2021, ranged from 2.0% of all visits (KPMAS) to 4.1% of all visits (JMS). As shown in the annual HealthChoice evaluation, the overall percentage of HealthChoice participants with an outpatient ED visit and inpatient admission decreased between CY 2016 and CY 2020 (The Hilltop Institute, 2022).

Analysis by Age and Sex

Hilltop conducted an analysis of encounter data submitted by MCOs to determine the effectiveness of encounter data edit checks between CY 2019 and CY 2021. The following areas were analyzed: 1) individuals over age 65 with encounters, 2) individuals with a service date before their date of birth, 3) age-appropriate and sex-appropriate diagnoses for delivery, 4) age-appropriate dementia diagnoses, and 5) children aged 0 to 20 years with dental encounters.

Because participants older than 65 are ineligible for HealthChoice, Hilltop searched for any encounters for those aged 66 or older. Between CY 2019 and CY 2020, the number of encounters submitted increased for participants who were aged 66 or older and participants who did not have a reported date of birth. The number then fell during CY 2021 to a number lower than in CY 2019. The number of individuals with a service date before their date of birth decreased between CY 2019 and CY 2021. The MCOs and the Department improved the quality of reporting encounter data for age-appropriate diagnoses in CY 2021.

The Maryland Healthy Smiles Dental Program (Healthy Smiles) provides dental coverage for children under the age of 21. The program is paid on an FFS basis, not through the MCO service package. Hilltop found very few dental encounters for children under the age of 21 covered by an MCO in CY 2019 and 2020, and none during CY 2021.

Hilltop analyzed the volume of participants who had a diagnosis for delivery (births) by age group between CY 2019 and CY 2021. Participants aged 0 to 12 and 51 or older are typically considered to be outside of the expected age range for delivery. This analysis only considers female participants with a delivery diagnosis. Across all MCOs, the number of female participants identified as delivering outside of the expected age ranges was 89 in CY 2019, 118 in CY 2020, and 122 in CY 2021. The data substantiate that, overall, the encounters submitted are age-appropriate for delivery. See Appendix J for delivery codes.

Hilltop also validated encounter data for sex-appropriate delivery diagnoses. A diagnosis for delivery should typically be present only on encounters for female participants. All MCOs had similar distribution, with nearly 100% of deliveries being reported for females. Delivery diagnoses for male participants in the encounter data are negligible, totaling only 52 reported deliveries across all MCOs in CY 2021, a slight increase from what was reported in CY 2019 (30) and CY 2020 (45).

The final analysis focused on age-appropriate diagnoses of dementia (see Appendix K for dementia codes) from CY 2019 to CY 2021. Although dementia is a disease generally associated with older age, onset can occur as early as 30 years of age. Thus, the prevalence of dementia diagnoses should increase with age after 30. Hilltop identified the number of participants under the age of 30 with an encounter with a dementia diagnosis. While each MCO had participants under the age of 30 with a dementia diagnosis, the total numbers were relatively small (324 participants were reported across all MCOs in CY 2021).

Step 4. Compare findings to state-identified standards

In both Steps 2 and 3, Hilltop compared the encounter data submitted by each MCO to benchmarks identified by MDH. Hilltop performed the analyses by MCO and calendar years to benchmark each MCO against its own performance over time as well as against other MCOs. Hilltop also identified and compared outlier data with overall trends noted among the MCOs.

Analysis of Medical Records to Confirm Encounter Data Accuracy

Review of enrollees' medical records offers a method to examine the completeness and accuracy of encounter data. Using the encounter/claims data file prepared by MDH's vendor (Hilltop), Qlarant identified all enrollees with an inpatient, outpatient, and office visit service claim. The sample size was selected to ensure a 90% confidence interval with a +/-5% error rate for sampling. Oversampling was used in order to ensure adequate numbers of medical records were received to meet the required sample size. Hospital inpatient and outpatient encounter types were oversampled by 300%, while office visit encounter types were oversampled by 400% for each MCO.

Records were requested directly from the billing providers. Qlarant mailed each sampled provider a letter with the specific record request, which included patient name, medical assistance identification number, date of birth, date(s) of service, and treatment setting. Targeted follow-up was conducted to providers who had not responded to the initial request, including phone calls and fax requests. Providers were asked to securely submit medical record information to Qlarant with the following instructions:

- Identify documentation submitted for each patient using: patient's first and last name, medical assistance identification number, date of birth, age, gender, and provider name.
- Include all relevant medical record documentation to ensure receipt of adequate information for validating service codes (a list of recommended documentation was provided for reference).

Table 3. CY 2019 through CY 2021 EDV Minimum Sample Required for Review by Encounter Type

Encounter Type	CY 2019	CY 2020	CY 2021
	Sample Size		
Inpatient	62 (2%)	64 (3%)	55 (2%)
Outpatient	536 (22%)	484 (20%)	507 (21%)
Office Visit	1,854 (76%)	1,906 (78%)	1,892 (77%)
Total	**2,452**	**2,454**	**2,454**

Note: Values reported are rounded to the nearest percentage for reporting only.

Compared to CY 2019 (2,452), the minimum sample required was higher in CY 2020 and CY 2021 (2,454). The majority of encounters within the required sample size for CY 2021 were office visits (77%), followed by outpatient encounters (21%), and inpatient encounters making up the smallest portion (2%).

Table 4. CY 2021 MCO EDV Medical Record Review Response Rates by Encounter Type

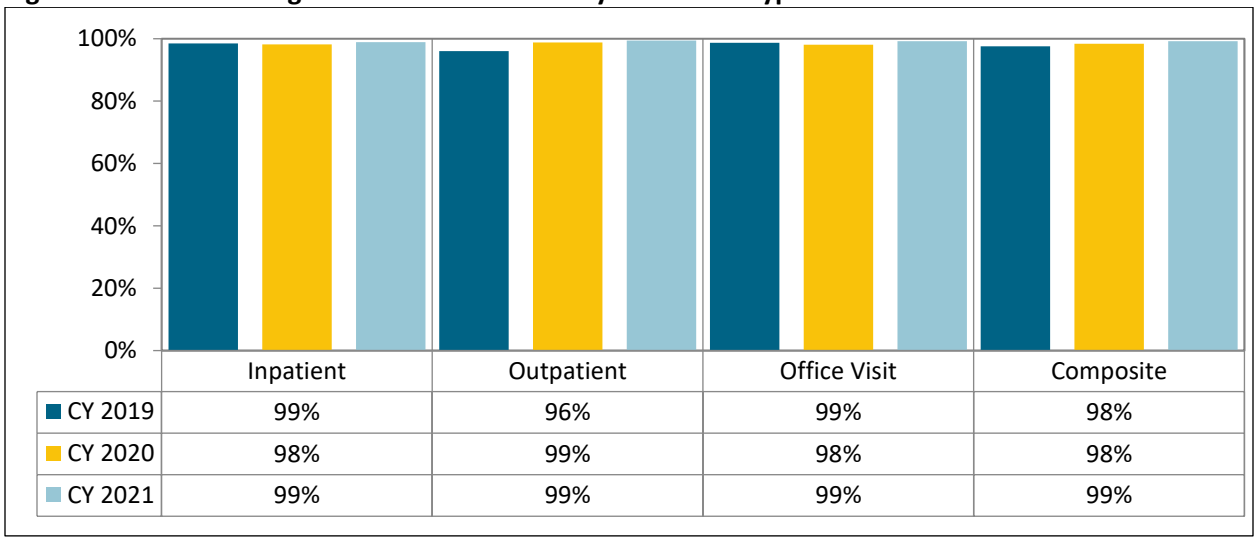
MCO	Inpatient Records			Outpatient Records			Office Visit Records		
	# Reviewed	Minimum Reviews Required	Sample Size Achieved?	# Reviewed	Minimum Reviews Required	Sample Size Achieved?	# Reviewed	Minimum Reviews Required	Sample Size Achieved?
ABH	7	7	Yes	53	53	Yes	223	213	Yes
ACC	5	5	Yes	57	57	Yes	212	211	Yes
CFCHP	7	7	Yes	59	58	Yes	207	207	Yes
JMS	7	7	Yes	79	77	Yes	191	187	Yes
KPMAS	6	5	Yes	19	17	Yes	252	252	Yes
MPC	6	6	Yes	69	68	Yes	202	198	Yes
MSFC	6	6	Yes	59	58	Yes	209	209	Yes
PPMCO	6	6	Yes	62	62	Yes	205	205	Yes
UHC	6	6	Yes	57	57	Yes	214	210	Yes
Total	**56**	**55**	Yes	**514**	**507**	Yes	**1,915**	**1,892**	Yes

All MCOs submitted the sufficient number of medical records required to meet the minimum samples for each setting type of the encounter data review.

Medical records received were verified against the sample listing and enrollee demographics information from the data file to ensure consistency between submitted encounter data and corresponding medical records. Documentation was noted in the database as to whether the diagnosis, procedure, and if applicable, revenue codes were substantiated by the medical record. For inpatient encounters, the reviewers also verified the principal diagnosis code against the primary sequenced diagnosis. All diagnosis codes, procedure codes, and revenue codes included in the data were validated per record for the EDV. Qlarant defines findings of consistency in terms of match, no match, and invalid as shown below:

- Match - Determinations were made as a "match" when documentation was found in the record.
- No Match – Determinations were made as "no match" when there was a lack of documentation in the record, coding error(s), or upcoding.
- Invalid – Determinations were made as "invalid" when a medical record was not legible or could not be verified against the encounter data by patient name, account number, gender, date of birth, or date(s) of service. When this situation occurred, the reviewer ended the review process.For CY 2021, Qlarant received 2,485 medical records collectively from all nine MCOs, slightly more than the 2,454 minimum reviews required. Analysis of the data was organized by review elements including diagnosis, procedure, and revenue codes (applicable only for inpatient and outpatient).

Figure 2. CY 2019 through CY 2021 EDV Results by Encounter Type



	Inpatient	Outpatient	Office Visit	Composite
CY 2019	99%	96%	99%	98%
CY 2020	98%	99%	98%	98%
CY 2021	99%	99%	99%	99%

The composite match rate across all encounter types showed improvement from CY 2020 (98%) to CY 2021 (99%) by one percentage point. EDV results maintained consistency for outpatient encounters from CY 2020 to CY 2021 at 99%. There was a one percentage point improvement in results for office visit and inpatient encounter types from CY 2020 to CY 2021.

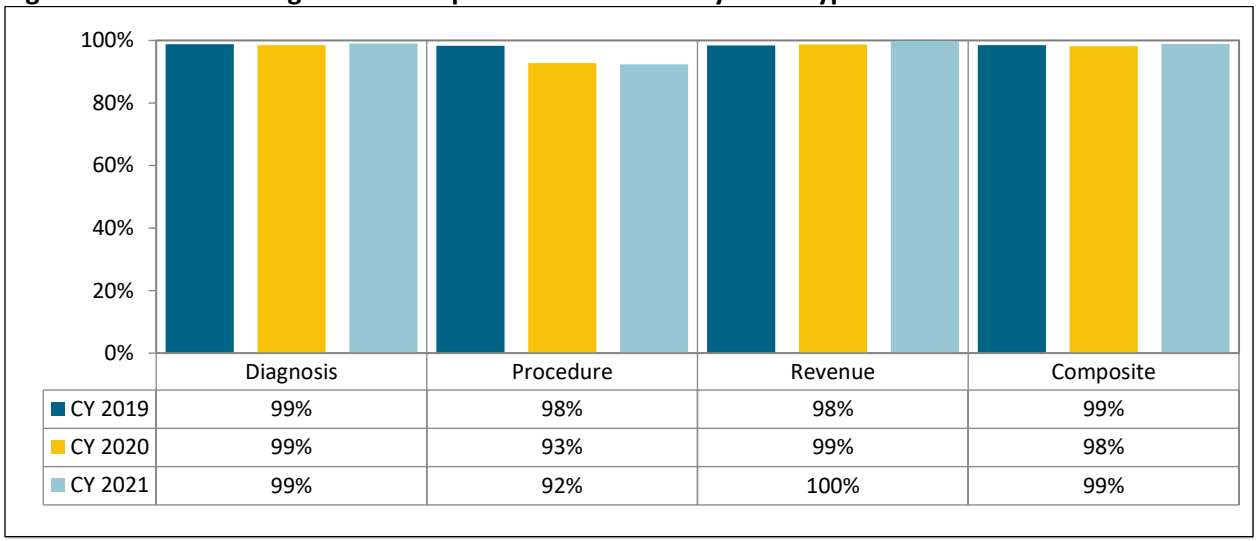
Table 5. CY 2019 through CY 2021 EDV Results by Encounter Type

Encounter Type	Records Reviewed			Total Possible Elements*			Total Matched Elements			Percentage of Matched Elements		
	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021
Inpatient	63	72	56	1,434	1,572	1,186	1,413	1,543	1,173	99%	98%	99%
Outpatient	538	492	514	7,288	6,149	6,812	7,000	6,078	6,774	96%	99%	99%
Office Visit	1,877	1,934	1,915	8,833	8,860	9,124	8,718	8,692	9,056	99%	98%	99%
Total	**2,478**	**2,498**	**2,485**	**17,555**	**16,581**	**17,122**	**17,131**	**16,313**	**17,003**	**98%**	**98%**	**99%**

*Possible elements include diagnosis, procedure, and revenue codes.

Inpatient Encounters

Figure 3. CY 2019 through CY 2021 Inpatient EDV Results by Code Type



The CY 2021 composite inpatient encounter match rate (99%) increased one percentage point from CY 2020 (98%). Diagnosis codes have sustained at 99% from CY 2019 to CY 2021, while procedure codes decreased by one percent (92%) and revenue codes improved by one percentage point (100%).

Table 6. CY 2019 through CY 2021 EDV Inpatient Encounter Type Results by Code

Inpatient Encounter Type	Diagnosis Codes			Procedure Codes			Revenue Codes			Total Codes		
	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021
Match	509	593	473	115	115	85	789	835	615	1,413	1,543	1,173
No Match	6	9	5	2	9	7	13	11	1	21	29	13
Total	515	602	478	117	124	92	802	846	616	1,434	1,572	1,186
Match Percent	**99%**	**99%**	**99%**	**98%**	**93%**	**92%**	**98%**	**99%**	**100%**	**99%**	**98%**	**99%**

Note: Values reported are rounded to the nearest percentage for reporting only.

The diagnosis code match rate results has maintained at 99% from CY 2019 to CY 2021.

The CY 2021 procedure code match rate (92%) decreased six percentage points from CY 2019 (98%) and decreased one percentage point from CY 2020 (93%).

The CY 2021 revenue code match rate (100%) improved by one percentage point from CY 2020 (99%) and by two percentage points in comparison to CY 2019 (98%).

Table 7. MCO Inpatient Results by Code Type

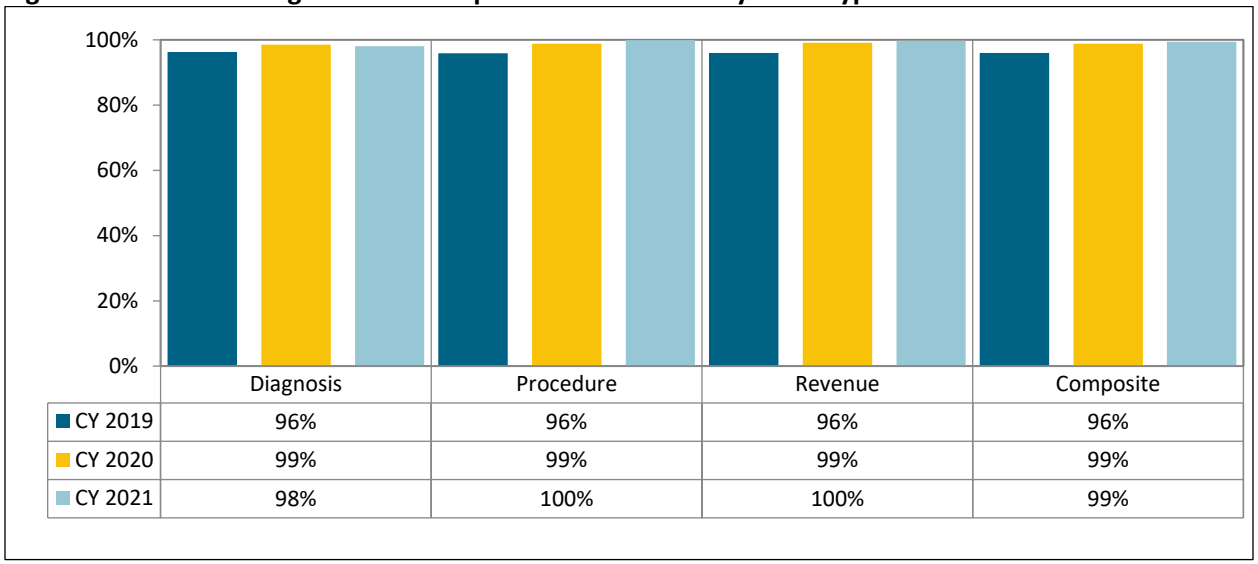
MCO	# of Reviews	Diagnosis Codes			Procedures Codes			Revenue Codes			Total Codes		
		Match	Total	%	Match	Total	%	Match	Total	%	Match	Total	%
ABH	7	50	50	100%	14	14	100%	76	76	100%	140	140	100%
ACC	5	49	49	100%	14	14	100%	77	77	100%	140	140	100%
CFCHP	7	46	46	100%	8	8	100%	70	70	100%	124	124	100%
JMS	7	69	70	99%	15	22	68%	88	88	100%	172	180	96%
KPMAS	6	36	36	100%	10	10	100%	54	54	100%	100	100	100%
MPC	6	66	66	100%	7	7	100%	59	59	100%	132	132	100%
MSFC	6	59	59	100%	3	3	100%	71	71	100%	133	133	100%
PPMCO	6	62	65	95%	6	6	100%	64	64	100%	132	135	98%
UHC	6	36	37	97%	8	8	100%	56	57	98%	100	102	98%

Note: Values reported are rounded to the nearest percentage for reporting only.

All MCOs achieved a match rate of 96% or greater for inpatient encounters across all code types. JMS' match rate for procedure codes (68%) was significantly lower than all other health plans.

Outpatient Encounters

Figure 4. CY 2019 through CY 2021 Outpatient EDV Results by Code Type



	Diagnosis	Procedure	Revenue	Composite
CY 2019	96%	96%	96%	96%
CY 2020	99%	99%	99%	99%
CY 2021	98%	100%	100%	99%

The CY 2021 total match rate for outpatient procedure codes (100%) and revenue codes (100%) improved by one percentage point from CY 2019 (99%). The CY 2021 total match rate for outpatient diagnosis codes (98%) decreased by one percentage point from CY 2020 (99%). The total composite match rate for outpatient encounters, across all code types, maintained from CY 2020 to CY 2021 at 99% and increased by three percentage points from CY 2019 (96%).

Table 8. CY 2019 through CY 2021 EDV Outpatient Encounter Type Results by Code

Outpatient Encounter Type	Diagnosis Codes			Procedure Codes			Revenue Codes			Total Codes		
	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021
Match	1,782	1,628	1,902	2,447	2,525	2,848	2,771	1,925	2,024	7,000	6,078	6,774
No Match	68	24	29	104	30	3	116	17	6	288	71	38
Total	1,850	1652	1,931	2,551	2,555	2,851	2,887	1,942	2,030	7,288	6,149	6,812
Match Percent	**96%**	**99%**	**98%**	**96%**	**99%**	**100%**	**96%**	**99%**	**100%**	**96%**	**99%**	**99%**

Note: Values reported are rounded to the nearest percentage for reporting only.

The CY 2021 outpatient diagnosis code match rate (98%) decreased by one percentage point from CY 2020 (99%) and increased by two percentage points from CY 2019 (96%).

The CY 2021 outpatient procedure code match rate (100%) increased by four percentage points from CY 2019 (96%) and one percentage point from CY 2020 (99%).

The CY 2021 outpatient revenue code match rate (100%) increased by four percentage points from CY 2019 (96%) and one percentage point from CY 2020 (99%).

