



MARYLAND
Department of Health

HealthChoice

Maryland's Medicaid Managed Care Program

Qlarant 

**Medicaid Managed Care
Organization**

**Encounter Data Validation
Final Report**

Calendar Year 2017

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CY 2017 Encounter Data Report

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CY 2017 Encounter Data Validation Report

Introduction

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 use encounter data for managed care program oversight. Encounter data can provide valuable information about distinct services provided to enrollees that can be used to assess and review quality, monitor program integrity, and determine capitation rates. 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.

In compliance with the BBA, the Maryland Department of Health (MDH) contracts with Qlarant to serve as the EQRO for the HealthChoice Program. The EDV review was conducted according to the CMS EDV protocol, *Validation of Encounter Data Reported by the MCO, Protocol 4, Version 2.0, September 2012*. Qlarant conducted EDV for calendar year (CY) 2017, encompassing January 1, 2017 through December 31, 2017 for all nine HealthChoice MCOs:

- Aetna Better Health of Maryland (ABH)
- AMERIGROUP Community Care (ACC)
- 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 Community Plan (UHC)
- University of Maryland Health Partners (UMHP)

Purpose

The purpose of EDV is to assess the completeness and accuracy of encounter data submitted by MCOs to the State. Encounter data are the electronic records of services provided to MCO enrollees by both institutional and practitioner providers (regardless of how the providers were paid), when the services would traditionally be a billable service under fee-for-service (FFS) reimbursement systems. Encounter data provide substantially the same type of information that is found on claim forms (e.g., UB-04 or CMS 1500), but not necessarily in the same format. States use encounter data to assess and improve quality, monitor program integrity, and determine capitation payment rates.

Encounter Data Validation Process

The CMS approach to EDV includes the following three core activities:

- Assessment of health plan information system (IS).
- Analysis of health plan electronic encounter data for accuracy and completeness.
- Review of medical records for additional confirmation of findings.

The EDV protocol makes the following assumptions:

- An encounter refers to the electronic record of a service provided to a health plan enrollee by both institutional and non-institutional providers.
- The State specifies the types of encounters (e.g., physician, hospital, dental, vision, laboratory, etc.) for which encounter data are to be provided. In addition, the type of data selected for review (inpatient, outpatient, etc.) is directly proportionate to the total percent of encounter types per calendar year.
- Encounter data is considered “complete” when the data can be used to describe the majority of services that have been provided to Medicaid beneficiaries who are health plan enrollees. HealthChoice required managed care organizations (MCOs) to submit CY 2017 encounter data by June 2018.
- Encounter data completeness and accuracy requires continued monitoring and improvement. States need to develop encounter data standards and monitor for accuracy and completeness. Ultimately, it is the State that establishes standards for encounter data accuracy and completeness.

Qlarant completed the following five sequential EDV activities:

- Activity 1: Review of State requirements for collection and submission of encounter data.
 - Activity 2: Review of health plan’s capability to produce accurate and complete encounter data.
 - Activity 3: Analysis of health plan’s electronic encounter data for accuracy and completeness.*
 - Activity 4: Review of medical records for additional confirmation of findings.
 - Activity 5: Analysis and submission of findings.
- * MDH elected to have Activity 3 completed by The Hilltop Institute, University of Maryland Baltimore County.

A description of how each sequential EDV activity was conducted, along with detailed results, follow.

Activity 1: Review of State Requirements

Qlarant reviewed information regarding Department of HealthChoice Quality Assurance’s (DQA’s) requirements for collecting and submitting encounter data. DQA provided Qlarant with:

- DQA’s requirements for collection and submission of encounter data by MCOs (specifications in the contracts between the State and the MCO)
- Data submission format requirements for MCO use
- Requirements regarding the types of encounters that must be validated
- DQA’s data dictionary
- A description of the information flow from the MCO to the State, including the role of any contractors or data intermediaries
- DQA’s standards for encounter data completeness and accuracy
- A list and description of edit checks built into DQA’s Medicaid Management Information System (MMIS) that identifies how the system treats data that fails edit checks
- Requirements regarding time frames for data submission
- Prior year’s EQR report on validating encounter data (if available)
- Any other information relevant to encounter data validation

Results of Activity 1: Review of State Requirements

MDH sets forth the requirements for collection and submission of encounter data by MCOs in Appendix E of the MCO's contract. It includes all of the COMAR provisions applicable to MCOs, including regulations concerning encounter data. The regulations applying to encounters in CY 2017 are noted in Table 1.