Table 9. MCO Outpatient Results by Code Type

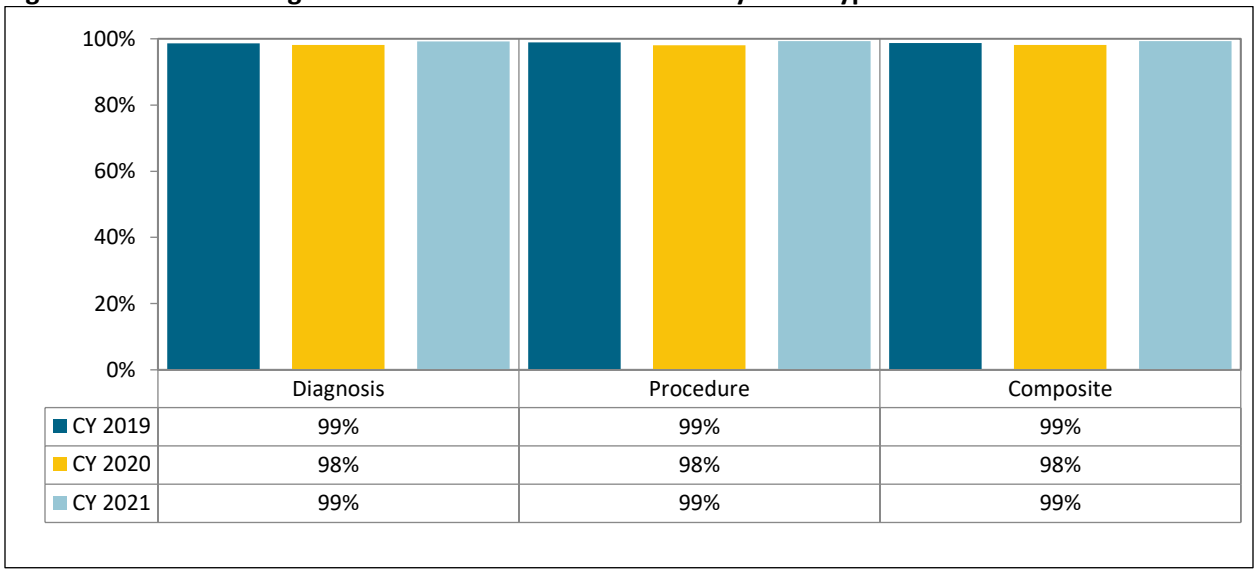
MCO	# of Reviews	Diagnosis Codes			Procedure Codes			Revenue Codes			Total Codes		
		Match	Total	%	Match	Total	%	Match	Total	%	Match	Total	%
ABH	53	187	198	94%	300	300	100%	216	216	100%	703	714	98%
ACC	57	198	201	99%	363	365	99%	272	273	100%	833	839	99%
CFCHP	59	269	271	99%	429	429	100%	263	263	100%	961	963	100%
JMS	79	286	288	99%	358	358	100%	264	268	99%	908	914	99%
KPMAS	19	64	64	100%	149	149	100%	109	109	100%	322	322	100%
MPC	69	253	257	98%	316	317	100%	248	249	100%	817	823	99%
MSFC	59	218	218	100%	307	307	100%	227	227	100%	752	752	100%
PPMCO	62	200	205	98%	290	290	100%	196	196	100%	686	691	99%
UHC	57	227	229	99%	336	336	100%	229	229	100%	792	794	100%

Note: Values reported are rounded to the nearest percentage for reporting only.

The MCOs' total match rate across all code types ranged from 98% (ABH) to 100% (CFCHP, KPMAS, MSFC, and UHC).

Office Visit Encounters

Figure 5. CY 2019 through CY 2021 Office Visit EDV Results by Code Type



Overall, the CY 2021 office visit composite match rate (99%) increased by one percentage from CY 2020 (98%) and consistent is to CY 2019 (99%).

Table 10. CY 2019 through CY 2021 EDV Office Visit Encounter Type Results by Code*

Office Visit Encounter Type	Diagnosis Codes			Procedure Codes			Total		
	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021
Match	5,245	5,403	5,592	3,473	3,289	3,464	8,718	8,692	9,056
No Match	76	102	43	39	66	25	115	168	68
Total Elements	5,321	5,505	5,635	3,512	3,355	3,489	8,833	8,860	9,124
Match Percent	**99%**	**98%**	**99%**	**99%**	**98%**	**99%**	**99%**	**98%**	**99%**

*Revenue codes are not applicable for office visit encounters.

Note: Values reported are rounded to the nearest percentage for reporting only.

The CY 2021 diagnosis code match rate (99%) and procedure code match rate (99%) increased by one percentage point from CY 2020 (98%) and is consistent to CY 2019 (99%).

Table 11. MCO Office Visit Results by Code Type*

MCO	# of Reviews	Diagnosis Codes			Procedure Codes			Total Codes		
		Match	Total	%	Match	Total	%	Match	Total	%
ABH	223	704	711	99%	426	428	100%	1,130	1,139	99%
ACC	212	536	548	98%	394	397	99%	930	945	98%
CFCHP	207	627	632	99%	415	418	99%	1,042	1,050	99%
JMS	191	606	610	99%	325	326	100%	931	936	99%
KPMAS	252	575	576	100%	249	251	99%	824	827	100%
MPC	202	584	584	100%	417	418	100%	1,001	1,002	100%
MSFC	209	690	692	100%	361	362	100%	1,051	1,054	100%
PPMCO	205	628	634	99%	394	398	99%	1,022	1,032	99%
UHC	214	642	648	99%	483	491	98%	1,125	1,139	99%

*Revenue codes are not applicable for office visit encounters.

Note: Values reported are rounded to the nearest percentage for reporting only.

For office visit encounters, all nine MCOs scored well above the standard of 90% in diagnosis codes, procedure codes, as well as the total codes match rate.

All Encounters "No Match" Summary

Table 12. CY 2019 through CY 2021 Reasons for "No Match" by Encounter Type

Encounter Type	CY 2019							CY 2020							CY 2021						
	Coding Error		Lack of Documentation		Upcoding		Total Elements	Coding Error		Lack of Documentation		Upcoding		Total Elements	Coding Error		Lack of Documentation		Upcoding		Total Elements
	#	%	#	%	#	%	#	#	%	#	%	#	%	#	#	%	#	%	#	%	#
Diagnosis																					
Inpatient	1	17%	5	83%	N/A	N/A	6	0	0%	9	100%	0	0%	9	1	20%	4	80%	0	0%	5
Outpatient	4	6%	64	94%	N/A	N/A	68	2	8%	22	92%	0	0%	24	2	7%	27	93%	0	0%	29
Office Visit	26	34%	50	66%	N/A	N/A	76	27	26%	75	72%	0	0%	102	15	35%	27	63%	1	2%	43
Procedure																					
Inpatient	1	50%	1	50%	N/A	N/A	2	4	44%	5	56%	0	0%	9	4	57%	3	43%	0	0%	7
Outpatient	1	1%	103	99%	N/A	N/A	104	1	3%	29	97%	0	0%	30	0	0%	3	100%	0	0%	3
Office Visit	8	21%	31	79%	N/A	N/A	39	9	14%	57	86%	0	0%	66	11	44%	14	56%	0	0%	25
Revenue																					
Inpatient	0	0%	13	100%	N/A	N/A	13	0	0%	11	100%	0	0%	11	1	100%	0	0%	0	0%	2
Outpatient	4	3%	112	97%	N/A	N/A	116	0	0%	17	100%	0	0%	17	0	0%	6	100%	0	0%	6

Not Applicable = (N/A)

Lack of documentation accounted for the majority of all diagnosis, procedure, and revenue code mismatches in CY 2021. This is similar to CY 2020 and CY 2019.

In CY 2021, mismatched diagnosis codes due to lack of documentation presented as 80% of inpatient encounters, 93% of outpatient encounters, and 63% of office visit encounters. Coding errors accounted for 20% of inpatient encounters, 7% of outpatient encounters, and 35% of office visit encounters.

Procedure codes in CY 2021 mismatched due to lack of documentation represented 43% of inpatient encounters, 100% of outpatient encounters, and 56% of office visit encounters. Coding errors accounted for 57% of inpatient encounters and 44% of office visit encounters. No outpatient encounter procedure codes were mismatched due to coding errors.

In CY 2021, coding errors accounted for 100% of mismatched revenue codes for inpatient encounters. Lack of documentation accounted for 100% of mismatched revenue codes for outpatient encounters. No outpatient encounter revenue codes were mismatched due to coding errors and no inpatient encounter revenue codes were mismatched due to lack of documentation.

MCO Encounter Data Validation Results

For CY 2021, all HealthChoice MCOs successfully achieved match rates that equaled or scored above the standard of 90% in all areas of review.

Table 13. CY 2019 through CY 2021 MCO and HealthChoice Results by Encounter Type

MCO	Inpatient			Outpatient			Office Visits		
	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021
ABH	99%	100%	100%	96%	99%	98%	99%	98%	99%
ACC	95%	99%	100%	98%	97%	99%	97%	97%	98%
CFCHP	95%	99%	100%	99%	99%	100%	99%	98%	99%
JMS	100%	92%	96%	97%	100%	99%	100%	100%	99%
KPMAS	100%	99%	100%	99%	100%	100%	99%	99%	100%
MPC	100%	100%	100%	97%	100%	99%	100%	97%	100%
MSFC	99%	99%	100%	90%	100%	100%	99%	100%	100%
PPMCO	99%	99%	98%	96%	99%	99%	98%	99%	99%
UHC	100%	100%	98%	95%	98%	100%	98%	97%	99%
HealthChoice	99%	98%	99%	96%	99%	99%	99%	98%	99%

Note: Values reported are rounded to the nearest percentage for reporting only.

Aetna Better Health of Maryland

- For CY 2021, ABH achieved match rates above the standard of 90% recommended by Qlarant in all areas of review:
  - 100% for all inpatient codes reviewed; maintained from CY 2020 and increased by one percentage point from CY 2019 (99%).
  - 98% for all outpatient codes reviewed; a one percentage point decrease from CY 2020 (99%) and a two percentage point increase from CY 2019 (96%).
  - 99% for all office visit codes reviewed; a one percentage point increase from CY 2020 (98%) and consistent with the CY 2019 rate (99%).

AMERIGROUP Community Care

- For CY 2021, ACC achieved match rates above the standard 90% recommended by Qlarant in all areas of review:
  - 100% for all inpatient codes reviewed; a one percentage point increase from CY 2020 (99%) and a five percentage point increase from CY 2019 (95%).

- 99% for all outpatient codes reviewed; a two percentage point increase from CY 2020 (97%) and a one percentage point increase from CY 2019 (98%).
- 98% for all office visit codes reviewed; a one percentage point increase from CY 2019 (97%) and CY 2020 (97%).

CareFirst BlueCross BlueShield Community Health Plan

- For CY 2021, CFCHP achieved match rates above the standard 90% recommended by Qlarant in all areas of review:
  - 100% for all inpatient codes reviewed; a one percentage point increase from CY 2020 (99%) and a five percentage point increase from CY 2019.
  - 100% for all outpatient codes reviewed; a one percentage point increase from CY 2019 (99%) and CY 2020 (99%).
  - 99% for all office visit codes reviewed; a one percentage point increase from CY 2020 (98%) and consistent with the CY 2019 rate (99%).

Jai Medical Systems, Inc.

- For CY 2021, JMS achieved match rates above the standard 90% recommended by Qlarant in all areas of review:
  - 96% for all inpatient codes reviewed; a four percentage point increase from CY 2020 (92%) and a decrease of four percentage points from CY 2019 (100%).
  - 99% for all outpatient codes reviewed; a one percentage point decrease from CY 2020 (100%) and a two percentage point increase from CY 2019 (97%).
  - 99% for all office visit codes reviewed; a one percentage point decrease from CY 2020 (100%) and CY 2019 (100%).

Kaiser Permanente of the Mid-Atlantic States, Inc.:

- For CY 2021, KPMAS achieved match rates above the standard 90% recommended by Qlarant for inpatient encounters, outpatient encounters, and office visit encounters:
  - 100% for all inpatient codes reviewed; an improvement of one percentage point from CY 2020 (99%).
  - 100% for all outpatient codes reviewed; maintained from CY 2020 (100%) and a one percentage point increase from CY 2019 (99%).
  - 100% for all office visit codes reviewed; a one percentage point increase from CY 2019 (99%) and CY 2020 (99%).

Maryland Physicians Care:

- For CY 2021, MPC achieved match rates above the standard 90% recommended by Qlarant in all areas of review:
  - 100% for all inpatient codes reviewed; maintained from CY 2019 (100%) and CY 2020 (100%).
  - 99% for all outpatient codes reviewed; a one percentage point decrease from CY 2020 (100%) and a two percentage point increase from CY 2019.
  - 100% for all office visit codes reviewed; a three percentage point increase from CY 2020 (97%) and consistent with the CY 2019 rate (100%).

MedStar Family Choice, Inc.:

- For CY 2021, MSFC achieved match rates above the standard 90% recommended by Qlarant in all areas of review:
  - 100% for all inpatient codes reviewed; a one percentage point increase from CY 2019 (99%) and CY 2020 (99%).
  - 100% for all outpatient codes reviewed; maintained from CY 2020 (100%) and a significant improvement of ten percentage points from CY 2019 (90%).
  - 100% for all office visit codes reviewed; maintained from CY 2020 (100%) and a one percentage point increase from CY 2019 (99%).

Priority Partners:

- For CY 2021, PPMCO achieved match rates above the standard 90% recommended by Qlarant in all areas of review:
  - 98% for all inpatient codes reviewed; a one percentage point decrease from CY 2019 (99%) and CY 2020 (99%).
  - 99% for all outpatient codes reviewed; maintained from CY 2020 (99%) and a three percentage point increase from CY 2019 (96%).
  - 99% for all office visit codes reviewed; maintained from CY 2020 (99%) and a one percentage point increase from CY 2019 (98%).

UnitedHealthcare Community Plan:

- For CY 2021, UHC achieved match rates above the standard 90% recommended by Qlarant in all areas of review:
  - 98% for all inpatient codes reviewed; a two percentage point decrease from CY 2019 (100%) and CY 2020 (100%).
  - 100% for all outpatient codes reviewed; a two percentage point increase from CY 2020 (98%) and a five percentage point increase from CY 2019 (95%).
  - 99% for all office visit codes reviewed; a two percentage point increase from CY 2020 (97%) and a one percentage point increase from CY 2019 (98%).

Corrective Action Plans

For CY 2021 EDV, all of the HealthChoice MCOs achieved match rates that are equal to or above the 90% standard. There are no corrective action plans required as a result of the CY 2021 review.

Conclusion

HealthChoice is a mature managed care program and, overall, analysis of the electronic encounter data submitted by MCOs indicates the data is valid (complete and accurate). Qlarant and Hilltop completed an EDV study for MDH based on an assessment of encounters paid during CY 2021. Qlarant conducted a medical record review on a sample of inpatient, outpatient, and office visit encounters (2,485) to confirm the accuracy of codes. Overall, MCOs achieved a match rate of 99%, meaning 99% of claims submitted were supported by medical record documentation. MCOs achieved a high match rate for each encounter setting: 99% for inpatient, 99% for outpatient, and 99% for office visit.

MCO Strengths

- All MCOs appear to have well-managed systems and processes.
- All MCOs are capturing appropriate data elements for claims processing, including elements that identify the enrollee and the provider of service.
- All MCOs appear to have information systems and processes capable of producing accurate and complete encounter data.
- The HealthChoice MCO average rate for processing clean claims in 30 days was 95%, with MCO-specific rates ranging from 90% to 100%.
- The composite match rate across all encounter types showed improvement from CY 2020 (98%) to CY 2021 (99%) by one percentage point. The composite match rate maintained at 98% from CY 2019 to CY 2020.
- All MCOs met the Qlarant-recommended match rate of 90% for all encounter types reviewed.
- All MCOs achieved a match rate of 96% or greater for all encounter types reviewed.
- ACC, CFCHP, and MSFC match rates across all encounter types consistently improved or maintained from CY 2019 to CY 2021.
- ABH, ACC, CFCHP, JMS, MPC, and MSFC's inpatient encounter match rates consistently improved or maintained for three successive years.
- ACC, CFCHP, KPMAS, MSFC, PPMCO, and UHC's outpatient encounter match rates consistently improved or maintained for three successive years.
- All MCOs office visit encounter match rates scored above 97% for three successive years.

MCO and State Recommendations

- MDH should continue to monitor and work with the MCOs to resolve the provider enrollment data problems (The Hilltop Institute, 2022).
- MDH should work with the MCOs to instill best practices to improve their numbers of rejected encounters (The Hilltop Institute, 2022).
- MDH should consider evaluating each MCO's sub-capitation arrangements with other organizations and comparing those arrangements with the MCO's use of the sub-capitation indicator. A mismatch between these could indicate a problem with the MCO's use of the sub-capitation indicator (The Hilltop Institute, 2022).
- MDH should continue to work with the MCOs to ensure appropriate utilization and improvement in the accuracy of the payment field on accepted encounters (The Hilltop Institute, 2022).
- MDH should continue to encourage MCOs to work with their providers to ensure that they are enrolled on the date of service and that they know how to check their current status. MDH should also monitor the MCOs' TPL-reported amounts (The Hilltop Institute, 2022).
- MDH should continue to monitor monthly submissions to evaluate consistency and ensure that the MCOs submit data in a timely manner. MCOs that submit encounters more than eight months after the date of service—the maximum time allotted for an encounter to be submitted to MDH—should be flagged for improvement (The Hilltop Institute, 2022).
- MDH should continue to monitor PCP visits by MCOs in future encounter data validations (The Hilltop Institute, 2022).
- MDH should continue to review these data and compare trends in future annual encounter data validations to ensure consistency (The Hilltop Institute, 2022).
- MDH should continue to review and audit the participant-level, MCO-specific reports that Hilltop generated for delivery, dementia, individuals over age 65, pediatric dental, and missing age outlier data. MCOs that submit the encounter outliers should be notified, demographic information should be updated, and adjustments should be made, as needed (The Hilltop Institute, 2022).

Appendix A

Validation of Encounter Data CY 2021

Completed by the Hilltop Institute, University of Maryland Baltimore County (Hilltop)

The Hilltop Institute
UMBC

report

EQR Protocol 5, Activity 3: Validation of Encounter Data, CY 2019 to CY 2021

December 9, 2022

Suggested Citation: The Hilltop Institute. (2022, December 9). *EQR protocol 5, activity 3: Validation of encounter data, CY 2019 to CY 2021.* Baltimore, MD: UMBC.

EQR Protocol 5, Activity 3: Validation of Encounter Data, CY 2019 to CY 2021

Table of Contents

Appendices

List of Tables and Figures

Tables

Figures

EQR Protocol 5, Activity 3: Validation of Encounter Data, CY 2019 to CY 2021

Introduction

HealthChoice—Maryland's statewide mandatory Medicaid and Children's Health Insurance Program (CHIP) managed care system—was implemented in 1997 under the Social Security Act's §1115 waiver authority and provides participants with access to a wide range of health care services arranged or provided by managed care organizations (MCOs). In calendar year (CY) 2021, nearly 90% of the state's Medicaid and Maryland Children's Health Program (MCHP) populations were enrolled in HealthChoice. HealthChoice participants are given the opportunity to select an MCO and primary care provider (PCP) from their MCO's network to oversee their medical care. Participants who do not select an MCO or PCP are automatically assigned to one. HealthChoice participants receive the same comprehensive benefits as those available to Maryland Medicaid, including MCHP participants, through the fee-for-service (FFS) system.

In addition to providing a wide range of services, one of the goals of the HealthChoice program is to improve the access to and quality of health care services delivered to participants by the MCOs. The Maryland Department of Health (Department) contracted with The Hilltop Institute at the University of Maryland, Baltimore County (UMBC) to analyze and evaluate the validity of encounter data submitted by the HealthChoice MCOs. Hilltop has conducted the annual encounter data evaluations and assisted the Department with improving the quality and integrity of encounter data submissions since the inception of the HealthChoice program.

In 2012, the Centers for Medicare & Medicaid Services (CMS) issued a set of external quality review (EQR) protocols to states receiving encounter data from contracted MCOs. The EQR process includes eight protocols—three mandatory and five optional—used to analyze and evaluate state encounter data for quality, timeliness, and access to health care services (CMS, 2012). In April 2016, CMS released its final rule on managed care,[1] which included a new regulation that states must require contracted MCOs to submit encounter data that comply with specified standards, formatting, and criteria for accuracy and completeness.[2] This final rule required substantive changes to the EQR protocols[3] and provided an opportunity to revise the protocol design. In October 2019, CMS released updated protocols for the EQR to help states and external quality review organizations (EQROs) improve reporting in EQR technical reports. Hilltop evaluated the new managed care final rule released in November 2020 and found that it did not include substantive changes to the EQR regulations.[4]

[1] Medicaid and CHIP Managed Care Final Rule. 81 Fed. Reg. 27,498 (May 6, 2016) (to be codified at 42 CFR Parts 431, 433, 438, 440, 457 and 495).
[2] 42 CFR § 438.818.
[3] 42 CFR § 438.350–438.370; 457.1250.
[4] Medicaid and CHIP Managed Care Final Rule. 85 Fed. Reg. 72,574 (November 13, 2020) (to be codified at 42 CFR Parts 438 and 457).

In 2018, the Department asked Hilltop to work with Qlarant, Maryland's EQRO, to evaluate all electronic encounter data submitted by the MCOs on an annual basis as part of the encounter data validation activity. Hilltop serves as the Department's data warehouse and currently stores and evaluates all Maryland Medicaid encounter data, providing data-driven policy consultation, research, and analytics. This specific analysis—Activity 3 of the CMS EQR Protocol 5 for encounter data validation—is the core function used to determine the validity of encounter data and ensure the data are complete, accurate, and of high quality. The Department can use the results of the evaluation to monitor and collaborate with the MCOs to improve the quality and usefulness of their data submissions.

Hilltop evaluated all electronic encounter data submitted by the MCOs for CY 2019 through CY 2021. The two primary validation areas are 1) the Department's encounter data processing before acceptance of data and 2) the accepted encounter data review. Documentation of the data processing involves an overview of the electronic data interchange (EDI) and the Medicaid Management Information System (MMIS2), as well as the validation process for submitted encounters before acceptance. For this analysis, Hilltop obtained information from the Department about encounter data that failed the edit checks (rejected records) and the reasons for failure. Hilltop conducted a review of accepted encounters and analyzed the volume and consistency of encounters submitted over time, utilization rates, data accuracy and completeness of identified fields, appropriateness of diagnosis and procedure codes, and the timeliness of MCOs' submissions to the Department.

Methodology

The following methodology was designed to address the five required activities of CMS EQR Protocol 5:

- Activity 1: Review state requirements
- Activity 2: Review MCO's capability
- Activity 3: Analyze electronic encounter data
- Activity 4: Review of medical records
- Activity 5: Submission of findings

Information from Activities 1 and 2 is necessary to evaluate Activity 3. The primary focus of Activity 3 is to analyze the electronic encounter data submitted by the MCOs, and this analysis comprises a substantive portion of this report. Activity 1 is necessary to develop the plan for encounter analysis, given that its directive is to ensure the EQRO has a complete understanding of state requirements for collecting and submitting encounter data (CMS, 2019).

The Department required the MCOs to submit all CY 2021 encounters by June 19, 2022. In July 2022, Hilltop reviewed the CMS Protocol 5 requirements and encounter data validation activities and found that no changes were required to the procedures for data validation. Hilltop also participated in Encounter Data Workgroup meetings with the Department and MCOs regarding

the quality of encounter data. Hilltop then confirmed the proposed procedures for data validation with the Department and reviewed and finalized the methodology prior to performing this encounter data validation analysis. Next, Hilltop analyzed rejected encounter data and accepted data with CY 2021 dates of service, using data as of August 2022. The review and audit processes for CY 2021 encounters concluded in October 2022.

Activity 3. Analysis of Electronic Encounter Data

In accordance with Hilltop's interagency governmental agreement with the Department to host a secure data warehouse for its encounters and provide data-driven policy consultation, research, and analytics, Hilltop completed Activity 3 of the encounter data validation.

Activity 3 requires the following four steps for analyses:

1. Develop a data quality test plan based on data element validity requirements
2. Encounter data macro-analysis—verification of data integrity
3. Encounter data micro-analysis—generate and review analytic reports
4. Compare findings to state-identified benchmarks

Step 1. Develop a Data Quality Test Plan Based on Data Element Validity Requirements

Hilltop incorporated information in Activities 1 and 2 to develop a data quality test plan. This plan accounts for the EDI (front-end) edits built into the state's data system so that it pursues data problems that the state may have inadvertently missed or allowed (CMS, 2019).

Hilltop first met with the Department in August 2018 to obtain pertinent information regarding the processes and procedures used to receive, evaluate, and report on the validity of MCO encounter data. Hilltop also interviewed Department staff to document state processes for accepting and validating the completeness and accuracy of encounter data; this information was used to investigate and determine the magnitude and types of missing encounter data and identify potential data quality and MCO submission issues. Information provided included, but was not limited to, the following:

- MCO submission of encounter data through a secure data transfer system (837), via an EDI system, to the Department; the transfer of those data to the Department's mainframe for processing and validation checks; generation of exception (error) reports (8ER and 835); and the uploading of the accepted data to MMIS2.
    - The 837 system contains patient claim information, and the 835 system contains the claim payment and/or explanation of benefits data.
    - The Department receives encounter data from the MCOs in a format that is HIPAA 837 compliant, via an EDI system. It then executes validations to generate

exception (error) reports that are in HIPAA 835 compliant file format, as well as a summarized version known to the Department as the "8ER" report.

- Encounter data fields validated through the EDI process include recipient ID, sex, age, diagnosis codes, and procedure codes.
    - The EDI does not perform validation checks on the completeness or accuracy of payment fields submitted by the MCOs.
- After the data have been validated by the EDI, the Department processes incoming data from the MCOs within one to two business days.
- Error code (exception) reports (835 and 8ER) are generated by the validation process and sent to the MCOs.

Hilltop receives the EDI error report data (the 8ER report) and analyzes the number, types, and reasons for failed encounter submissions for each MCO. This report includes an analysis of the frequency of different error types and rejection categories. The 8ER error descriptions were used to develop a comprehensive overview of the validation process.

Successfully processed encounters receive additional code validation that identifies the criteria each encounter must meet to be accepted into MMIS2. In addition, Hilltop reviews the accepted encounter data for accuracy, completeness, and timeliness of MCO data submission.

Hilltop meets with the Department annually to discuss encounter data analysis, strategize efforts for improvement, and coordinate messaging on these topics. Major topics of discussion have included the completion of payment fields, the use of sub-indicators in payment fields, and provider enrollment edits. Hilltop also discussed with the Department the impact of the provider enrollment edits that took effect in January 2020. These edits were a response to the 2016 Medicaid managed care final rule, which required states to screen and enroll all managed care network providers who are not already enrolled in FFS.[5] Hilltop met with the Department regarding the increase in provider-related encounter rejections in May 2021 and October 2022 to coordinate a further investigation of the issue. Hilltop refined the categorization of provider-related rejection codes to distinguish the provider-related issues tied to enrollment from all other provider-related rejection codes.

The Department reestablished the technical Encounter Data Workgroup with the MCOs in 2018 to ensure the submission of data that are complete, accurate, of high quality, and in compliance with the new requirements for pay fields. The Workgroup also provides an opportunity to review the new structure in which CMS requires states to submit data, the Transformed Medicaid

[5] Medicaid and CHIP Managed Care Final Rule. 81 Fed. Reg. 27,890 (May 6, 2016) (to be codified at 42 CFR Parts 431, 433, 438, 440, 457 and 495).

Statistical Information System (T-MSIS). States must comply with T-MSIS requirements and follow all guidance for managed care data submitted to CMS.[6]

Due to the COVID-19 public health emergency, the Workgroup paused its meetings and reconvened again in July 2021. During these meetings, the Workgroup addressed the issues of exception errors, encounter denials, provider enrollment, and provider enrollment edit exceptions ("free agent") usage and monitoring. The Department also provided updates on T-MSIS, procedure codes, very low birth weight capitation, and encounter processing resolutions, including a solution for outpatient encounters that span more than one date of service, specifically through the overnight (midnight) hours.

To conduct the analysis, Hilltop used the Department's information regarding encounter data that failed the edit checks (rejected encounters), reasons for failure by the EDI, and comparisons with CY 2019 through CY 2021 rejection results. Hilltop also used these data and knowledge of the MCOs' relationships with providers to identify specific areas to investigate for missing services; data quality problems, such as the inability to process or retain certain fields; and problems MCOs might have compiling their encounter data and submitting the data files.

Step 2. Encounter Data Macro-Analysis—Verification of Data Integrity

Hilltop reviewed encounter data for accuracy and completeness by conducting integrity checks of the data files and automating the analyses. The analysis includes verifying that the state's identifiers (IDs) are accurately incorporated into the MCO information system; applying other consistency checks, such as verifying critical fields containing non-missing data; and inspecting the data fields for quality and general validity. Hilltop evaluated the ratio of participants to total accepted encounters by MCO to assess whether the distribution was similar across MCOs. Selected fields not verified by the Department during the EDI process in Step 1 were assessed for completeness and accuracy. Hilltop investigated how completely and accurately the MCOs populated payment fields when submitting encounter data to the Department following the new mandate effective January 1, 2018.

Hilltop then assessed how many medical encounters with a paid amount of $0 were identified as sub-capitated payments or denied payments and compared the amount entered in the pay field with the amount listed in the FFS fee schedule. In addition, Hilltop analyzed the completion of the institutional paid amounts. Hilltop investigated the third-party liability (TPL) variable in MCO encounters to determine whether MCOs are reporting these encounters appropriately. Finally, Hilltop assessed the MCO provider numbers to ensure that encounters received and accepted only included MCOs currently active within the HealthChoice program. Encounters received and accepted with MCO provider numbers that were not active within the HealthChoice program were excluded from the analysis. Because Aetna Better Health of Maryland (ABH) joined the

[6] See August 10, 2018, letter to State Health Officials (SHO# 18-008) providing guidance to states regarding expectations for Medicaid and CHIP data and ongoing T-MSIS implementation at https://www.medicaid.gov/Federal-Policy-Guidance/downloads/SHO18008.pdf

HealthChoice program in late 2017 and began reporting Maryland Medicaid data in CY 2018, its CY 2019 encounter data are considered benchmark data.

Step 3. Encounter Data Micro-Analysis—Generate and Review Analytic Reports

Hilltop analyzed and interpreted data based on the submitted fields, volume and consistency of the encounter data, and utilization rates. Hilltop specifically conducted analyses for other volume/consistency dimensions in four primary areas: time, provider type, service type, and appropriateness of diagnosis and procedure codes based on patient age and sex. The Department helped identify several specific analyses for each primary area related to policy interests; the results can inform the development of long-term strategies for monitoring and assessing the quality of encounter data.

Hilltop conducted an analysis of encounter data by time dimensions (i.e., service date and processing date) to show trends and evaluate data consistency. After establishing the length of time between service dates and processing dates, Hilltop compared these dimensions with state standards or benchmarks for data submission and processing. Hilltop also compared time dimension data between MCOs to determine whether they process data within similar time frames.

Hilltop analyzed encounter data by provider type to identify missing data. This analysis evaluates trends in provider services and seeks to determine any fluctuation in visits between CY 2019 and CY 2021. Provider analysis is focused on primary care visits, specifically the number of participants who had a visit with their PCPs within the calendar year. The service type analysis concentrated on three main service areas: inpatient hospitalizations, emergency department (ED) visits, and observation stays. The CY 2019 analysis provides baseline data and would typically allow the Department to identify any inconsistencies in utilization patterns for these types of services in CY 2020 and CY 2021. The pandemic emergency, however, resulted in declines in health care service utilization across the board, limiting the usefulness of the comparison.

Finally, Hilltop analyzed the age and sex appropriateness of diagnosis and procedure codes. Specifically, Hilltop conducted an age analysis of enrollees over 66 years, deliveries (births), the presence of a dementia diagnosis, and dental services. Hilltop conducted a sex analysis for delivery diagnosis codes. Participants older than 65 are ineligible for HealthChoice; therefore, any encounters for this population were noted, which could indicate an error in a participant's date of birth. Hilltop also conducted an analysis of dental encounters for enrollees aged 0 to 20 years whose dental services should have been paid through the FFS system.

Step 4. Findings to State-Identified Benchmarks

In Steps 2 and 3, Hilltop compared the encounter data submitted by each MCO with benchmarks identified by the Department. Hilltop performed the analyses by MCO and calendar year to benchmark each MCO against its own performance over time, as well as against other MCOs. Hilltop also identified and compared outlier data with overall trends noted among the MCOs.

Results of Activity 3: Analysis of Electronic Encounter Data

Step 1. Develop a Data Quality Test Plan Based on Data Element Validity Requirements

The Department began evaluating the MCO electronic encounter data by performing a series of validation checks on the EDI data. This process included analysis of critical data fields, consistency between data points, duplication, and validity. Encounters that failed to meet these standards were reported to the MCOs, and the 835 and the 8ER reports were returned to the MCOs for possible correction and resubmission.

The Department sent Hilltop the 8ER reports for CY 2019 through CY 2021, which included encounters that failed initial EDI edits (rejected encounters). Hilltop classified these rejected encounters into five categories: missing data, participant not eligible for service, value not valid for the field, inconsistent data, and duplicates.

Hilltop performed checks on critical fields for missing, invalid, and inconsistent data, including provider number, units of service, drug number, drug quantity, revenue code, procedure code, and diagnosis code. Hilltop identified eligibility issues for participants who were not eligible for MCO services at the time of the service. Examples of inconsistent data include discrepancies between dates, inconsistencies between diagnosis and age or sex, and inconsistencies between original and resubmitted encounters.

Table 1 presents the distribution of rejected encounters submitted by all MCOs, by category, for CY 2019 to CY 2021.

Table 1. Distribution of Rejected Encounter Submissions by EDI Rejection Category, CY 2019–CY 2021

Rejection Category	CY 2019		CY 2020		CY 2021	
	Number	Percentage of Total	Number	Percentage of Total	Number	Percentage of Total
Duplicate	103,108	5.4%	480,007	7.1%	77,347	1.8%
Inconsistent	46,438	2.5%	78,017	1.1%	40,961	0.9%
Missing	595,697	31.5%	1,053,540	15.5%	753,586	17.1%
Not Eligible	814,451	43.0%	450,374	6.6%	321,135	7.3%
Not Valid	334,314	17.7%	4,737,893	69.7%	3,224,258	73.0%
Total	**1,894,008**	**100.0%**	**6,799,831**	**100.0%**	**4,417,287**	**100.0%**

Overall, the number of rejected encounters increased by 133.2% during the evaluation period. Most of the increase (259%) occurred between CY 2019 and CY 2020, and it can largely be attributed to the addition of provider enrollment encounter edits that went live on January 1, 2020 (see Provider Enrollment-related Encounter Data Validation section below for detail). The Department worked with the MCOs for two years prior to the provider enrollment edits becoming effective to ensure that their providers were enrolled in FFS via the electronic provider

revalidation and enrollment portal (ePREP) system. However, many providers failed to enroll by January 1, 2020, or submitted enrollment information that was inconsistent with the encounter data submitted to the Department. The Department worked with the MCOs to resolve provider enrollment-related issues during CY 2020 and CY 2021, which resulted in a decrease in the number of rejected encounters by 35.0%. Rejected encounters due to invalid data experienced the greatest increase—55.3 percentage points—between CY 2019 and CY 2021.

The two primary reasons encounters were rejected in CY 2019 were missing data and participants ineligible for MCO services. In CY 2020 and CY 2021, the two most common reasons for rejected encounters were missing and invalid data. The number of encounters rejected due to invalid data rose from 334,314 in CY 2019 to 3,224,258 in CY 2021, an increase of 864.4%. The number of encounters rejected for missing data increased from 595,697 in CY 2019 to 753,586 in CY 2021—an increase of 26.5%. The following categories of rejections decreased in number: participants ineligible for MCO services, inconsistent data, and duplicate encounters.

Analyzing rejected encounters by MCO is useful for assessing trends and identifying issues that are specific to each MCO. This allows the Department to monitor and follow up with the MCOs on potential problem areas. Table 2 on the following page presents the distribution of rejected and accepted encounter submissions across MCOs for CY 2019 through CY 2021.

Table 2. Distribution of Rejected and Accepted Encounter Submissions by MCO, CY 2019–CY 2021

Rejected Encounters						
MCO	CY 2019		CY 2020		CY 2021	
	Number of Rejected Encounters	Percentage of All Rejected Encounters	Number of Rejected Encounters	Percentage of All Rejected Encounters	Number of Rejected Encounters	Percentage of All Rejected Encounters
ABH	13,736	0.7%	100,444	1.5%	432,360	9.8%
ACC	469,415	24.8%	1,217,777	17.9%	595,665	13.5%
CFCHP	198,845	10.5%	1,569,819	23.1%	323,604	7.3%
JMS	30,245	1.6%	97,575	1.4%	197,734	4.5%
KPMAS	79,759	4.2%	119,369	1.8%	286,174	6.5%
MPC	189,464	10.0%	1,053,040	15.5%	768,064	17.4%
MSFC	121,688	6.4%	361,709	5.3%	170,138	3.9%
PPMCO	456,593	24.1%	1,450,364	21.3%	977,473	22.1%
UHC	334,263	17.6%	829,734	12.2%	666,075	15.1%
Total	**1,894,008**	**100.0%**	**6,799,831**	**100.0%**	**4,417,287**	**100.0%**
Accepted Encounters						
MCO	CY 2019		CY 2020		CY 2021	
	Number of Accepted Encounters	Percentage of All Accepted Encounters	Number of Accepted Encounters	Percentage of All Accepted Encounters	Number of Accepted Encounters	Percentage of All Accepted Encounters
ABH	673,041	1.7%	989,996	2.5%	1,312,880	3.0%
ACC	8,310,071	20.5%	7,708,937	19.5%	8,399,279	19.0%
CFCHP	1,682,688	4.2%	2,237,433	5.7%	1,892,492	4.3%
JMS	1,197,438	3.0%	1,168,449	3.0%	1,235,612	2.8%
KPMAS	1,958,316	4.8%	2,080,743	5.3%	2,914,875	6.6%
MPC	7,556,406	18.7%	7,386,436	18.7%	8,250,416	18.6%
MSFC	3,313,427	8.2%	3,231,387	8.2%	3,413,822	7.7%
PPMCO	10,824,453	26.7%	9,906,093	25.0%	11,472,685	25.9%
UHC	4,976,203	12.3%	4,838,602	12.2%	5,390,628	12.2%
Total	**40,492,043**	**100.0%**	**39,548,076**	**100.0%**	**44,282,689**	**100.0%**

The volume of rejected encounters increased across all MCOs between CY 2019 and CY 2021, largely due to issues with provider data, explained in greater detail below. However, in CY 2021, the volume of rejected encounters decreased for most MCOs, except for ABH, Jai Medical Systems (JMS), and Kaiser Permanente of the Mid-Atlantic States, Inc. (KPMAS). Priority Partners (PPMCO) had the highest share (22.1%) of all rejections in CY 2021, which was a slight increase from 21.3% in CY 2020. Maryland Physicians Care (MPC) had 17.4% of all rejections in CY 2021, which was an increase of 1.9 percentage points from CY 2020, and an increase of 7.4 percentage points from CY 2019. UnitedHealthcare Community Plan (UHC) submitted 15.1% of the total rejected encounters in CY 2021—an increase of 2.9 percentage points from CY 2020.

Amerigroup Community Care (ACC) had 13.5% of all rejections in CY 2021, which was a decrease from 17.9% in CY 2020 and a decrease from 24.8% in CY 2019.

ABH, CareFirst Community Health Plan (CFCHP), JMS, KPMAS, and MedStar Family Choice, Inc. (MSFC) had less than 10% of the rejected encounters in CY 2021. CFCHP and MSFC decreased their share of rejections by 3.2 and 2.5 percentage points from CY 2019 to CY 2021, while ABH, JMS, and KPMAS' share of rejections increased by 9.1, 2.9, and 2.3 respectively, percentage points during the evaluation period.

Although there was some variation among MCOs in the distribution of the total rejected encounters from CY 2019 to CY 2021, there was very little variation in the distribution of accepted encounters among MCOs, except for ABH and KPMAS, whose share increased by 1.3 and 1.8 percentage points, respectively. For accepted encounter submission shares, the only other MCO to change by more than 1.0 percentage point was ACC, which decreased slightly by 1.5 percentage points from CY 2019 to CY 2021.

Tables 3 and 4 show the rate of encounters rejected by the EDI by category and MCO. Specifically, Table 3 presents the percentage of rejected encounters by EDI rejection category and MCO for CY 2021. See Appendix A for a graphical representation of Table 3.

Table 3. Percentage of Rejected Encounters by EDI Rejection Category by MCO, CY 2021

Rejection Category	ABH	ACC	CFCHP	JMS	KPMAS	MPC	MSFC	PPMCO	UHC
Duplicate	0.5%	0.3%	12.2%	0.3%	1.3%	1.4%	0.0%	0.2%	2.4%
Inconsistent	1.5%	1.3%	0.7%	0.1%	1.3%	0.9%	1.8%	0.1%	1.4%
Missing	19.1%	15.3%	9.7%	39.9%	19.4%	11.6%	31.0%	19.4%	12.3%
Not Eligible	0.5%	3.3%	11.3%	6.5%	4.7%	4.9%	5.1%	13.3%	9.0%
Not Valid	78.4%	79.9%	66.0%	53.1%	73.3%	81.1%	62.1%	66.9%	74.8%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

The primary reason for the rejection of encounters for all MCOs was the submission of invalid data (from 53.1% to 81.1%). The second most common reason for rejected encounters for all MCOs, except for CFCHP, was missing data (from 9.7% to 39.9%). For CFCHP, the second most common reason for rejected encounters was duplicate encounters (12.2%); for all other MCOs, the percentage of duplicate encounters was at or below 2.4%. For all MCOs, encounters rejected for inconsistent data remained below 2.0%. Encounters rejected due to participants' not being eligible for MCO services showed mixed performance across MCOs, ranging from 0.5% to 13.3%.

Table 4 presents the distribution of the reason for rejection and how it changed for each MCO between CY 2019 and CY 2021.