Table 1. CY 2017 COMAR Requirements for Encounter Data

COMAR	Requirement
10.09.64.11B	A description of the applicant's operational procedures for generating service-specific encounter data.
10.09.64.11C	Evidence of the applicant's ability to report, on a monthly basis, service-specific encounter data in UB04 or CMS1500 format.
10.09.65.03A(1)	An MCO shall have a continuous, systematic program designed to monitor, measure, evaluate, and improve the quality of health care services delivered to enrollees including individuals with special health care needs. At a minimum, the MCO shall comply with all applicable federal and state laws and regulations.
10.09.65.03B	An MCO shall participate in all quality assessment activities required by MDH in order to determine if the MCO is providing medically necessary enrollee health care.
10.09.65.15B	<p>Encounter Data</p> <ul style="list-style-type: none"> ○ An MCO shall submit encounter data reflecting 100% of provider-enrollee encounters, in CMS1500 or UB04 format or an alternative format previously approved by MDH. ○ An MCO may use alternative formats including: <ul style="list-style-type: none"> ▪ ASC X12N 837 and NCPDP formats; and ▪ ASC X12N 835 format, as appropriate. ○ An MCO 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. ○ An MCO shall report encounter data within 60 calendar days after receipt of the claim from the provider. ○ An MCO shall submit encounter data utilizing a secure on-line data transfer system.

The electronic data interchange, or EDI, is the automated system that includes rules dictating the transfer of data from each MCO to MDH. MDH uses the HIPAA EDI transaction sets and standards for data submission of 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 receives encounter data from the MCOs in a format that is HIPAA 837 compliant—via an EDI system—and then executes validations to generate exception reports that are in both HIPAA 835 compliant file format, as well as an MDH summarized version known to MDH as the “8ER” report.

MDH processes encounters through the Electronic Data Interchange Translator Processing System (EDITPS). Encounters are first edited for completeness and accuracy using the HIPAA EDI implementation guidelines. Successfully processed encounters are mapped for further code validation based on MDH requirements that identify the criteria each encounter must meet in order to be accepted into MMIS.

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 secure file transfer protocol (SFTP). Each MCO may have contractors or data intermediaries that submit encounters.

Although MDH does not maintain a list and description of the edit checks, the system treats encounters that fail the MMIS edit checks in the following manner:

1. All denied and rejected encounters are reported back with the MMIS Explanation of Benefit (EOB) code and description in an EDI error report known as the 8ER file.
2. The 835 file contains all paid and denied encounters. The denied encounters use the HIPAA EDI Claim Adjustment Reason Code (CARC) and Remittance Advice Remark Codes (RARC) codes to report back denied reason codes. Encounters marked as suspended are not included in the 835.
3. In addition, a MMIS summary report is generated and sent to each MCO.

MDH sets forth requirements regarding time frames for data submission in COMAR 10.09.65.15B (4), which states 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.

Activity 2: Review of MCO's Ability to Produce Accurate and Complete Encounter Data

Qlarant assessed each MCO's capability for collecting accurate and complete encounter data. Prior to examining data produced by the MCO's information system, a determination must be made as to whether the MCO's information system is likely to capture complete and accurate encounter data. This was completed through two steps:

1. Review of the MCO's Information Systems Capabilities Assessment (ISCA).
2. Interview MCO personnel.

Review of the ISCA. Qlarant reviewed the MCO's ISCA to determine where the MCO's information systems may be vulnerable to incomplete or inaccurate data capture, integration, storage, or reporting. MCOs were provided a crosswalk between the HEDIS Roadmap completed as part of the HEDIS Compliance Audit and the ISCA required as part of the EDV. Qlarant reviewed the ISCA findings for the following:

1. Information Systems: Data Processing and Procedures
 - a. Data Base Management System (DBMS) Type
 - b. Programming language
 - c. Process for updating the program to meet changes in State requirements
2. Claims/Encounter Processing
 - a. Overview of the processing of encounter data submissions
 - b. Completeness of the data submitted
 - c. Policies/procedures for audits and edits

3. Claims/Encounter System Demonstration
 - a. Processes for merging and/or transfer of data
 - b. Processes for encounter data handling, logging and processes for adjudication
 - c. Audits performed to assure the quality and accuracy of the information and timeliness of processing
 - d. Maintenance and updating of provider data
4. Enrollment Data
 - a. Verification of claims/encounter data
 - b. Frequency of information updates
 - c. Management of enrollment/disenrollment information

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.

Any issues that may contribute to inaccurate or incomplete encounter data were identified. Examples of issues include MCO use of non-standard codes or forms, inadequate data edits, or the lack of provider contractual requirements that tie payment to data submission. Based on the ISCA review, Qlarant noted all concerns about the encounter data for each encounter type listed in the Acceptable Error Rates Specification Form. MCO staff should follow-up on any identified issues.

Results of Activity 2: Review of MCO's Ability to Produce Accurate and Complete Encounter Data

Qlarant completed an assessment of each HealthChoice MCO's ISCA. Overall results indicate that:

- All MCOs appear to have well-managed systems and processes.
- All MCOs use only standard forms and coding schemes.
- 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.
- Five MCOs (ACC, KPMAS, PPMCO, UHC, and UMHP) process claims and encounters with in-house systems while the remaining three MCOs (JMS, MSFC, and MPC) contract with third party administrators for processing claims and encounters.
- The HealthChoice MCO average auto-adjudication was 82.23%, with MCO-specific rates ranging from 56% to 94%.
- The HealthChoice MCO average rate for processing clean claims in 30 days was 98.5%, with MCO-specific rates ranging from 90.41% to 100%.
- On average, the HealthChoice MCOs received 87.74% of professional claims and 87.95% of facility claims electronically.