Table 4. Number and Percentage of Rejected Encounters by EDI Rejection Category and MCO, CY 2019–CY 2021

Rejection Category	Year	ABH	ACC	CFCHP	JMS	KPMAS	MPC	MSFC	PPMCO	UHC	Total
Duplicate	CY 2019	772 5.6%	42,534 9.1%	14,412 7.2%	1,520 5.0%	2,588 3.2%	8,512 4.5%	5,846 4.8%	12,623 2.8%	14,301 4.3%	**103,108 5.4%**
	CY 2020	1,165 1.2%	9,206 0.8%	440,785 28.1%	325 0.3%	342 0.3%	8,703 0.8%	499 0.1%	2,408 0.2%	16,574 2.0%	**480,007 7.1%**
	CY 2021	2,054 0.5%	1,521 0.3%	39,546 12.2%	665 0.3%	3,790 1.3%	11,082 1.4%	45 0.0%	2,439 0.2%	16,205 2.4%	**77,347 1.8%**
Inconsistent	CY 2019	319 2.3%	17,449 3.7%	8,084 4.1%	210 0.7%	5,634 7.1%	2,975 1.6%	1,171 1.0%	989 0.2%	9,607 2.9%	**46,438 2.5%**
	CY 2020	271 0.3%	5,110 0.4%	41,135 2.6%	125 0.1%	562 0.5%	14,243 1.4%	1,493 0.4%	737 0.1%	14,341 1.7%	**78,017 1.1%**
	CY 2021	6,506 1.5%	7,689 1.3%	2,399 0.7%	209 0.1%	3,771 1.3%	6,792 0.9%	3,000 1.8%	1,145 0.1%	9,450 1.4%	**40,961 0.9%**
Missing	CY 2019	7,377 53.7%	83,713 17.8%	39,514 19.9%	3,346 11.1%	34,160 42.8%	68,554 36.2%	68,889 56.6%	150,458 33.0%	139,686 41.8%	**595,697 31.5%**
	CY 2020	12,980 12.9%	241,554 19.8%	102,409 6.5%	35,798 36.7%	16,126 13.5%	136,058 12.9%	100,515 27.8%	289,479 20.0%	118,621 14.3%	**1,053,540 15.5%**
	CY 2021	82,627 19.1%	91,105 15.3%	31,378 9.7%	78,907 39.9%	55,501 19.4%	89,383 11.6%	52,811 31.0%	189,734 19.4%	82,140 12.3%	**753,586 17.1%**
Not Eligible	CY 2019	1,428 10.4%	284,915 60.7%	74,557 37.5%	11,767 38.9%	7,770 9.7%	70,100 37.0%	16,804 13.8%	233,901 51.2%	113,209 33.9%	**814,451 43.0%**
	CY 2020	2,839 2.8%	50,198 4.1%	52,338 3.3%	10,800 11.1%	8,502 7.1%	54,866 5.2%	10,956 3.0%	175,366 12.1%	84,509 10.2%	**450,374 6.6%**
	CY 2021	2,201 0.5%	19,531 3.3%	36,708 11.3%	12,929 6.5%	13,326 4.7%	37,778 4.9%	8,609 5.1%	129,848 13.3%	60,205 9.0%	**321,135 7.3%**
Not Valid	CY 2019	3,840 28.0%	40,804 8.7%	62,278 31.3%	13,402 44.3%	29,607 37.1%	39,323 20.8%	28,978 23.8%	58,622 12.8%	57,460 17.2%	**334,314 17.7%**
	CY 2020	83,189 82.8%	911,709 74.9%	933,152 59.4%	50,527 51.8%	93,837 78.6%	839,170 79.7%	248,246 68.6%	982,374 67.7%	595,689 71.8%	**4,737,893 69.7%**
	CY 2021	338,972 78.4%	475,819 79.9%	213,573 66.0%	105,024 53.1%	209,786 73.3%	623,029 81.1%	105,673 62.1%	654,307 66.9%	498,075 74.8%	**3,224,258 73.0%**
Total	**CY 2019**	**13,736 100.0%**	**469,415 100.0%**	**198,845 100.0%**	**30,245 100.0%**	**79,759 100.0%**	**189,464 100.0%**	**121,688 100.0%**	**456,593 100.0%**	**334,263 100.0%**	1,894,008 100.0%
	CY 2020	**100,444 100.0%**	**1,217,777 100.0%**	**1,569,819 100.0%**	**97,575 100.0%**	**119,369 100.0%**	**1,053,040 100.0%**	**361,709 100.0%**	**1,450,364 100.0%**	**829,734 100.0%**	6,799,831 100.0%
	CY 2021	**432,360 100.0%**	**595,665 100.0%**	**323,604 100.0%**	**197,734 100.0%**	**286,174 100.0%**	**768,064 100.0%**	**170,138 100.0%**	**977,473 100.0%**	**666,075 100.0%**	4,417,287 100.0%

The greatest increase in rejected encounters during the evaluation period was in the "Invalid" category, which increased more than tenfold in a single year: from 334,314 in CY 2019 to 4,737,893 in CY 2020, followed by a decrease to 3,224,258 in CY 2021. The majority of rejections for all MCOs in CY 2021 fell into the invalid data category, although the impact of invalid data was not spread evenly across MCOs. Just over one-half (53.1%) of JMS's rejections were in this category on the low end, with MPC at 81.1% on the high end.

The number of encounters rejected for duplicate data declined for four of the nine MCOs (ABH, CFCHP, MSFC, and UHC), with CFCHP having the greatest decline from 440,785 in CY 2020 to 39,546 in CY 2021. The remaining MCOs had more rejections for duplicate data in CY 2021 than in CY 2020, although, as a percentage of all their rejected encounters, CFCHP was the only MCO with a greater share of duplicates year over year. More than one-half (51.1%) of the rejected encounters due to duplicate data in CY 2021 were from CFCHP.

MCOs showed varied results in the numbers and percentages of rejected encounters in the "Inconsistent" category. The total number of rejections for inconsistent data fluctuated for all MCOs during the evaluation period. Notable outliers include the steep decline for CFCHP between CY 2020 and CY 2021 (41,135 to 2,399) and the significant increase for ABH between CY 2020 and CY 2021 (271 to 6,506). UHC had close to a quarter (23.1%) of all rejections for inconsistency in CY 2021.

Except for ABH, JMS, and KPMAS, all MCOs had fewer encounter rejections in the "Missing" category in CY 2021 than in CY 2020. ABH had a notable increase in missing data (84.3%) between CY 2020 and CY 2021.

All MCOs, except for JMS and KPMAS, had a decrease in the number of encounters rejected in the "Ineligible" category from CY 2020 to CY 2021.

Provider Enrollment-Related Encounter Data Validation

Hilltop conducted an additional review of the 8ER reports to analyze the high rates of encounters that failed initial EDI edits—particularly for invalid data—for CY 2021. Further research revealed that the 8ER high rejection rates were related to provider enrollment issues. The provider data, which is collected via ePREP, underwent changes that affected data beginning January 1, 2020. After two years of collaborative preparation with the MCOs, the provider system implemented new rules that require the National Provider Identifier (NPI) on any encounter to match the active NPI under which the provider enrolled with Medicaid for both the billing and rendering fields.[7] To remain actively enrolled with Medicaid, providers must perform actions such as updating their licensure on the ePREP portal. Failure to do so can affect a provider's active status and thus jeopardize the successful submission of encounters.

[7] Medicaid and CHIP Managed Care Final Rule. 81 Fed. Reg. 27,890 (May 6, 2016) (to be codified at 42 CFR Parts 431, 433, 438, 440, 457 and 495).

Prior to 2020, a provider could use any NPI on the encounter in the billing and rendering fields; as long as it matched any active NPI in MMIS2, the encounter linked with that provider/claim was accepted. The provider enrollment edits—intended to improve the accuracy of provider details—were implemented in response to CMS requirements. See Appendix B for a list of rejection codes divided into those relating to provider data and all others, and then subdivided by rejection category for CY 2021 encounters.

Table 5 presents rejected encounters by MCO, divided into provider enrollment-related and all other rejections. See Appendix C for more specific information about the top three most common MCO-specific EDI rejection codes (errors).

Table 5. Number of Rejected Encounters for Provider Enrollment-Related and Other Rejection Types by MCO, CY 2019–CY 2021

Rejection Type	MCO	CY 2019	CY 2020	CY 2021
Provider Enrollment-related	ABH	415	62,852	213,977
	ACC	2,376	581,764	358,314
	CFCHP	853	792,889	171,835
	JMS	433	39,849	87,223
	KPMAS	6,259	58,026	161,576
	MPC	5,172	655,323	462,622
	MSFC	9,709	165,243	44,877
	PPMCO	893	690,775	428,998
	UHC	1,046	410,302	323,994
	Subtotal	**27,156**	**3,457,023**	**2,253,416**
Other	ABH	13,321	37,592	218,383
	ACC	467,039	636,013	237,351
	CFCHP	197,992	776,930	151,769
	JMS	29,812	57,726	110,511
	KPMAS	73,500	61,343	124,598
	MPC	184,292	397,717	305,442
	MSFC	111,979	196,466	125,261
	PPMCO	455,700	759,589	548,475
	UHC	333,217	419,432	342,081
	Subtotal	**1,866,852**	**3,342,808**	**2,163,871**
Total		**1,894,008**	**6,799,831**	**4,417,287**

Every MCO had a significant increase in the number of provider enrollment-related rejected encounters from CY 2019 to CY 2021. The impact was lowest for MSFC and highest for MPC. The number of provider enrollment-related rejections decreased for most MCOs between CY 2020 and CY 2021, except for ABH, JMS, and KPMAS.

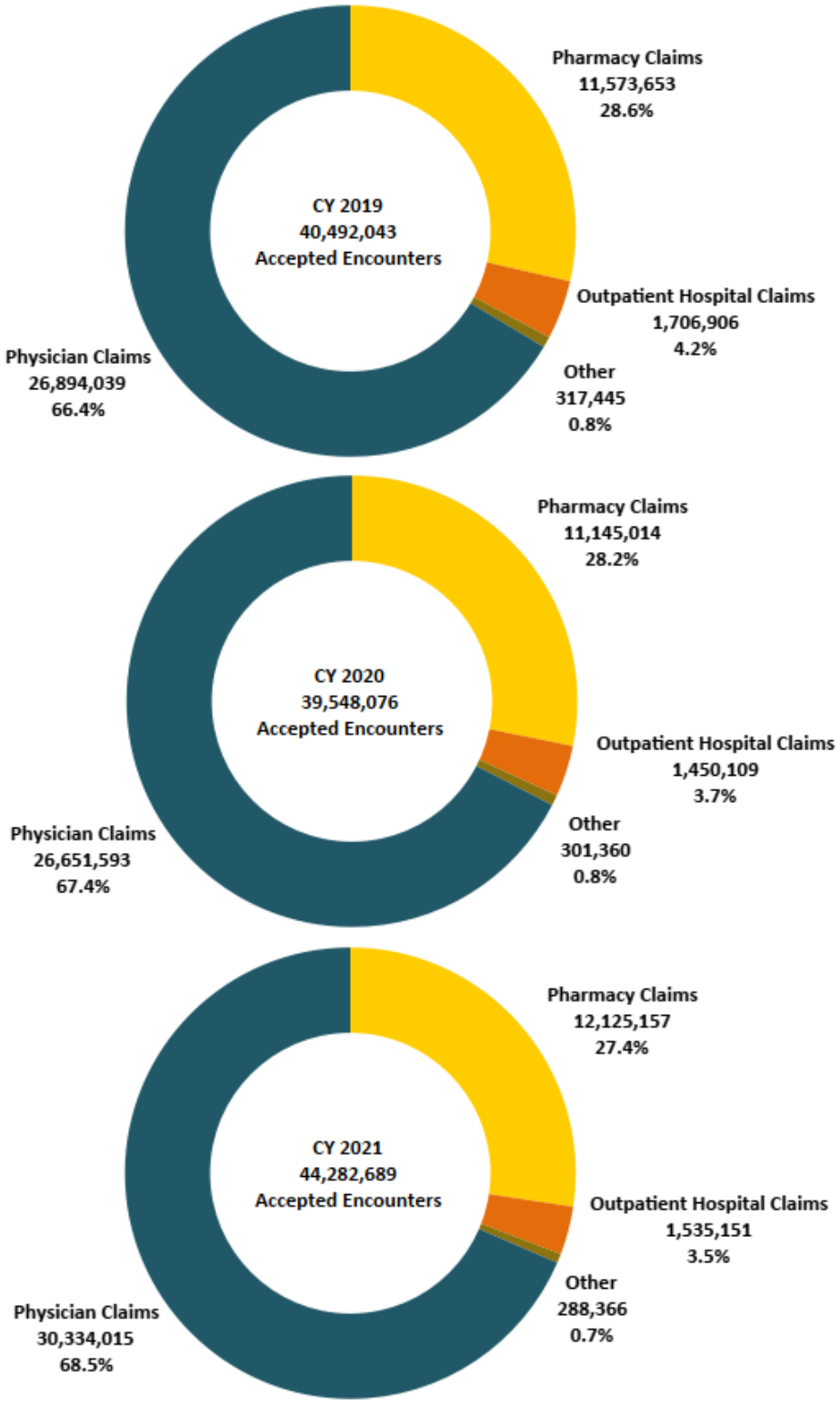
Step 2. Encounter Data Macro-Analysis—Verification of Data Integrity

During CY 2021, the MCOs submitted a total of 44.3 million accepted encounters (records), which was an increase from 40.5 million in CY 2019 and 39.5 million in CY 2020. Despite increased enrollment in CY 2020, overall utilization decreased across all MCOs due to the COVID-19 pandemic. However, utilization appears to have rebounded in CY 2021. Because the 8ER data received do not include dates of service, Hilltop estimated the total number of encounters submitted by adding the number of EDI rejected encounters to the number of accepted encounters. Using that method, a total of approximately 42.4 million encounters were submitted in CY 2019. This number increased to 46.3 million encounters in CY 2020 and 48.7 million encounters in CY 2021. Approximately 91% of the CY 2021 encounters were accepted into MMIS2, which is higher than the 85% acceptance rate during CY 2020, but lower than the 96% acceptance rate during CY 2019.

Hilltop received a monthly copy of all encounters accepted by MMIS2. Upon receipt of the accepted encounters, Hilltop performed several validation assessments and integrity checks of the fields to analyze and interpret the accuracy and completeness of the data. These assessments included determining whether there was an invalid end date of service or other errors. The files with errors were excluded before being imported into Hilltop's data warehouse.

Figure 1 shows the distribution of accepted encounter submissions by claim type (physician claims, pharmacy claims, outpatient hospital claims, and other) from CY 2019 to CY 2021.

Figure 1. Number and Percentage of Accepted Encounters by Claim Type, CY 2019–CY 2021



The distribution of accepted encounters by claim type changed slightly from CY 2019 to CY 2021. Physician claims represented most of the encounters during the evaluation period (roughly two-thirds), followed by pharmacy claims. Across the evaluation period, other encounters—including inpatient hospital stays, community-based services, and long-term care services—accounted for less than 1% of services.

Table 6 displays the percentage and number of accepted encounters by claim type for each MCO from CY 2019 to CY 2021.

Table 6. Distribution of Accepted Encounters by Claim Type and MCO, CY 2019–CY 2021

Claim Type	Year	ABH	ACC	CFCHP	JMS	KPMAS	MPC	MSFC	PPMCO	UHC
Physician Claim	CY 2019	69.6%	68.1%	65.6%	59.5%	73.3%	65.3%	63.8%	65.6%	67.8%
		468,693	5,656,536	1,104,417	709,405	1,434,683	4,932,731	2,112,508	7,102,954	3,372,112
	CY 2020	71.7%	66.4%	77.4%	62.6%	74.0%	65.9%	67.0%	64.3%	70.7%
		709,927	5,115,977	1,731,798	731,706	1,540,478	4,866,194	2,163,553	6,369,837	3,422,123
	CY 2021	71.8%	67.2%	67.5%	62.6%	75.9%	66.8%	67.7%	67.2%	73.3%
		943,246	5,646,100	1,277,419	773,641	2,212,349	5,510,114	2,311,286	7,710,525	3,949,335
Pharmacy Claim	CY 2019	24.5%	26.4%	25.1%	35.6%	24.8%	30.1%	31.8%	29.4%	27.5%
		165,104	2,197,587	422,101	425,738	485,369	2,276,112	1,053,442	3,177,988	1,370,212
	CY 2020	23.9%	28.1%	18.5%	33.6%	24.5%	29.7%	28.6%	31.2%	25.2%
		236,632	2,162,803	412,828	392,016	509,958	2,195,708	924,461	3,093,170	1,217,438
	CY 2021	24.4%	28.0%	27.4%	33.1%	22.4%	28.3%	28.4%	29.0%	22.9%
		319,923	2,355,627	517,959	408,946	653,626	2,333,598	969,219	3,330,404	1,235,855
Outpatient Hospital Claim	CY 2019	4.5%	4.8%	7.3%	4.7%	1.3%	3.7%	3.7%	4.4%	4.0%
		30,314	396,602	123,618	56,563	26,017	280,639	122,527	473,872	196,754
	CY 2020	3.4%	4.9%	3.3%	3.4%	0.8%	3.4%	3.6%	3.9%	3.4%
		33,887	373,886	73,827	39,863	17,162	251,207	115,213	382,663	162,401
	CY 2021	3.0%	4.1%	4.2%	3.9%	1.0%	4.0%	3.1%	3.3%	3.2%
		39,698	344,237	79,830	47,750	30,602	332,752	106,394	381,918	171,970
Other	CY 2019	1.3%	0.7%	1.9%	0.5%	0.6%	0.9%	0.8%	0.6%	0.7%
		8,930	59,346	32,552	5,732	12,247	66,924	24,950	69,639	37,125
	CY 2020	1.0%	0.7%	0.8%	0.4%	0.6%	1.0%	0.9%	0.6%	0.8%
		9,550	56,271	18,980	4,864	13,145	73,327	28,160	60,423	36,640
	CY 2021	0.8%	0.6%	0.9%	0.4%	0.6%	0.9%	0.8%	0.4%	0.6%
		10,013	53,315	17,284	5,275	18,298	73,952	26,923	49,838	33,468
Total	**CY 2019**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
		673,041	**8,310,071**	**1,682,688**	**1,197,438**	**1,958,316**	**7,556,406**	**3,313,427**	**10,824,453**	**4,976,203**
	CY 2020	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
		989,996	**7,708,937**	**2,237,433**	**1,168,449**	**2,080,743**	**7,386,436**	**3,231,387**	**9,906,093**	**4,838,602**
	CY 2021	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
		1,312,880	**8,399,279**	**1,892,492**	**1,235,612**	**2,914,875**	**8,250,416**	**3,413,822**	**11,472,685**	**5,390,628**

The distribution of accepted encounters remained relatively consistent across MCOs and calendar years. In CY 2021, physician encounters ranged from 62.6% of encounters (JMS) to 75.9% of encounters (KPMAS). JMS had the largest percentage of CY 2021 pharmacy encounters (33.1%), while KPMAS had the lowest percentage (22.4%). Outpatient hospital encounters ranged from a low of 1.0% for KPMAS to a high of 4.2% for CFCHP.

See Appendix D for a visual display of the number and percentage of accepted encounters by claim type and MCO in CY 2021.

Table 7 illustrates the distribution of HealthChoice participants and the volume of accepted encounters for each MCO during CY 2019 through CY 2021.

Table 7. Percentage of HealthChoice Participants and Accepted Encounters by MCO, CY 2019–CY 2021

MCO	CY 2019		CY 2020		CY 2021	
	Percent of Total Participants	Percent of Total Encounters	Percent of Total Participants	Percent of Total Encounters	Percent of Total Participants	Percent of Total Encounters
ABH	3.0%	1.7%	3.8%	2.5%	4.0%	3.0%
ACC	23.3%	20.5%	22.8%	19.5%	22.3%	19.0%
CFCHP	4.6%	4.2%	4.3%	5.7%	5.0%	4.3%
JMS	2.4%	3.0%	2.3%	3.0%	2.2%	2.8%
KPMAS	6.4%	4.8%	7.3%	5.3%	7.9%	6.6%
MPC	18.2%	18.7%	17.5%	18.7%	17.1%	18.6%
MSFC	8.1%	8.2%	7.8%	8.2%	7.6%	7.7%
PPMCO	25.4%	26.7%	24.7%	25.0%	24.1%	25.9%
UHC	12.7%	12.3%	12.3%	12.2%	11.9%	12.2%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

PPMCO and ACC are the largest MCOs, followed by MPC, UHC, KPMAS, MSFC, CFCHP, ABH, and JMS. The distribution of accepted encounters among MCOs in CY 2019 through CY 2021 was nearly proportional to the participant distribution. Although KPMAS had a greater share of enrollees in CY 2021 than MSFC, they had a smaller share of total encounters.

Managed Care Regulations: Accurate and Complete Encounter Data

In 2016, CMS issued its final rule, updating Medicaid managed care regulations.[8] One of the new requirements specified that MCOs must submit encounter data that are accurate and complete by January 2018.[9] To address this requirement, the Department notified Maryland MCOs in September 2017 that all encounter data submitted to the Department on or after January 1, 2018, must include allowed amounts and paid amounts on each encounter (Maryland

[8] Medicaid and CHIP Managed Care Final Rule. 81 Fed. Reg. 27,498 (May 6, 2016) (to be codified at 42 CFR Parts 431, 433, 438, 440, 457 and 495).
[9] 42 CFR § 438.818(a)(2).

Department of Health, 2017). In November 2020, CMS released a new final rule on managed care[10] that included technical modifications; however, it did not include changes to the EQR or encounter data reporting regulations.

In 2010, the Department and the MCOs worked together to ensure complete and accurate submission of paid amounts on pharmacy encounters. Pharmacy encounter data flow through a point of sale (POS) system, which ensures data accuracy at the time of submission. For nearly a decade, pharmacy encounters have been reliable, and the Department has confidence in the integrity and quality of the payment amounts. Beginning in October 2017, the Department used the pharmacy paid encounter process as a framework to begin receiving payment data for all encounters.

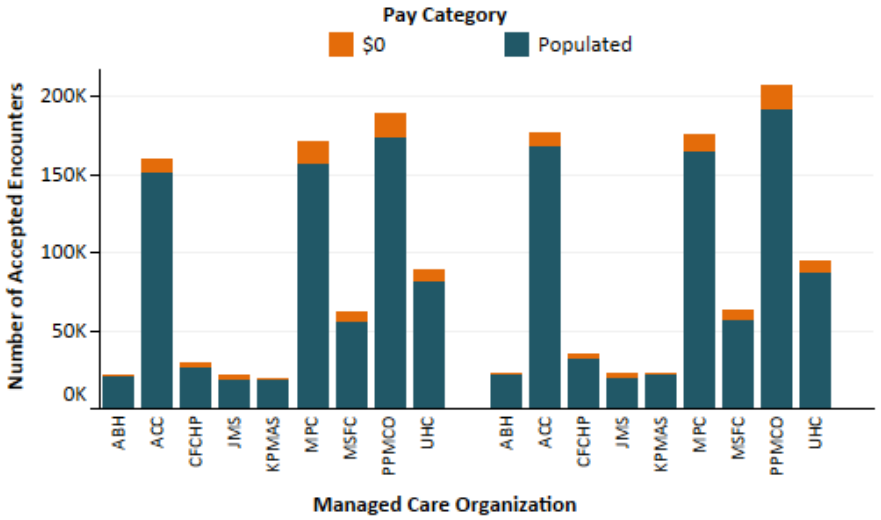
Department staff prepared MMIS2 to accept payment data for all encounters in the fall of 2017, convened technical MCO workgroups, and updated the 837 Companion Guides for professional (medical) and institutional encounters. Soon after MCOs began submitting payment data for all encounters in January 2018, Department staff identified errors in processing the paid amount for medical and institutional encounters. In February 2018, the Department reviewed MCO paid submissions to determine how many encounters had missing paid amounts, how many were $0 (separated by denied and subcapitated), and how many were populated. The Department shared its findings and met with MCOs individually to improve their submission processes. By August 2018, MMIS2 had received complete payment data for all medical encounters.

In Fall 2018, Department staff discovered that only the paid amount for the first service line of each institutional encounter was being recorded, which underreported the total amount paid. This issue was corrected in mid-2020; MMIS2 now stores the correct sum for all the total paid institutional service lines. The Department continues to work with the MCOs to ensure the validity of institutional and medical encounter data.

Figure 2 displays the distribution of pay category for accepted institutional encounter data by MCO in CY 2021.

[10] Medicaid and CHIP Managed Care Final Rule. 85 Fed. Reg. 72,574 (November 13, 2020) (to be codified at 42 CFR Parts 438 and 457).

Figure 2. Number of Accepted Institutional Encounters by MCO and Pay Category, July to December 2020–CY 2021



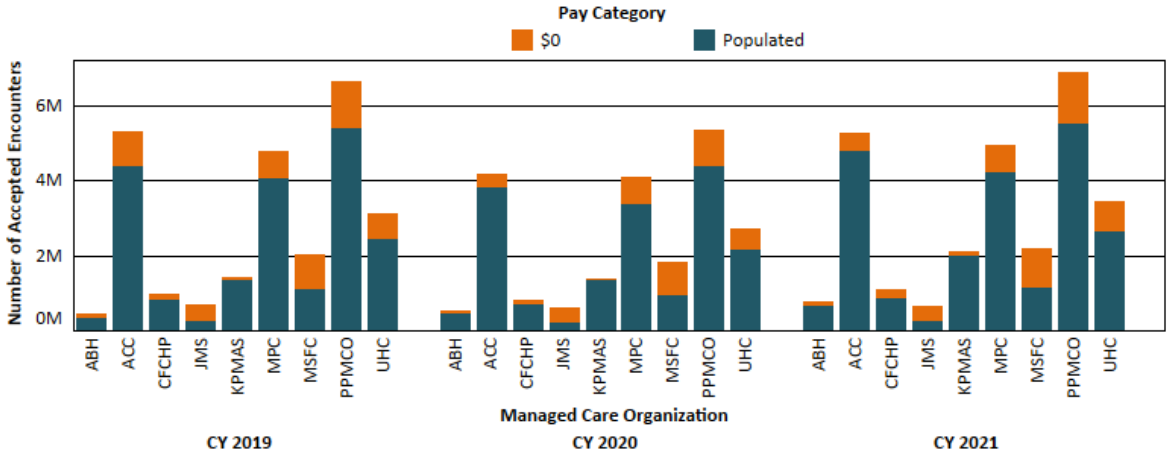
Pay Category	MCO	2020	2021	
		July-December	January-June	July-December
$0	ABH	2,361	1,207	971
	ACC	6,962	9,007	8,693
	CFCHP	2,312	3,273	3,178
	JMS	2,885	3,209	3,439
	KPMAS	1,036	1,206	1,432
	MPC	10,192	13,678	11,541
	MSFC	6,556	6,661	6,639
	PPMCO	16,593	15,564	15,992
	UHC	6,312	7,837	8,595
Populated	ABH	16,674	20,313	21,766
	ACC	138,164	150,856	168,044
	CFCHP	23,599	26,120	31,863
	JMS	16,593	17,976	18,656
	KPMAS	15,678	18,268	21,572
	MPC	119,540	156,969	163,953
	MSFC	51,642	54,926	56,662
	PPMCO	154,918	173,277	190,940
	UHC	74,093	80,779	86,353

Beginning in mid-2020, no MCO had any institutional encounters with a missing pay amount. All MCOs increased the number of institutional encounters with a populated pay amount during 2020 and 2021, but every MCO, other than ABH and PPMCO, increased the number of institutional encounters with a $0 pay amount during the same period.

Since CY 2019, the MCOs have included pay data on their medical encounters. All MCOs submitted a portion of their medical encounters with $0 pay, but the issue was most pronounced with JMS and MSFC, as shown in Figure 3 below.

Figure 3 displays the number of accepted medical encounters by MCO and pay category for CY 2019 through CY 2021. See Appendix E for the number of accepted medical encounters by MCO and pay category for CY 2021.

Figure 3. Number of Accepted Medical Encounters by MCO and Pay Category, CY 2019–CY 2021

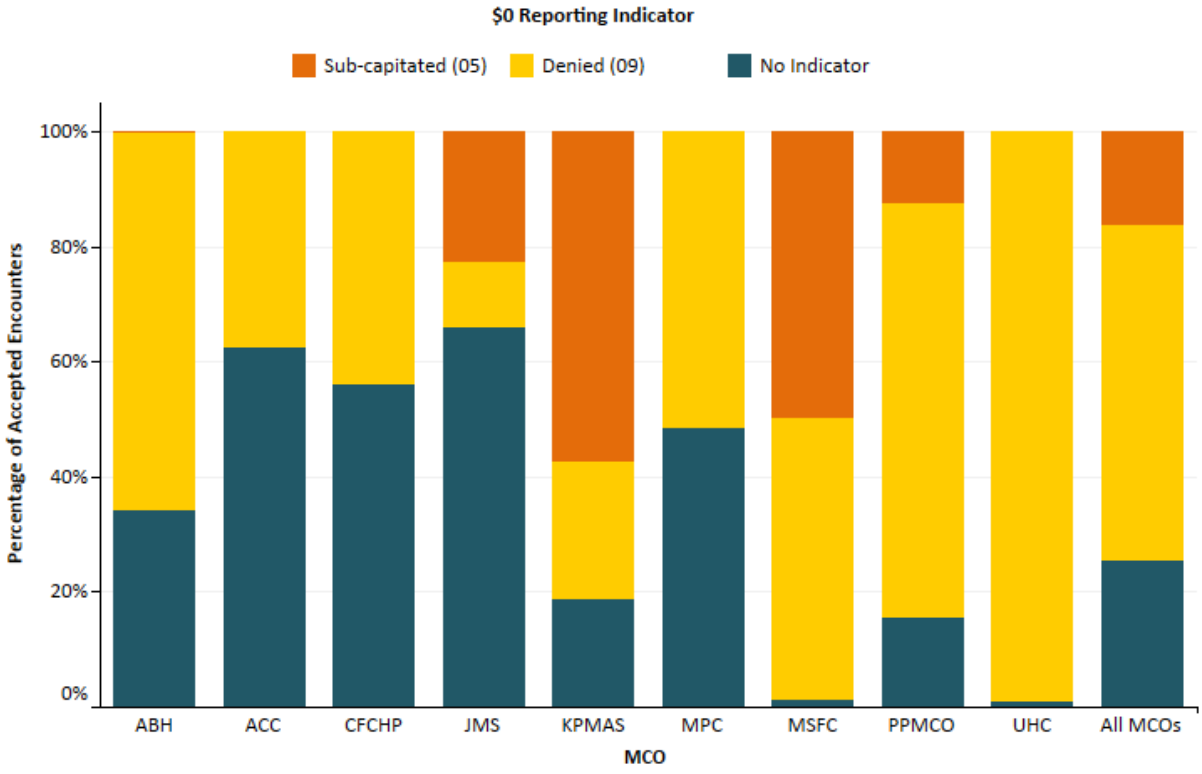


Year	Pay Category	ABH	ACC	CFCHP	JMS	KPMAS	MPC	MSFC	PPMCO	UHC
CY 2019	Populated	79.4%	82.3%	82.9%	34.7%	96.2%	85.0%	53.7%	80.9%	78.4%
		339,550	4,378,907	811,203	237,676	1,351,204	4,068,056	1,083,334	5,385,156	2,442,476
	$0	20.6%	17.7%	17.1%	65.3%	3.8%	15.0%	46.3%	19.1%	21.6%
		87,926	940,506	167,333	446,829	53,086	715,318	935,022	1,268,342	673,823
	Subtotal	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
		427,476	**5,319,413**	**978,536**	**684,505**	**1,404,290**	**4,783,374**	**2,018,356**	**6,653,498**	**3,116,299**
CY 2020	Populated	81.3%	91.1%	85.6%	34.0%	96.6%	83.0%	50.9%	81.9%	78.5%
		427,437	3,813,960	680,020	209,224	1,332,909	3,384,552	936,837	4,381,528	2,132,482
	$0	18.7%	8.9%	14.4%	66.0%	3.4%	17.0%	49.1%	18.1%	21.5%
		98,213	374,433	114,605	405,416	47,118	691,817	904,435	970,711	585,247
	Subtotal	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
		525,650	**4,188,393**	**794,625**	**614,640**	**1,380,027**	**4,076,369**	**1,841,272**	**5,352,239**	**2,717,729**
CY 2021	Populated	82.0%	90.8%	78.6%	37.5%	94.3%	85.5%	51.0%	80.5%	76.3%
		639,721	4,789,407	869,961	247,332	1,973,718	4,217,329	1,117,795	5,531,945	2,622,037
	$0	18.0%	9.2%	21.4%	62.5%	5.7%	14.5%	49.0%	19.5%	23.7%
		140,020	488,070	237,519	412,501	118,827	717,480	1,074,314	1,341,220	814,233
	Subtotal	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
		779,741	**5,277,477**	**1,107,480**	**659,833**	**2,092,545**	**4,934,809**	**2,192,109**	**6,873,165**	**3,436,270**

During CY 2021, JMS submitted 62.5% of its medical encounters with a $0 pay amount, and MSFC submitted nearly half of its medical encounters the same way. All other MCOs ranged from 5.7% (KPMAS) to 23.7% (UHC) of accepted medical encounters with $0 pay. Only ABH, JMS, MPC, and MSFC among all the MCOs had a lower share of encounters with $0 pay during CY 2021 than in CY 2020.

Figure 4 displays the percentage of accepted encounters with a $0 pay field with the sub-capitated reporting indicator (05), the denied reporting indicator (09), and no indicator by MCO.

Figure 4. Accepted Medical Encounters with $0 Pay Data by Reporting Indicator (05/09) and MCO, CY 2021



$0 Reporting Indicator	ABH	ACC	CFCHP	JMS	KPMAS	MPC	MSFC	PPMCO	UHC	All MCOs
Sub-capitated (05)	0.1%	0.0%	0.0%	22.8%	57.4%	0.0%	50.0%	12.6%	0.0%	**16.2%**
Denied (09)	65.7%	37.5%	43.9%	11.4%	24.0%	51.6%	48.7%	71.9%	99.0%	**58.4%**
No Indicator	34.2%	62.5%	56.1%	65.8%	18.6%	48.4%	1.3%	15.5%	1.0%	**25.4%**
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Adherence to the requirement that encounters with $0 pay include a reporting indicator varied significantly among the MCOs during CY 2021. MSFC and UHC submitted nearly all their $0 encounters with an indicator. By contrast, ACC, CFCHP, and JMS submitted more than one-half of their $0 pay medical encounters without an indicator. The percentage of $0 pay medical encounters without an indicator submitted by the remaining MCOs ranged from 15.5% (PPMCO) to 48.4% (MPC).

Hilltop also analyzed the accepted encounters during CY 2021 by comparing the price paid against the price listed for the same service on the FFS fee schedule. Of the more than 27 million encounters in this analysis, 24% matched the FFS fee schedule exactly. Nearly 50% differed to some degree between the amount paid by MCOs and the amount specified in the fee schedule, with the greatest portion having more than 20% variance. In addition, 20% of the encounters were reported with a $0 pay amount, approximately 40% of which were laboratory procedures. The proportion of encounters with $0 pay data ranged by MCO from 6% to 62%. KPMAS submitted the smallest proportion of encounters with $0 pay, demonstrating the MCO's extensive use of the pay fields. The Department should continue to work with the MCOs to

ensure that appropriate utilization and accuracy of the pay field on accepted encounters improves.

In CY 2019, Hilltop determined that TPL was reported inconsistently across MCOs. Some MCOs reported up to 95% of their encounters with a positive TPL amount in a sample of trauma encounters from CY 2019, whereas others reported no encounters with a positive TPL amount during the same time period. FFS claims generally had positive TPL amounts in 1% to 3% of cases. Further analysis of a sample of trauma encounters from CY 2021 showed that the inconsistencies remained; three MCOs reported no TPL for any encounters, and six MCOs reported positive TPL in 85% to 99% of the encounters. Hilltop has not used the MCO-reported TPL amount in any analyses since CY 2018.

Step 3. Encounter Data Micro-Analysis—Generate and Review Analytic Reports

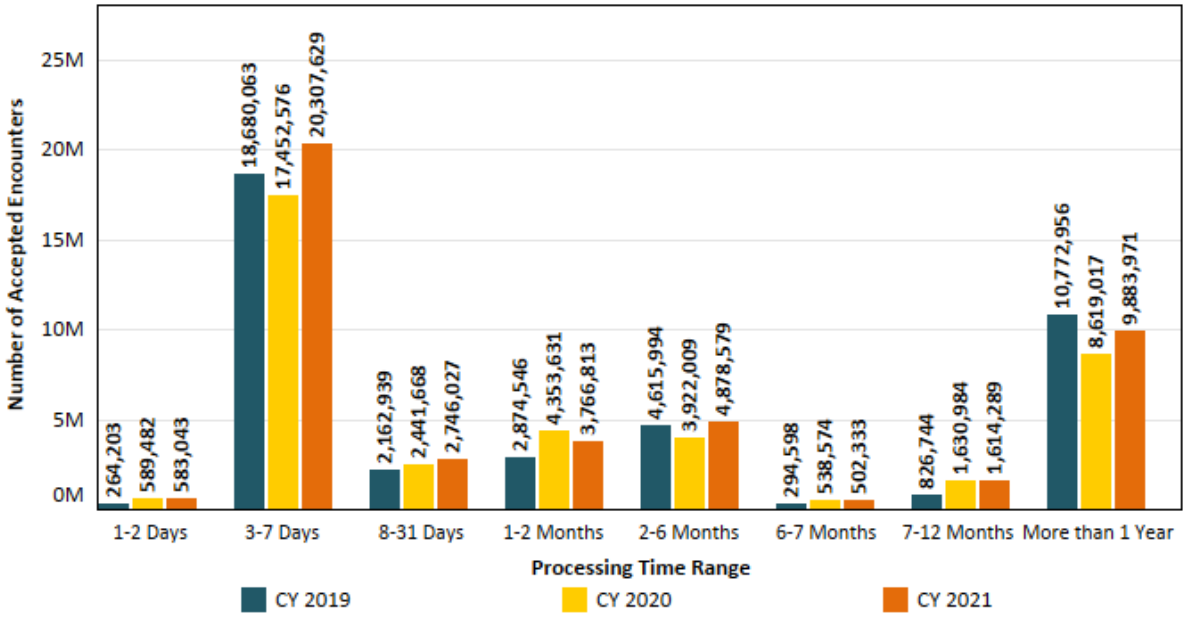
Time Dimension Analysis

Effective analysis of the Medicaid program requires complete, accurate, and timely processing of encounter data. Encounter processing time spans the interval between the end date of service and the date on which the encounter is submitted to the Department. After providers render a service, they are required to invoice the MCO within six months. The MCO must then adjudicate the encounter within 30 days of invoice submission.[11] Maryland regulations require MCOs to submit encounter data to the Department "within 60 calendar days after receipt of the claim from the provider."[12] Therefore, the maximum acceptable processing time allotted for an encounter between the end date of service and the date of submission to the Department is eight months.

The Medicaid program requires MCOs to submit encounters in a timely fashion; however, delays in submission occur, and some variation from month to month is expected. Noticeable changes related to timeliness may indicate irregular submission of encounter data. Figure 4 shows the timeliness of processing accepted encounter submissions from the end date of service for CY 2019 through CY 2021.

[11] Md. Code Ann., Health-Gen. § 15-102.3; § 15-1005.
[12] COMAR 10.09.65.15(B)(4).

Figure 5. Number of Accepted Encounters Submitted by Processing Time, CY 2019–CY 2021



Note for Figure 5 and Tables 8-10: An encounter is labeled as "1-2 months" if the encounter was submitted between 32 and 60 days after the date of service; "2-6 months" if the encounter was submitted between 61 and 182 days after the date of service; "6-7 months" if the encounter was submitted between 183 and 212 days after the date of service; and "7-12 months" if the encounter was submitted between 213 and 364 days after the date of service.

Overall, timeliness of encounter submission improved during the evaluation period, with more MCOs submitting encounters within 1 to 2 days in CY 2021 and a decrease in encounters submitted after 2 months.

Table 8 shows the processing times for encounters submitted by claim type for CY 2019 through CY 2021.

Table 8. Distribution of the Total Number of Accepted Encounters Submitted, by Claim Type and Processing Time, CY 2019–CY 2021

Processing Time Range	Pharmacy Claims			Physician Claims			Outpatient Hospital Claims			Other		
	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021
1-2 Days	83.9%	83.3%	82.7%	32.1%	29.4%	32.6%	17.5%	20.0%	22.6%	13.2%	16.3%	17.0%
	9,710,338	9,284,451	10,026,380	8,629,551	7,829,006	9,884,739	298,284	290,059	347,471	41,890	49,060	49,039
3-7 Days	11.2%	11.0%	11.5%	11.7%	9.6%	11.0%	8.3%	7.7%	8.8%	7.1%	7.7%	8.0%
	1,293,712	1,229,931	1,392,401	3,158,232	2,557,495	3,327,402	141,371	111,235	135,723	22,679	23,348	23,053
8-31 Days	4.7%	5.3%	5.4%	35.7%	28.3%	28.8%	31.0%	27.2%	26.9%	31.7%	32.5%	30.8%
	540,740	596,126	650,512	9,601,859	7,530,801	8,731,435	529,585	394,196	413,259	100,772	97,894	88,765
1-2 Months	0.2%	0.2%	0.3%	7.1%	8.1%	8.2%	10.9%	14.5%	12.9%	14.4%	14.3%	12.6%
	22,195	25,139	32,578	1,909,679	2,163,246	2,478,225	185,498	210,294	198,767	45,567	42,989	36,457
2-6 Months	0.1%	0.1%	0.2%	9.1%	14.9%	11.3%	21.7%	21.2%	17.6%	17.5%	19.1%	18.2%
	5,928	8,798	21,363	2,443,567	3,979,681	3,423,369	369,648	307,591	269,617	55,403	57,561	52,464
More than 6 Months	0.0%	0.0%	0.0%	4.3%	9.7%	8.2%	10.7%	9.4%	11.1%	16.1%	10.1%	13.4%
	740	569	1,923	1,151,151	2,591,238	2,488,840	182,520	136,730	170,314	51,134	30,503	38,588
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
	11,573,653	**11,145,014**	**12,125,157**	**26,894,039**	**26,651,467**	**30,334,010**	**1,706,906**	**1,450,105**	**1,535,151**	**317,445**	**301,355**	**288,366**

Most pharmacy encounters were submitted within 1 to 2 days throughout the evaluation period (over 80%), and more than 65% of all physician encounters were submitted within 31 days. A higher percentage of outpatient hospital encounters were submitted within 1 to 2 days in CY 2021 than CY 2019 (an increase of 5.1 percentage points). See Appendix F for a visual display of the number and percentage of encounters submitted by time processing range and claim type in CY 2019 through CY 2021.

Table 9 displays the monthly processing time for accepted encounters in CY 2019 through CY 2021.

Table 9. Percentage of Accepted Encounters Submitted, by Month and Processing Time, CY 2019–CY 2021

Processing Time Range	Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual Total
1-2 Days	CY 2019	42.7%	44.8%	46.9%	48.7%	44.2%	45.5%	45.0%	47.7%	41.8%	48.6%	45.9%	51.7%	**46.1%**
	CY 2020	34.0%	35.2%	46.8%	48.8%	46.8%	51.4%	42.9%	47.4%	49.3%	45.3%	46.7%	43.6%	**44.1%**
	CY 2021	35.9%	41.0%	47.1%	41.9%	44.5%	51.4%	47.1%	50.9%	46.6%	45.5%	51.4%	45.6%	**45.9%**
3-7 Days	CY 2019	11.4%	13.6%	13.6%	10.3%	9.7%	14.3%	11.4%	10.5%	13.6%	11.4%	8.7%	8.4%	**11.4%**
	CY 2020	9.6%	9.6%	6.4%	12.0%	12.3%	10.5%	11.2%	12.2%	11.3%	10.2%	7.7%	7.8%	**9.9%**
	CY 2021	11.9%	15.1%	9.9%	11.7%	12.4%	10.7%	10.6%	10.2%	11.6%	12.9%	5.8%	10.2%	**11.0%**
8-31 Days	CY 2019	28.6%	24.2%	21.1%	25.1%	31.0%	24.9%	27.4%	24.8%	30.1%	26.1%	30.5%	25.7%	**26.6%**
	CY 2020	20.9%	23.4%	19.2%	18.9%	21.0%	19.6%	21.8%	21.6%	18.5%	24.0%	25.2%	25.9%	**21.8%**
	CY 2021	23.8%	22.3%	22.0%	24.8%	24.2%	19.0%	21.6%	19.7%	22.5%	22.2%	22.0%	23.9%	**22.3%**
1-2 Months	CY 2019	4.5%	4.5%	6.2%	5.2%	5.3%	5.2%	5.9%	6.7%	5.8%	5.0%	5.3%	4.3%	**5.3%**
	CY 2020	8.1%	5.2%	8.1%	5.2%	5.1%	4.2%	5.6%	4.0%	5.5%	6.8%	6.4%	8.4%	**6.2%**
	CY 2021	9.8%	6.1%	5.5%	6.4%	4.7%	6.0%	5.0%	5.1%	6.3%	5.9%	7.3%	6.5%	**6.2%**
2-6 Months	CY 2019	8.6%	8.7%	7.8%	6.7%	6.0%	6.3%	6.3%	6.0%	5.1%	6.4%	8.6%	9.0%	**7.1%**
	CY 2020	14.0%	14.6%	11.0%	6.8%	6.2%	8.0%	12.3%	9.3%	11.2%	10.1%	10.6%	13.1%	**11.0%**
	CY 2021	9.1%	7.5%	7.6%	7.5%	7.0%	5.5%	5.6%	6.9%	8.9%	9.7%	13.0%	13.3%	**8.5%**
6-7 Months	CY 2019	0.7%	0.6%	1.3%	0.5%	0.4%	0.4%	0.4%	0.4%	1.5%	1.7%	0.2%	0.4%	**0.7%**
	CY 2020	2.0%	1.6%	0.6%	0.7%	3.0%	0.9%	0.9%	1.6%	1.1%	1.1%	2.5%	0.4%	**1.4%**
	CY 2021	1.2%	1.2%	0.7%	0.5%	0.5%	0.5%	2.3%	1.7%	0.9%	3.3%	0.3%	0.5%	**1.1%**
7-12 Months	CY 2019	1.9%	1.7%	1.4%	2.0%	3.0%	3.1%	3.3%	3.8%	2.1%	0.9%	0.7%	0.5%	**2.0%**
	CY 2020	6.7%	5.7%	5.1%	6.1%	4.4%	5.1%	5.0%	3.6%	2.9%	2.5%	1.0%	0.8%	**4.1%**
	CY 2021	2.8%	3.1%	3.3%	4.1%	6.4%	6.9%	7.8%	5.5%	3.3%	0.5%	0.3%	0.0%	**3.6%**
More than 1 Year	CY 2019	1.8%	1.9%	1.7%	1.4%	0.4%	0.3%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	**0.7%**
	CY 2020	4.8%	4.6%	2.8%	1.4%	1.3%	0.3%	0.2%	0.2%	0.1%	0.0%	0.0%	0.0%	**1.5%**
	CY 2021	5.5%	3.7%	3.8%	3.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**1.3%**
Total		**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

The timeliness of encounter submissions remained relatively consistent across all months. An average of 45.9% of CY 2021 encounters were processed by the Department within 1 to 2 days of the end date of service—a decrease from 46.1% in CY 2019, but an increase from 44.1% in CY 2020.

Table 10 displays processing times for accepted encounters submitted to the Department by MCO from CY 2019 to CY 2021.

Table 10. Percentage of Accepted Encounters Submitted by MCO and Processing Time, CY 2019–CY 2021

MCO	1-2 Days			3-7 Days			8-31 Days			1-2 Months		
	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021
ABH	31.6%	33.2%	35.7%	7.7%	7.0%	8.9%	19.3%	17.4%	21.7%	6.4%	6.8%	7.7%
ACC	47.3%	45.4%	49.5%	11.5%	10.3%	11.9%	23.5%	21.0%	21.6%	4.9%	6.2%	5.0%
CFCHP	53.6%	37.1%	42.2%	11.6%	7.1%	9.3%	18.0%	10.9%	17.4%	4.9%	4.3%	8.4%
JMS	30.6%	28.3%	27.9%	4.0%	3.7%	4.1%	8.1%	9.4%	15.9%	12.6%	12.7%	17.4%
KPMAS	70.7%	51.1%	60.0%	13.0%	12.1%	14.0%	12.1%	20.5%	18.8%	1.2%	7.2%	2.1%
MPC	46.2%	44.4%	46.4%	11.9%	10.0%	10.2%	29.6%	22.1%	16.9%	5.3%	5.1%	4.9%
MSFC	35.8%	30.4%	28.0%	10.6%	8.2%	8.6%	37.7%	32.0%	35.5%	7.1%	9.2%	11.3%
PPMCO	51.2%	53.7%	56.2%	12.3%	11.5%	12.5%	25.7%	21.4%	19.0%	4.3%	4.7%	4.2%
UHC	33.7%	37.7%	28.8%	10.7%	9.7%	10.4%	35.6%	25.9%	35.7%	7.0%	7.6%	9.7%

MCO	2-6 Months			6-7 Months			7-12 Months			More than 1 Year		
	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021
ABH	12.6%	13.3%	12.1%	2.6%	3.3%	1.7%	12.5%	11.3%	8.1%	7.2%	7.7%	4.0%
ACC	9.1%	12.5%	6.7%	1.1%	0.9%	0.6%	2.1%	2.8%	2.8%	0.6%	1.0%	2.0%
CFCHP	6.7%	15.6%	15.8%	0.8%	3.9%	1.4%	2.7%	19.8%	4.3%	1.7%	1.3%	1.1%
JMS	28.7%	31.0%	11.8%	3.2%	3.7%	2.6%	12.1%	5.0%	15.5%	0.7%	6.1%	4.9%
KPMAS	1.7%	5.1%	3.8%	0.3%	0.7%	0.5%	0.9%	2.9%	0.7%	0.0%	0.4%	0.1%
MPC	5.3%	11.0%	10.6%	0.4%	1.3%	2.0%	1.1%	4.3%	7.3%	0.2%	1.8%	1.7%
MSFC	5.8%	14.1%	12.1%	0.6%	2.0%	1.7%	1.5%	2.7%	2.2%	0.8%	1.4%	0.5%
PPMCO	4.1%	6.5%	5.2%	0.4%	0.6%	0.6%	1.3%	1.2%	1.5%	0.7%	0.5%	0.9%
UHC	10.1%	10.9%	11.2%	0.8%	1.5%	1.2%	1.9%	4.5%	2.5%	0.2%	2.1%	0.4%

The majority of MCOs, except for JMS, MSFC, and UHC, submitted a higher percentage of their encounters within 1 to 2 days in CY 2021 than in CY 2020. In CY 2021, the percentage of encounters submitted by MCOs within 1 to 2 days ranged from 27.9% (JMS) to 60.0% (KPMAS). The submission of encounters within 3 to 7 days increased for all nine MCOs. JMS had the lowest percentage of encounters submitted within 1 to 2 days and 3 to 7 days in CY 2021.

See Appendix G for a stacked bar chart displaying the number and percentage of encounters within each claim type from CY 2019 to CY 2021 by processing time. Appendix H provides a table outlining the number and percentage of encounters submitted by MCOs by processing time in CY 2021. See Appendix I for a stacked bar chart displaying the percentage of encounters submitted by MCO by processing time in CY 2019 through CY 2021.

Provider Analysis

Evaluating encounters by provider type for fluctuations across MCOs contributes to the assessment of encounter data volume and consistency. The following provider analysis examines encounter data for PCPs and establishes a comparison rate of PCP visits in HealthChoice. Table 11 shows the distribution of all HealthChoice participants enrolled for any length of time who received a PCP visit by an MCO during CY 2019 through CY 2021.

Table 11. Number and Percentage of HealthChoice Participants (Any Period of Enrollment) with a PCP Visit by MCO, CY 2019–CY 2021

	Year	ABH	ACC	CFCHP	JMS	KPMAS	MPC	MSFC	PPMCO	UHC	Total
Number of participants (any period of enrollment)	CY 2019	40,397	320,772	61,973	32,604	87,327	249,935	111,002	350,181	174,900	1,429,091
	CY 2020	51,501	317,912	59,073	32,184	101,834	243,944	108,468	344,584	170,640	1,430,140
	CY 2021	59,058	332,173	73,931	32,367	117,044	255,039	113,288	359,863	177,570	1,520,333
Percentage of participants with a visit with any PCP in any MCO network	CY 2019	21.4%	83.7%	72.1%	77.5%	74.2%	79.7%	75.9%	84.0%	79.3%	78.9%
	CY 2020	16.9%	75.8%	65.3%	73.5%	70.3%	73.8%	71.3%	74.7%	67.8%	70.9%
	CY 2021	61.8%	80.8%	64.4%	75.2%	79.1%	77.4%	74.7%	78.0%	69.2%	76.0%
Percentage of participants with a visit with their assigned PCP	CY 2019	1.9%	43.0%	22.4%	3.5%	53.7%	33.4%	27.4%	51.8%	36.3%	39.1%
	CY 2020	1.6%	42.5%	24.6%	25.8%	47.3%	31.6%	26.1%	32.7%	28.6%	33.1%
	CY 2021	21.4%	44.1%	23.5%	27.0%	54.4%	31.5%	26.2%	38.1%	24.7%	35.5%
Percentage of participants with a visit with their assigned PCP, group practice, or partner PCPs	CY 2019	2.9%	65.4%	38.3%	57.0%	61.4%	52.6%	51.9%	54.6%	48.7%	54.1%
	CY 2020	2.4%	60.4%	37.1%	52.5%	67.3%	48.8%	43.3%	35.5%	41.4%	46.1%
	CY 2021	31.0%	62.8%	35.6%	54.0%	74.8%	50.2%	44.3%	40.8%	38.5%	49.4%

Notes: Because a participant can be enrolled in multiple MCOs during the year, the total number of participants shown above is not a unique count. Counts do not include FFS claims. Please read ABH's results with caution: the MCO only began providing acceptable files in 2021. The methodology was updated in 2021 to account for changes in the rendering vs. billing provider fields in MMIS2, so the CY 2019 and CY 2020 numbers have changed significantly in some cases.

For this analysis, Hilltop matched the Medicaid identification numbers the MCOs provided for their members to eligibility data in MMIS2. Only participants listed in an MCO's files and enrolled in MMIS2 were included in the analysis.

The CY 2021 PCP visit rate (defined as a visit to the assigned PCP, group practice, or partner PCP) ranged from 35.6% (CFCHP) to 74.8% (KPMAS), excluding ABH. Using the broadest definition of a PCP visit—that is, a visit to any PCP within any MCO's network—the PCP visit rate ranged from 64.4% (CFCHP) to 80.8% (ACC), excluding ABH. The PCP visit rate decreased across all measures between CY 2019 and CY 2021.

Service Type Analysis

Table 12 shows the number and percentage of encounter visits for inpatient hospitalizations, ED visits, and observations stays by MCO for CY 2019 to CY 2021.

Table 12. Number and Percentage of Inpatient Visits, ED Visits, and Observation Stays by MCO, CY 2019–CY 2021

Visits	Year	ABH	ACC	CFCHP	JMS	KPMAS	MPC	MSFC	PPMCO	UHC	Total
Number of Visits	CY 2019	328,124	4,145,541	779,491	507,459	873,544	3,986,950	1,650,018	5,522,652	2,443,667	**20,237,446**
	CY 2020	432,167	3,604,824	671,679	461,007	797,758	3,564,836	1,495,891	4,718,567	2,131,056	**17,877,785**
	CY 2021	613,502	4,296,251	887,454	502,290	1,144,056	4,035,993	1,699,091	5,534,477	2,470,312	**21,183,426**
Percentage of All Visits	CY 2019	1.6%	20.5%	3.9%	2.5%	4.3%	19.7%	8.2%	27.3%	12.1%	**100.0%**
	CY 2020	2.4%	20.2%	3.8%	2.6%	4.5%	19.9%	8.4%	26.4%	11.9%	**100.0%**
	CY 2021	2.9%	20.3%	4.2%	2.4%	5.4%	19.1%	8.0%	26.1%	11.7%	**100.0%**
Number of Inpatient Visits	CY 2019	2,808	24,061	7,491	3,898	6,146	23,985	9,526	32,586	13,723	**124,224**
	CY 2020	3,792	21,966	5,009	3,510	6,603	21,181	8,590	28,685	12,717	**112,053**
	CY 2021	4,047	22,569	6,080	3,556	7,609	22,247	9,141	29,423	13,042	**117,714**
Percentage of All Visits that were Inpatient	CY 2019	0.9%	0.6%	1.0%	0.8%	0.7%	0.6%	0.6%	0.6%	0.6%	**0.6%**
	CY 2020	0.9%	0.6%	0.7%	0.8%	0.8%	0.6%	0.6%	0.6%	0.6%	**0.6%**
	CY 2021	0.7%	0.5%	0.7%	0.7%	0.7%	0.6%	0.5%	0.5%	0.5%	**0.6%**
Number of ED Visits	CY 2019	14,182	147,082	34,031	25,176	17,500	150,968	60,520	196,441	88,629	**734,529**
	CY 2020	15,762	109,255	23,287	18,740	13,001	110,516	43,988	138,115	62,984	**535,648**
	CY 2021	21,509	131,335	30,394	20,795	23,246	125,517	51,392	165,869	73,567	**643,624**
Percentage of All Visits that were ED	CY 2019	4.3%	3.5%	4.4%	5.0%	2.0%	3.8%	3.7%	3.6%	3.6%	**3.6%**
	CY 2020	3.6%	3.0%	3.5%	4.1%	1.6%	3.1%	2.9%	2.9%	3.0%	**3.0%**
	CY 2021	3.5%	3.1%	3.4%	4.1%	2.0%	3.1%	3.0%	3.0%	3.0%	**3.0%**
Number of Observation Stays	CY 2019	643	7,329	1,915	1,542	968	10,196	3,366	9,768	6,080	**41,807**
	CY 2020	1,074	7,426	1,552	1,182	928	8,232	2,901	8,740	5,469	**37,504**
	CY 2021	1,239	8,115	1,994	1,173	1,472	8,926	3,134	10,698	6,789	**43,540**
Percentage of All Visits that were Observation Stays	CY 2019	0.2%	0.2%	0.2%	0.3%	0.1%	0.3%	0.2%	0.2%	0.2%	**0.2%**
	CY 2020	0.2%	0.2%	0.2%	0.3%	0.1%	0.2%	0.2%	0.2%	0.3%	**0.2%**
	CY 2021	0.2%	0.2%	0.2%	0.2%	0.1%	0.2%	0.2%	0.2%	0.2%	**0.2%**

Note: Visits were duplicated between inpatient visits, ED visits, and observation stays.

For this analysis, a visit was defined as one encounter per person per provider per day. MCOs reported a consistent distribution of visits by service type for all years of the evaluation period. The percentages for both the total inpatient hospitalizations and observation stays combined were less than 1.0% of visits each year. ED visits, which were 3.0% of all visits in CY 2021, ranged from 2.0% of all visits (KPMAS) to 4.1% of all visits (JMS). As shown in the annual HealthChoice evaluation, the overall percentage of HealthChoice participants with an outpatient ED visit and inpatient admission decreased between CY 2016 and CY 2020 (The Hilltop Institute, 2022).

Analysis by Age and Sex

Hilltop conducted an analysis of encounter data submitted by MCOs to determine the effectiveness of encounter data edit checks between CY 2019 and CY 2021. The following areas

were analyzed: 1) individuals over age 65 with encounters, 2) individuals with a service date before their date of birth, 3) age-appropriate and sex-appropriate diagnoses for delivery, 4) age-appropriate dementia diagnoses, and 5) children aged 0 to 20 years with dental encounters.

Because participants older than 65 are ineligible for HealthChoice, Hilltop searched for any encounters for those aged 66 or older. Between CY 2019 and CY 2020, the number of encounters submitted increased for participants who were aged 66 or older and participants who did not have a reported date of birth. The number then fell during CY 2021 to a number lower than in CY 2019.[13] The number of individuals with a service date before their date of birth decreased between CY 2019 and CY 2021. The MCOs and the Department improved the quality of reporting encounter data for age-appropriate diagnoses in CY 2021.

The Maryland Healthy Smiles Dental Program (Healthy Smiles) provides dental coverage for children under the age of 21. The program is paid on an FFS basis, not through the MCO service package. Hilltop found very few dental encounters for children under the age of 21 covered by an MCO in CY 2019 and 2020, and none during CY 2021.

Hilltop analyzed the volume of participants who had a diagnosis for delivery (births) by age group between CY 2019 and CY 2021. Participants aged 0 to 12 and 51 or older are typically considered to be outside of the expected age range for delivery. This analysis only considers female participants with a delivery diagnosis.[14] Across all MCOs, the number of female participants identified as delivering outside of the expected age ranges was 89 in CY 2019, 118 in CY 2020, and 122 in CY 2021. The data substantiate that, overall, the encounters submitted are age-appropriate for delivery. See Appendix J for delivery codes.

Hilltop also validated encounter data for sex-appropriate delivery diagnoses. A diagnosis for delivery should typically be present only on encounters for female participants.[15] All MCOs had similar distribution, with nearly 100% of deliveries being reported for females. Delivery diagnoses for male participants in the encounter data are negligible, totaling only 52 reported deliveries across all MCOs in CY 2021, a slight increase from what was reported in CY 2019 (30) and CY 2020 (45).[16]

The final analysis focused on age-appropriate diagnoses of dementia (see Appendix K for dementia codes) from CY 2019 to CY 2021. Although dementia is a disease generally associated with older age, onset can occur as early as 30 years of age. Thus, the prevalence of dementia diagnoses should increase with age after 30. Hilltop identified the number of participants under the age of 30 with an encounter with a dementia diagnosis. While each MCO had participants under the age of 30 with a dementia diagnosis, the total numbers were relatively small (324 participants were reported across all MCOs in CY 2021).[17]

[13] Data not shown due to small cell sizes.
[14] In MMIS2, male or female are the only two options.
[15] In MMIS2, male or female are the only two options.
[16] Data not shown by MCO due to small cell sizes.
[17] Data not shown by MCO due to small cell sizes.

Recommendations

Step 1. Develop a Data Quality Test Plan Based on Data Element Validity Requirements

In Step 1, Hilltop reviewed 8ER reports and found that, out of approximately 48.7 million overall encounters, more than 4.4 million encounters (approximately 9.1%) were rejected through the EDI process in CY 2021. This represents a decrease from 6.8 million rejected encounters in CY 2020; however, it remains a large increase from 1.9 million rejected encounters in CY 2019. The major cause of this increase in rejected encounters is problems related to provider information. The number of rejected encounters decreased from CY 2020 to CY 2021, which indicates a positive trend. However, the Department should continue to monitor and work with the MCOs to resolve the provider enrollment data problems.

While all MCOs experienced major increases in the incidence of provider enrollment-related rejected encounters from CY 2019 to CY 2020, only ABH, JMS, and KPMAS had more provider enrollment-related rejections in CY 2021 than in CY 2020. ABH, JMS, and KPMAS also are the only MCOs to have an increase in non-provider enrollment-related rejected encounters from CY 2020 to CY 2021. The increases seen with ABH and KPMAS outpaced the rate at which their shares of all HealthChoice enrollees increased, indicating that there might be areas for improvement. JMS's increase in rejected encounters for non-provider enrollment-related issues (from 29,918 in CY 2019 to 110,511 in CY 2021) coincided with a decrease in its share of all HealthChoice enrollees (from 2.4% in CY 2019 to 2.2% in CY 2021), indicating problems with that organization's EDI processes. The Department should work with the MCOs to instill best practices to improve their numbers of rejected encounters.

The variance between an MCO's share of all rejections and its share of all accepted encounters might warrant further attention. If an MCO's share of rejections is much higher than its share of accepted encounters, the organization might have a specific problem. If, on the other hand, the share of accepted encounters is greater than the share of rejections, the MCO might have some best practices to share. ABH had 9.8% of all rejected encounters in CY 2021, but only 3.0% of accepted encounters. Conversely, MSFC's share of accepted encounters (7.7%) exceeded its share of rejections (3.9%) during the same period.

Step 2. Encounter Data Macro-Analysis—Verification of Data Integrity

Hilltop analyzed and interpreted the encounter data and found that, during CY 2021, the MCOs submitted a total of 44.3 million accepted encounters (records), an increase from 40.5 million in CY 2019 and 39.5 million in CY 2020, respectively. Hilltop reviewed encounters by claim type and found the distribution to be relatively similar across MCOs. Each MCO's distribution of encounters across claim types remained stable and consistent across the years. Hilltop also compared the proportion of HealthChoice participants by MCO with the proportion of accepted encounters by MCO and found similar trends.

Hilltop conducted an analysis of payment data on medical encounters and found that all HealthChoice MCOs continued to submit their medical encounters with populated payment fields from CY 2019 to CY 2021. However, most MCOs, except for ACC and JMS, continued to show elevated numbers of encounters submitted with $0 pay. Hilltop further analyzed the MCOs' use of the 05/09 indicator on medical encounters with $0 in the pay field. Adherence to this requirement is uneven across MCOs, and none demonstrated full compliance in CY 2021, although MSFC and UHC submitted the majority of their $0 encounters with an indicator. The Department should consider evaluating each MCO's sub-capitation arrangements with other organizations and comparing those arrangements with the MCO's use of the sub-capitation indicator. A mismatch between these could indicate a problem with the MCO's use of the sub-capitation indicator.

Hilltop also analyzed the variance between the pay amounts included in accepted encounters to the approved payment amounts on the FFS fee schedule. KPMAS demonstrated a high degree of variance from the fee schedule during CY 2021. The Department should continue to work with the MCOs to ensure appropriate utilization and improvement in the accuracy of the payment field on accepted encounters. The Department also resolved an MMIS2 issue, which allowed institutional pay to be captured more accurately in July 2020. This field is now populated for all MCOs. Hilltop determined that the TPL was not reported consistently across MCOs, with many MCOs reporting positive TPL in nearly 100% of encounters. Therefore, the MCO-reported TPL amount is not used in any analyses.

To address the rise in rejected encounters, the Department should continue to encourage MCOs to work with their providers to ensure that they are enrolled on the date of service and that they know how to check their current status. The Department should also monitor the MCOs' TPL-reported amounts.

Step 3. Encounter Data Micro-Analysis—Generate and Review Analytic Reports

Time Dimension Analysis

Hilltop compared dates of service with MCO encounter submission dates and found that most encounters in CY 2021 were submitted to the Department within one month of the end date of service, which is consistent with CY 2020 and CY 2019 findings. Nearly all (82.7%) pharmacy encounters were submitted within one to two days of the date of service. The majority of MCOs, except for JMS, MSFC, and UHC, showed improvement in the submission of accepted encounters within two days of the end date of service. In CY 2021, JMS's proportion of accepted encounters submitted more than seven months after the service date increased significantly. UHC's rate of encounters processed within 1 to 2 days fell by 8.9 percentage points. The Department should continue to monitor monthly submissions to evaluate consistency and ensure that the MCOs submit data in a timely manner. MCOs that submit encounters more than eight months after the date of service—the maximum time allotted for an encounter to be submitted to the Department—should be flagged for improvement.

Provider Analysis

Hilltop compared the percentage of participants with a PCP visit by MCO between CY 2019 and CY 2021 and found that all categories of PCP visits decreased from CY 2019 to CY 2020 and then increased in CY 2021. The increase was most pronounced in the percentage of participants with a visit with any PCP in any MCO network. The Department should continue to monitor PCP visits by MCOs in future encounter data validations.

Service Type Analysis

Hilltop reviewed the volume of inpatient visits, ED visits, and observation stays by MCO. Trends in service type were consistent across MCOs and years. There was a significant decrease in ED visits between CY 2019 and CY 2020, likely due to decreased utilization related to COVID-19, followed by an increase in ED visits in CY 2021. The Department should continue to review these data and compare trends in future annual encounter data validations to ensure consistency.

Analysis by Age and Sex

The MCOs and the Department continued to improve the quality of reporting encounter data for age-appropriate and sex-appropriate diagnoses in CY 2021. The Department should continue to review and audit the participant-level, MCO-specific reports that Hilltop generated for delivery, dementia, individuals over age 65, pediatric dental, and missing age outlier data. MCOs that submit the encounter outliers should be notified, demographic information should be updated, and adjustments should be made, as needed. The number of encounters with the date of service before the enrollee's date of birth declined between CY 2019 and CY 2021; the Department may decide this is no longer an issue.

Conclusion

HealthChoice is a mature managed care program and, overall, analysis of the CY 2021 electronic encounter data submitted indicates that MCOs continue to struggle with the changes in encounter editing logic, despite having had two years' lead time to prepare for the change. In many other respects, however, the Department and the MCOs have continued to strengthen gains made in recent years.

The most concerning issue arising in CY 2021 data is the continued increase in encounter rejections, largely due to the aforementioned change in encounter editing logic. Although the Department did not use encounter data from CY 2020 or CY 2021 for rate setting because of the COVID-19 health emergency, it should continue to work with the MCOs to resolve their provider enrollment issues, which will allow for more accurate rate setting in the future. The CY 2023 MCO Agreement includes language that penalties will be assessed for MCOs whose total number of rejected encounters exceeds 5% of their total encounters. This penalty is intended to improve the accuracy and quality of encounter data to better support rate setting and maintain

compliance with the federal rule strengthening requirements for data, transparency, and accountability.[18]

In general, the MCOs have similar distributions of rejections, types of encounters, types of visits, and outliers, except where specifically noted in the results. This analysis identified minor outliers that merit further monitoring and investigation, although the MCOs made progress. Hilltop generated recipient-level reports for Department staff to discuss with the MCOs. The Department should review the content standards and criteria for accuracy and completeness with the MCOs. Continued work with each MCO to address identified discrepancies will improve the quality and integrity of encounter submissions and increase the Department's ability to assess the efficiency and effectiveness of the Medicaid program.

Hilltop found that the volume of accepted encounters was generally consistent with MCO enrollment. Although the time dimension analysis showed some variation among MCOs regarding the timeliness of encounter submissions, most encounters were submitted within the eight-month maximum time frame allotted by the Department. The decrease in encounters submitted within one to two days that was observed for CY 2019 to CY 2020 rebounded in CY 2021, and it is now trending in a positive direction. Department staff should work with MCOs to continue improving the timeliness of encounter submissions, especially for MCOs with high rates of submissions occurring more than six months after the end date of service.

[18] Medicaid and CHIP Managed Care Final Rule. 81 Fed. Reg. 27,498 (May 6, 2016) (to be codified at 42 CFR Parts 431, 433, 438, 440, 457 and 495).

References

Centers for Medicare & Medicaid Services. (2012, September). *EQR protocol 4 validation of encounter data reported by the MCO*. https://www.medicaid.gov/medicaid/quality-of-care/downloads/eqr-protocol-4.pdf

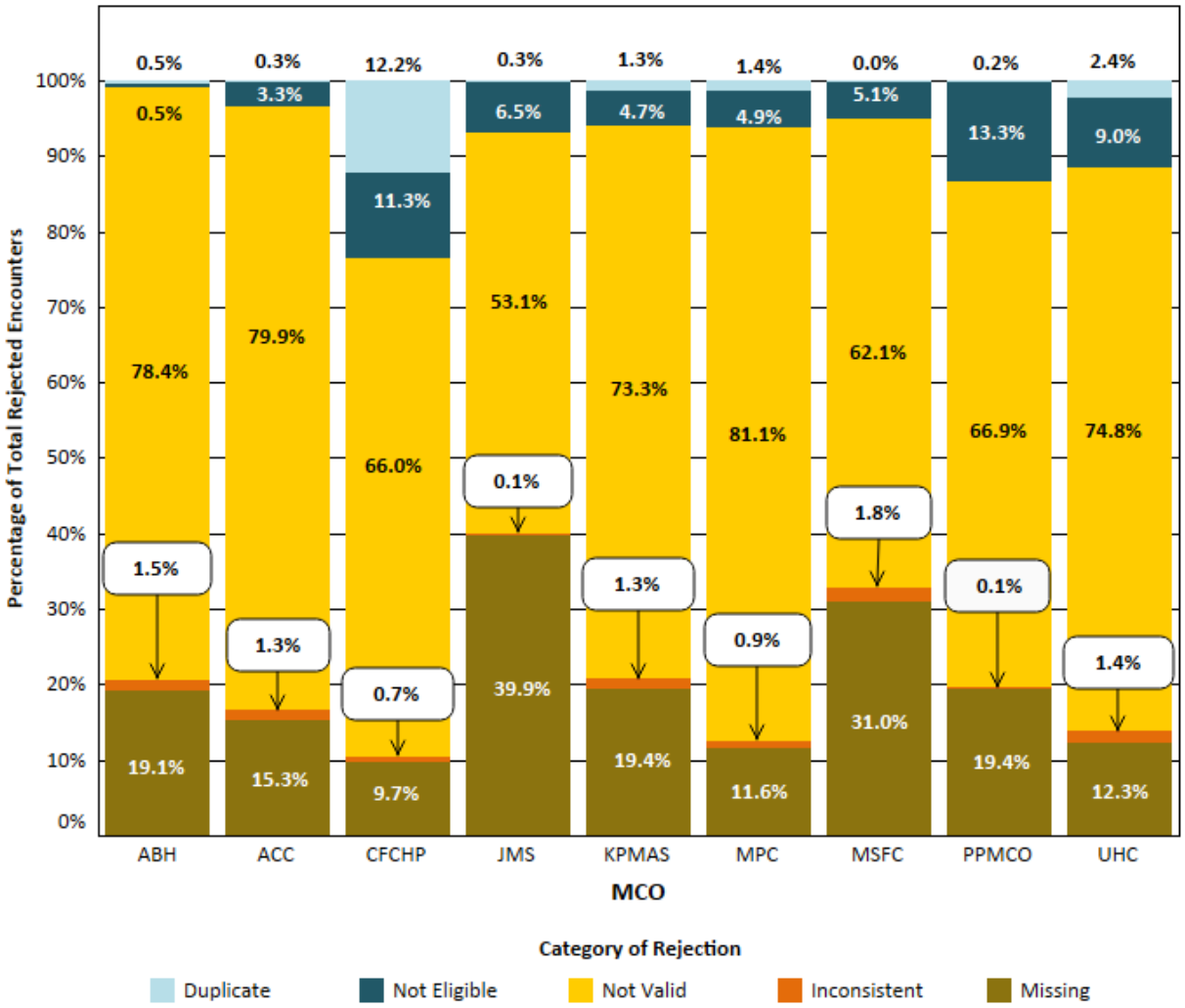
Centers for Medicare & Medicaid Services. (2019, October). *CMS external quality review (EQR) protocols*. https://www.medicaid.gov/medicaid/quality-of-care/downloads/2019-eqr-protocols.pdf

The Hilltop Institute. (2022, June 30). *Evaluation of the Maryland Medicaid HealthChoice program: CY 2016 to CY 2020*. Baltimore, MD: UMBC. https://health.maryland.gov/mmcp/healthchoice/Documents/HealthChoice%20Monitoring%20and%20Evaluation/HealthChoice%20Annual%20Evaluations/2022%20HealthChoice%20Evaluation%20(CY%202016-CY%202020).pdf

Maryland Department of Health. (2017, September 20). *Maryland Medical Assistance program: MCO transmittal No. 120*. https://mmcp.health.maryland.gov/MCOupdates/Documents/pt_04-18.pdf

Maryland Department of Health. (2018, September). *HealthChoice managed care organization agreement*. https://mmcp.health.maryland.gov/healthchoice/Documents/MCO%20Agreement%202019%20for%20CY%202019%20MCO%20file.pdf

Appendix A. Percentage of Encounters Rejected by EDI Rejection Category, by MCO, CY 2021



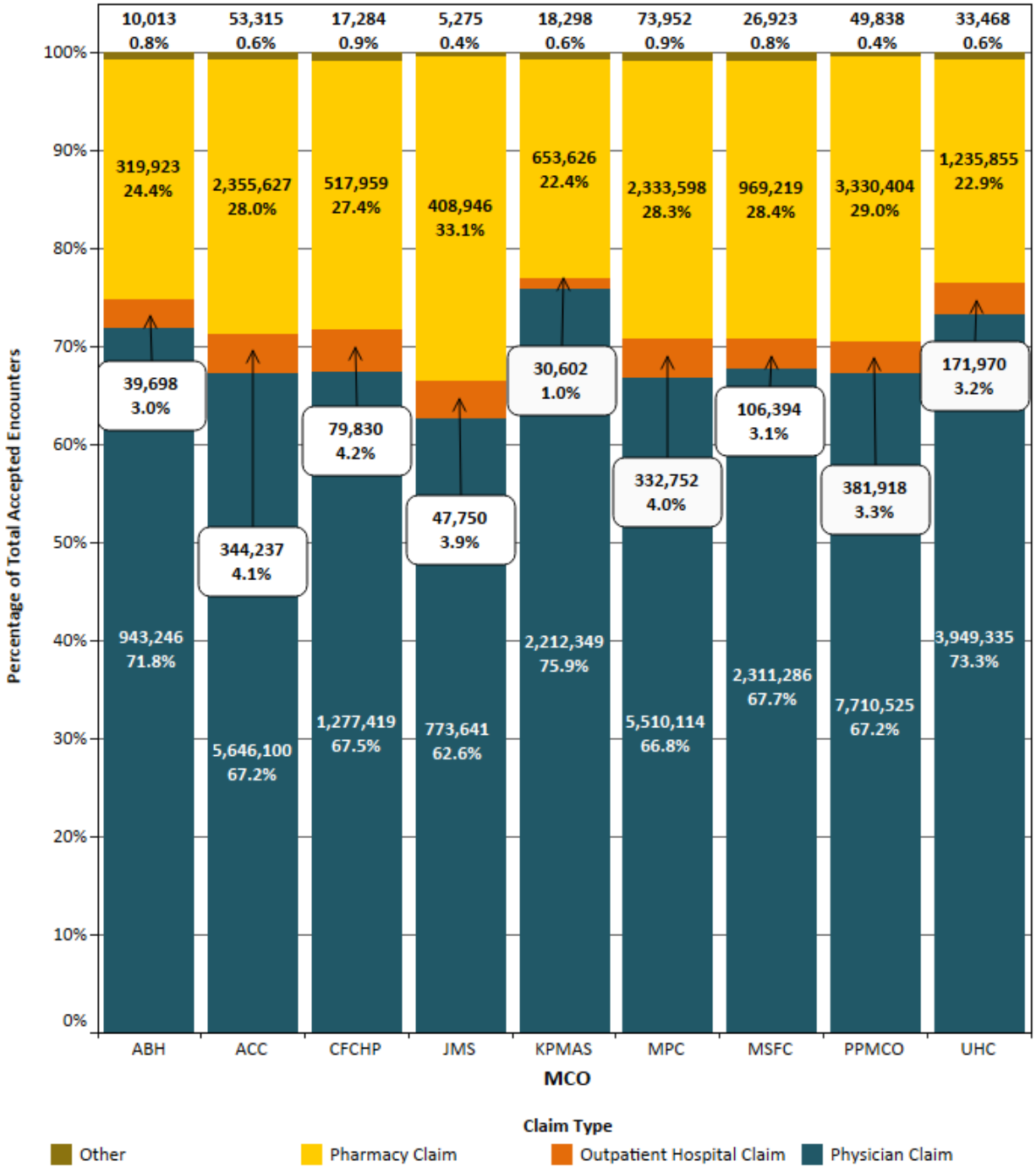
Appendix B. Rejection Codes, Errors, by Category with Provider-Related and Other Rejection Codes, CY 2021

Rejection Type	Category of Rejection	Last 3 of ICN	Error Description
Provider-related	Provider Enrollment	122	INVALID RENDERING PROV NUMBER
		412	REND PROV NOT ON FILE
		961	PAY-TO/FAC PROVIDER SUSPENDED
		962	RENDERING PROVIDER SUSPENDED
		963	PAY-TO/FAC PROV NOT ACT DOS
		964	REND PROV NOT ACT ON DOS
		965	BILL/PAY2 PROV NPI <> MA ID
		971	NPI NUMBER INVLD FR PYTOPROV
		975	NPI#NFDONPROVFLFRENREFFACLTY
		976	REND PROV NPI NO MATCH FFS ID
	Not Valid	000	00971NPI ON ENC NOT FOUND IN M
		100	00971NPI ON ENC NOT FOUND IN M
		200	00971NPI ON ENC NOT FOUND IN M
		300	00971NPI ON ENC NOT FOUND IN M
		367	PRO TYP RENDPROV N/ATH REP PRO
		400	00971NPI ON ENC NOT FOUND IN M
		500	00971NPI ON ENC NOT FOUND IN M
		531	SVC/REND PROV# N/9 NUM DIGITS
		600	00971NPI ON ENC NOT FOUND IN M
		700	00971NPI ON ENC NOT FOUND IN M
		800	00971NPI ON ENC NOT FOUND IN M
		900	00971NPI ON ENC NOT FOUND IN M
		922	INVLD DEFAULT PROVIDER NUMBER
		937	ATTEND PROV NOT IN MCO NET
		950	SUB PROV NOT ON MASTER FILE
		952	PERFORMING PROV N/ON NTW FILE
Other	Inconsistent	485	4TH DIAGNOSIS SEX CONFLICT
	Missing	172	PROCEDURE CODE CONTAINS BLANKS
		900	00430PROC/REV CODE NOT ON FILE
	Not Eligible	961	EXCEPTION 961
		962	EXCEPTION 962
		963	EXCEPTION 963
		964	EXCEPTION 964
		965	EXCEPTION 965
		975	EXCEPTION 975
	Not Valid	000	00435SEX RECIP N/VALD F/REPT P
		600	00435SEX RECIP N/VALD F/REPT P
		898	RECIP CLAIM OVERFLOW
		926	DENTAL CODE NOT VALID FOR DOS.

Appendix C. Top Three EDI Rejection Descriptions by Number of Rejected Encounters by MCO, CY 2021

MCO	Error Description	CY 2019	Error Description	CY 2020	Error Description	CY 2021
ABH	NPI ON ENC NOT FOUND IN MMIS	5,501	INVALID RENDERING PROV NUMBER	25,063	PROVIDER NUMBER NOT VALID	95,559
	FACILITY NUMBER NOT VALID	1,563	PROVIDER NUMBER NOT VALID	18,862	BILLING PROV NUM MISSING	81,186
	BILLING PROV NUM MISSING	1,406	NPI NUMBER INVLD FR PYTOPROV	13,486	INVALID RENDERING PROV NUMBER	75,487
ACC	RECIP NOT ENRLD W/RPT MCO DOS	172,573	PROVIDER NUMBER NOT VALID	296,648	PAY-TO/FAC PROV NOT ACT DOS	148,131
	PROC/REV CODE NOT COVD DOS	112,196	BILLING PROV NUM MISSING	201,778	PROVIDER NUMBER NOT VALID	103,159
	ORIG ICN FD ON HIST ALRD VOID	39,917	INVALID RENDERING PROV NUMBER	180,265	BILLING PROV NUM MISSING	85,744
CFCHP	RECIP NOT ENRLD W/RPT MCO DOS	63,729	ORIG ICN FD ON HIST ALRD VOID	439,756	INVALID RENDERING PROV NUMBER	71,050
	NPI ON ENC NOT FOUND IN MMIS	21,048	INVALID RENDERING PROV NUMBER	352,329	ORIG ICN FD ON HIST ALRD VOID	38,922
	PROVIDER NUMBER NOT VALID	15,354	REND PROV NOT ACT ON DOS	126,315	BILLING PROV NUM MISSING	30,250
JMS	PROC/REV CODE NOT COVD DOS	6,858	BILLING PROV NUM MISSING	35,694	BILLING PROV NUM MISSING	78,790
	FIRST DOS NOT STRUCTURED PROP	4,864	NPI NUMBER INVLD FR PYTOPROV	35,244	NPI NUMBER INVLD FR PYTOPROV	78,619
	RECIP NOT ENRLD W/RPT MCO DOS	4,605	RECIP NOT ENRLD W/RPT MCO DOS	5,422	PROC/REV CODE NOT COVD DOS	7,333
KPMAS	PROVIDER NUMBER NOT VALID	12,715	PROVIDER NUMBER NOT VALID	34,533	REND PROV NOT ACT ON DOS	65,188
	BILLING PROV NUM MISSING	12,129	INVALID RENDERING PROV NUMBER	15,026	NPI NUMBER INVLD FR PYTOPROV	50,865
	NPI ON ENC NOT FOUND IN MMIS	12,028	NPI NUMBER INVLD FR PYTOPROV	14,761	BILLING PROV NUM MISSING	49,696
MPC	PROC/REV CODE NOT COVD DOS	58,835	INVALID RENDERING PROV NUMBER	177,630	INVALID RENDERING PROV NUMBER	189,825
	NPI ON ENC NOT FOUND IN MMIS	34,609	PROVIDER NUMBER NOT VALID	146,992	PAY-TO/FAC PROV NOT ACT DOS	125,802
	NDC MISSING OR NOT VALID	19,509	BILLING PROV NUM MISSING	126,517	PROVIDER NUMBER NOT VALID	124,747
MSFC	NPI ON ENC NOT FOUND IN MMIS	29,565	BILLING PROV NUM MISSING	93,903	BILLING PROV NUM MISSING	47,996
	NDC MISSING OR NOT VALID	22,930	PROVIDER NUMBER NOT VALID	79,936	PAY-TO/FAC PROV NOT ACT DOS	30,791
	BILLING PROV NUM MISSING	15,595	NPI NUMBER INVLD FR PYTOPROV	73,427	PROVIDER NUMBER NOT VALID	30,182
PPMCO	RECIP NOT ENRLD W/RPT MCO DOS	159,725	PROVIDER NUMBER NOT VALID	259,111	PROVIDER NUMBER NOT VALID	199,364
	NDC MISSING OR NOT VALID	87,773	BILLING PROV NUM MISSING	243,694	BILLING PROV NUM MISSING	180,024
	PROC/REV CODE NOT COVD DOS	73,803	NPI NUMBER INVLD FR PYTOPROV	185,075	NPI NUMBER INVLD FR PYTOPROV	122,306
UHC	NPI ON ENC NOT FOUND IN MMIS	68,624	PROVIDER NUMBER NOT VALID	176,208	PROVIDER NUMBER NOT VALID	157,534
	RECIP NOT ENRLD W/RPT MCO DOS	67,836	INVALID RENDERING PROV NUMBER	143,864	PAY-TO/FAC PROV NOT ACT DOS	125,534
	PROVIDER NUMBER NOT VALID	51,013	BILLING PROV NUM MISSING	106,311	INVALID RENDERING PROV NUMBER	72,331

Appendix D. Number and Percentage of Accepted Encounters by Claim Type and MCO, CY 2021

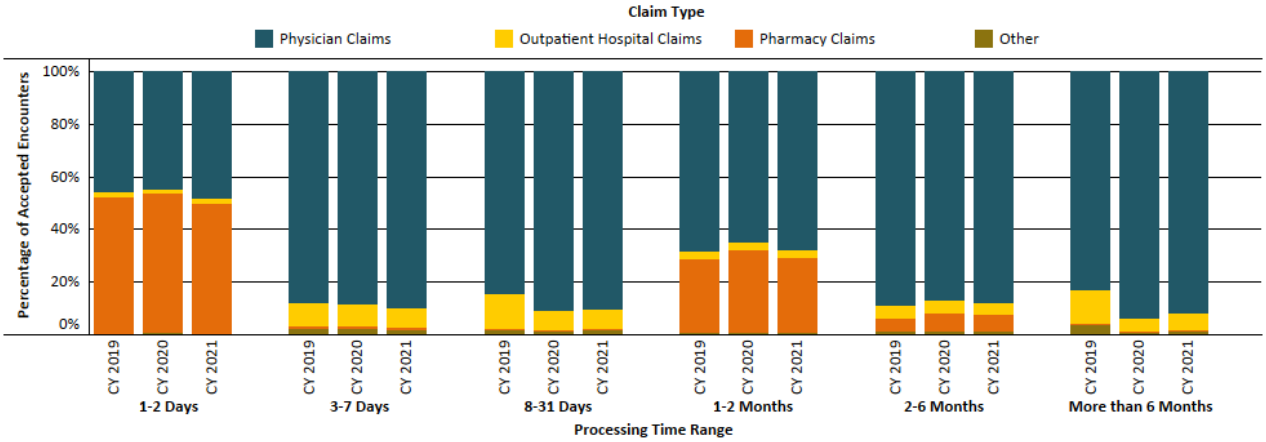


Note: "Other" is a combination of inpatient hospital claims, community-based services claims, and long-term care claims.

Appendix E. Number of Accepted Medical Encounters by MCO and Pay Category, CY 2021

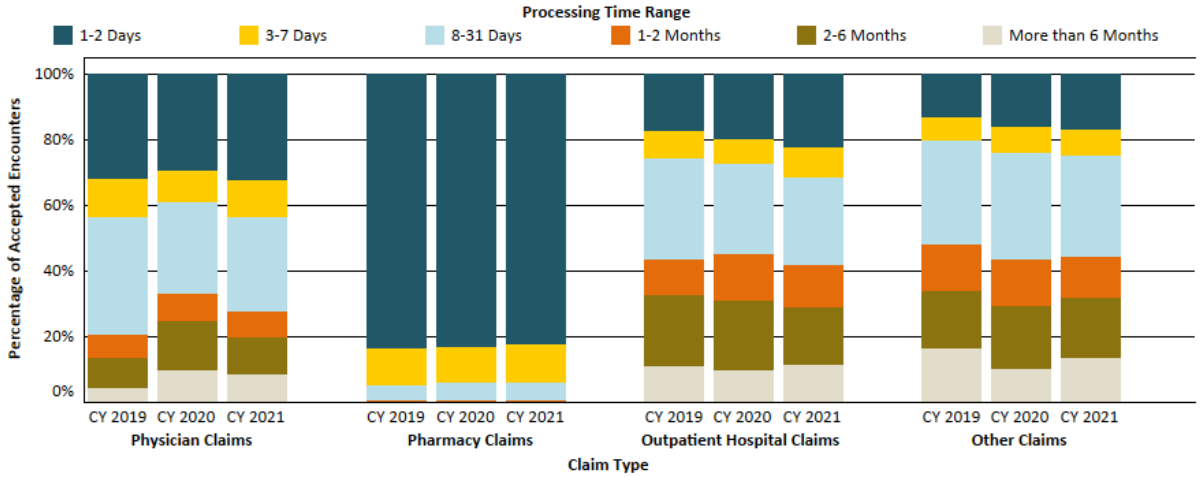
MCO	Populated			$0		
	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021
ABH	339,550	427,437	639,721	87,926	98,213	140,020
ACC	4,378,907	3,813,960	4,789,407	940,506	374,433	488,070
CFCHP	811,203	680,020	869,961	167,333	114,605	237,519
JMS	237,676	209,224	247,332	446,829	405,416	412,501
KPMAS	1,351,204	1,332,909	1,973,718	53,086	47,118	118,827
MPC	4,068,056	3,384,552	4,217,329	715,318	691,817	717,480
MSFC	1,083,334	936,837	1,117,795	935,022	904,435	1,074,314
PPMCO	5,385,156	4,381,528	5,531,945	1,268,342	970,711	1,341,220
UHC	2,442,476	2,132,482	2,622,037	673,823	585,247	814,233
Total	**20,097,562**	**17,298,949**	**22,009,245**	**5,288,185**	**4,191,995**	**5,344,184**

Appendix F. Distribution of Accepted Encounters by Processing Time and Claim Type, CY 2019–CY 2021



Processing Time Range	CY 2019				CY 2020				CY 2021			
	Physician Claims	Outpatient Hospital Claims	Pharmacy Claims	Other Claims	Physician Claims	Outpatient Hospital Claims	Pharmacy Claims	Other Claims	Physician Claims	Outpatient Hospital Claims	Pharmacy Claims	Other Claims
1-2 Days	46.2%	1.6%	52.0%	0.2%	44.9%	1.7%	53.2%	0.3%	48.7%	1.7%	49.4%	0.2%
	8,629,551	298,284	9,710,338	41,890	7,829,006	290,059	9,284,451	49,060	9,884,739	347,471	10,026,380	49,039
3-7 Days	68.4%	3.1%	28.0%	0.5%	65.2%	2.8%	31.4%	0.6%	68.2%	2.8%	28.5%	0.5%
	3,158,232	141,371	1,293,712	22,679	2,557,495	111,235	1,229,931	23,348	3,327,402	135,723	1,392,401	23,053
8-31 Days	89.1%	4.9%	5.0%	0.9%	87.4%	4.6%	6.9%	1.1%	88.3%	4.2%	6.6%	0.9%
	9,601,859	529,585	540,740	100,772	7,530,801	394,196	596,126	97,894	8,731,435	413,259	650,512	88,765
1-2 Months	88.3%	8.6%	1.0%	2.1%	88.6%	8.6%	1.0%	1.8%	90.2%	7.2%	1.2%	1.3%
	1,909,679	185,498	22,195	45,567	2,163,246	210,294	25,139	42,989	2,478,225	198,767	32,578	36,457
2-6 Months	85.0%	12.9%	0.2%	1.9%	91.4%	7.1%	0.2%	1.3%	90.9%	7.2%	0.6%	1.4%
	2,443,567	369,648	5,928	55,403	3,979,681	307,591	8,798	57,561	3,423,369	269,617	21,363	52,464
More than 6 Months	83.1%	13.2%	0.1%	3.7%	93.9%	5.0%	0.0%	1.1%	92.2%	6.3%	0.1%	1.4%
	1,151,151	182,520	740	51,134	2,591,238	136,730	569	30,503	2,488,840	170,314	1,923	38,588
Total	**66.4%**	**4.2%**	**28.6%**	**0.8%**	**67.4%**	**3.7%**	**28.2%**	**0.8%**	**68.5%**	**3.5%**	**27.4%**	**0.7%**
	26,894,039	**1,706,906**	**11,573,653**	**317,445**	**26,651,467**	**1,450,105**	**11,145,014**	**301,355**	**30,334,010**	**1,535,151**	**12,125,157**	**288,366**

Appendix G. Percentage of the Total Number of Accepted Encounters Submitted by Claim Type and Processing Time, CY 2019–CY 2021

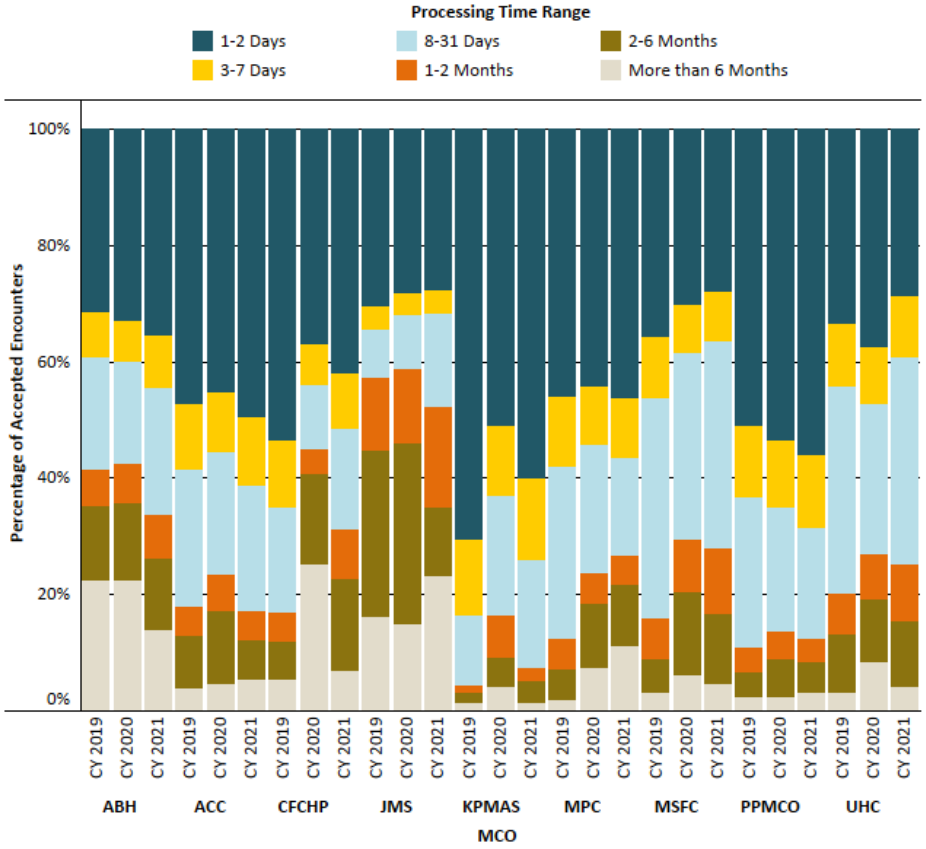


Processing Time Range	Physician Claims			Pharmacy Claims			Outpatient Hospital Claims			Other Claims		
	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021	CY 2019	CY 2020	CY 2021
1-2 Days	32.1%	29.4%	32.6%	83.9%	83.3%	82.7%	17.5%	20.0%	22.6%	13.2%	16.3%	17.0%
	8,629,551	7,829,006	9,884,739	9,710,338	9,284,451	10,026,380	298,284	290,059	347,471	41,890	49,060	49,039
3-7 Days	11.7%	9.6%	11.0%	11.2%	11.0%	11.5%	8.3%	7.7%	8.8%	7.1%	7.7%	8.0%
	3,158,232	2,557,495	3,327,402	1,293,712	1,229,931	1,392,401	141,371	111,235	135,723	22,679	23,348	23,053
8-31 Days	35.7%	28.3%	28.8%	4.7%	5.3%	5.4%	31.0%	27.2%	26.9%	31.7%	32.5%	30.8%
	9,601,859	7,530,801	8,731,435	540,740	596,126	650,512	529,585	394,196	413,259	100,772	97,894	88,765
1-2 Months	7.1%	8.1%	8.2%	0.2%	0.2%	0.3%	10.9%	14.5%	12.9%	14.4%	14.3%	12.6%
	1,909,679	2,163,246	2,478,225	22,195	25,139	32,578	185,498	210,294	198,767	45,567	42,989	36,457
2-6 Months	9.1%	14.9%	11.3%	0.1%	0.1%	0.2%	21.7%	21.2%	17.6%	17.5%	19.1%	18.2%
	2,443,567	3,979,681	3,423,369	5,928	8,798	21,363	369,648	307,591	269,617	55,403	57,561	52,464
More than 6 Months	4.3%	9.7%	8.2%	0.0%	0.0%	0.0%	10.7%	9.4%	11.1%	16.1%	10.1%	13.4%
	1,151,151	2,591,238	2,488,840	740	569	1,923	182,520	136,730	170,314	51,134	30,503	38,588
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
	26,894,039	**26,651,467**	**30,334,010**	**11,573,653**	**11,145,014**	**12,125,157**	**1,706,906**	**1,450,105**	**1,535,151**	**317,445**	**301,355**	**288,366**

Appendix H. Distribution of Accepted Encounters Submitted by MCO and Processing Time, CY 2021

Processing Time Range	ABH	ACC	CFCHP	JMS	KPMAS	MPC	MSFC	PPMCO	UHC	Total
1-2 Days	35.7%	49.5%	42.2%	27.9%	60.0%	46.4%	28.0%	56.2%	28.8%	**45.9%**
	468,827	4,158,542	798,960	344,245	1,750,101	3,829,605	956,374	6,447,735	1,553,240	**20,307,629**
3-7 Days	8.9%	11.9%	9.3%	4.1%	14.0%	10.2%	8.6%	12.5%	10.4%	**11.0%**
	117,417	997,168	176,805	50,168	409,320	840,167	293,510	1,431,366	562,658	**4,878,579**
8-31 Days	21.7%	21.6%	17.4%	15.9%	18.8%	16.9%	35.5%	19.0%	35.7%	**22.3%**
	285,143	1,810,286	329,146	196,566	546,732	1,397,073	1,213,283	2,178,656	1,927,086	**9,883,971**
1-2 Months	7.7%	5.0%	8.4%	17.4%	2.1%	4.9%	11.3%	4.2%	9.7%	**6.2%**
	100,563	421,265	159,145	215,003	61,912	403,098	386,193	478,597	520,251	**2,746,027**
2-6 Months	12.1%	6.7%	15.8%	11.8%	3.8%	10.6%	12.1%	5.2%	11.2%	**8.5%**
	158,770	560,784	299,639	145,685	110,203	876,991	414,465	595,251	605,025	**3,766,813**
6-7 Months	1.7%	0.6%	1.4%	2.6%	0.5%	2.0%	1.7%	0.6%	1.2%	**1.1%**
	22,950	54,163	27,252	31,511	13,789	163,097	57,091	66,999	65,481	**502,333**
7-12 Months	8.1%	2.8%	4.3%	15.5%	0.7%	7.3%	2.2%	1.5%	2.5%	**3.6%**
	106,094	232,689	81,658	191,562	20,339	599,571	76,196	170,480	135,700	**1,614,289**
More than 1 Year	4.0%	2.0%	1.1%	4.9%	0.1%	1.7%	0.5%	0.9%	0.4%	**1.3%**
	53,116	164,382	19,887	60,872	2,479	140,809	16,710	103,601	21,187	**583,043**
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
	1,312,880	**8,399,279**	**1,892,492**	**1,235,612**	**2,914,875**	**8,250,411**	**3,413,822**	**11,472,685**	**5,390,628**	**44,282,684**

Appendix I. Percentage of Accepted Encounters Submitted by MCO and Processing Time, CY 2019–CY 2021



MCO	Year	1-2 Days	3-7 Days	8-31 Days	1-2 Months	2-6 Months	More than 6 Months
ABH	CY 2019	31.6%	7.7%	19.3%	6.4%	12.6%	22.4%
	CY 2020	33.2%	7.0%	17.4%	6.8%	13.3%	22.3%
	CY 2021	35.7%	8.9%	21.7%	7.7%	12.1%	13.9%
ACC	CY 2019	47.3%	11.5%	23.5%	4.9%	9.1%	3.8%
	CY 2020	45.4%	10.3%	21.0%	6.2%	12.5%	4.6%
	CY 2021	49.5%	11.9%	21.6%	5.0%	6.7%	5.4%
CFCHP	CY 2019	53.6%	11.6%	18.0%	4.9%	6.7%	5.1%
	CY 2020	37.1%	7.1%	10.9%	4.3%	15.6%	24.9%
	CY 2021	42.2%	9.3%	17.4%	8.4%	15.8%	6.8%
JMS	CY 2019	30.6%	4.0%	8.1%	12.6%	28.7%	16.0%
	CY 2020	28.3%	3.7%	9.4%	12.7%	31.0%	14.8%
	CY 2021	27.9%	4.1%	15.9%	17.4%	11.8%	23.0%
KPMAS	CY 2019	70.7%	13.0%	12.1%	1.2%	1.7%	1.3%
	CY 2020	51.1%	12.1%	20.5%	7.2%	5.1%	4.0%
	CY 2021	60.0%	14.0%	18.8%	2.1%	3.8%	1.3%
MPC	CY 2019	46.2%	11.9%	29.6%	5.3%	5.3%	1.6%
	CY 2020	44.4%	10.0%	22.1%	5.1%	11.0%	7.4%
	CY 2021	46.4%	10.2%	16.9%	4.9%	10.6%	11.0%
MSFC	CY 2019	35.8%	10.6%	37.7%	7.1%	5.8%	2.9%
	CY 2020	30.4%	8.2%	32.0%	9.2%	14.1%	6.1%
	CY 2021	28.0%	8.6%	35.5%	11.3%	12.1%	4.4%
PPMCO	CY 2019	51.2%	12.3%	25.7%	4.3%	4.1%	2.4%
	CY 2020	53.7%	11.5%	21.4%	4.7%	6.5%	2.3%
	CY 2021	56.2%	12.5%	19.0%	4.2%	5.2%	3.0%
UHC	CY 2019	33.7%	10.7%	35.6%	7.0%	10.1%	2.9%
	CY 2020	37.7%	9.7%	25.9%	7.6%	10.9%	8.2%
	CY 2021	28.8%	10.4%	35.7%	9.7%	11.2%	4.1%

Appendix J. Delivery Codes

Delivery services were identified as any encounter that had one of the ICD-10 diagnosis codes listed in the table below during CY 2019 through CY 2021. In CY 2020, Hilltop's definition for delivery included an additional ICD-10 diagnosis code, O60.1x. Codes O64.x, O65.x, O66.x, and O69.x were expanded to include all possible sub-codes. (Note in previous analyses, only certain sub-codes were used.) The CY 2019 analysis should not be compared with what was reported in CY 2020 and CY 2021.

Code Type	Codes Used in Analysis
ICD-10 Diagnosis Codes	O60.1x, O60.2x, O61.x, O64.x, O65.x, O66.x, O67.x, O68*, O69.x, O70.x, O71.x, O72.x, O73.x, O74.x, O75.x, O76*, O77.x, O80*, O82*, Z37.x

*Only the three-character code listed in the table (e.g., 068, 076, and O80) was included as a valid diagnosis. For all other diagnosis codes, the analysis included all other codes that began with the diagnosis code listed in the table (e.g., O61.x), where x equals any number of digits after the decimal. For example, O61.x, the "x" can represent any number of digits after the decimal (e.g., 061.1 or 061.14) or no digits after the decimal (e.g., O61).

Appendix K. Dementia Codes

Dementia-related services in CY 2021 were identified as any encounter that had one of the ICD-10 diagnosis codes listed in the table below. These codes indicate services for Alzheimer's disease and other types of dementia. In CY 2020, Hilltop's definition for dementia no longer included ICD-10 diagnosis code F00, and the CY 2019 analysis should not be compared with what was reported in CY 2020 and CY 2021.

Code Type	Codes Used in Analysis
ICD-10 Diagnosis Codes	F01, F02, F03, G30, G31

*The three-character codes can include any number of additional digits.

The Hilltop Institute

UMBC

Sondheim Hall, 3rd Floor
1000 Hilltop Circle
Baltimore, MD 21250
410-455-6854
www.hilltopinstitute.org