MCO-specific results pertaining to the ISCA Assessment were provided to MDH and each MCO.

Activity 3: Analysis of MCO's Electronic Encounter Data

MDH has an interagency governmental agreement with The Hilltop Institute of University of Maryland Baltimore County (Hilltop) to serve as the data warehouse for its encounters. Therefore, Hilltop completed Activity 3 of the EDV.

Activity 3 contains the following four required analyses:

1. Develop a data quality test plan
2. Verify the integrity of the MCOs' encounter data files
3. Generate and review analytic reports
4. Compare findings to state-identified standards

Step 1. Develop a Data Quality Test Plan

The development of a data quality test plan incorporates information gathered in Activity 1. Specifically, the "plan should account for the edits built into the State's data system so that it pursues data problems that the State may have overlooked or allowed" (Centers for Medicare & Medicaid Services, 2012, p. 7). In August 2018, Hilltop obtained pertinent information from MDH regarding the process and procedure used to receive, evaluate, and report on the validity of MCO encounter data. Hilltop interviewed Department staff to document state processes for accepting and validating encounter data. Topics discussed during this meeting included but were not limited to the following:

- MCO submission of encounter data, the upload of data to MDH's mainframe for processing and validation checks, and the upload of accepted data to MMIS2
- Encounter data fields validated through the EDI process, such as validation of recipient ID, sex, age, diagnostic codes, and procedure codes
- MDH processes incoming data from the MCOs within 1 to 2 business days
- Error code reports generated for MCOs by the validation process
- As a result of the August 2018 meeting, the EDI error report data for CY 2017 (the 8ER report) was transmitted to Hilltop for analysis and included the number and types of errors for encounter submissions for each MCO. Analysis of the frequency of different error types and rejection categories is included in this report. The 8ER error descriptions were used to provide a comprehensive overview of the validation process.

Step 2. Verify the Integrity of the MCOs' Encounter Data Files

Hilltop compared the number of participants to total encounters, assessing whether the distribution is similar across MCOs. The percentage of participants with encounters was also considered for inpatient visits, observation stays, and emergency department (ED) visits. Selected fields not verified by MDH during the EDI process in Step 1 were assessed for completeness and accuracy. Finally, the MCO provider number was evaluated to ensure that encounters received and accepted are only for MCOs currently active within the HealthChoice program. Encounters received and accepted with MCO provider numbers not active within the HealthChoice program were not included in the analysis. Because Aetna joined the HealthChoice program in late 2017, its encounters were not included in the analysis due to limited data.

Step 3. Generate and Review Analytic Reports

The analysis addressing volume and consistency of encounter data is focused in four primary areas: time, provider, service type, and the age and sex appropriateness of diagnostic and procedure codes. MDH helped identify several specific analyses for each primary area related to policy interests.

Analysis of encounter data by time dimensions allows for an evaluation of consistency. Trends in encounter submission and dates of service are included. Hilltop completed a comparison of time dimension data between MCOs to determine whether MCOs process data within similar time frames. Provider analysis evaluates trends in provider services and seeks to determine any fluctuation in visits during CY 2017. Provider analysis is focused on primary care visits, specifically the number of participants who had a visit within the year.

The service type analysis concentrated on three main service areas: inpatient hospitalizations, observation stays, and ED visits. The CY 2017 analysis provides baseline data and allows MDH to identify any future changes in utilization patterns for these types of services.

Finally, Hilltop analyzed age and sex appropriateness. The age analysis includes evaluation of enrollees over age 66 with a diagnosis related to pregnancy or dementia. There is a generally accepted age range for these two conditions. Participants over the age of 65 are ineligible for HealthChoice, so any encounters received for this population were noted, which may indicate a participant date of birth issue. Analysis of a sex-appropriate diagnosis was conducted in terms of pregnancy.

Step 4. Compare Findings to State-Identified Standards

In both Steps 2 and 3, Hilltop performed the analyses by MCO, allowing benchmarking from MCO to MCO. The analyses compared outlier data with overall trends, and the results are presented along with each analysis.

Results of Activity 3: Analysis of MCO's Electronic Encounter Data**Step 1. Develop a Data Quality Test Plan**

MDH initiates the evaluation of MCO encounter data with a series of validation checks on the encounter data received through the EDI. These validation checks include analysis of critical data fields, consistency between data points, duplication, and validity of data received. Encounters failing to meet these standards are reported back to the MCO for possible correction and re-submission. Both the 835 report and the 8ER report are returned to the MCOs.

MDH provided the CY 2017 8ER reports to Hilltop for analysis of encounters failing initial EDI edits. Table 2 provides an overview of the 8ER data. Rejected encounters were classified into five categories: duplicates, inconsistent data, missing data, participant not eligible for service, and value not valid for the field.

Table 2. Distribution of Rejected Encounter Submissions by Category, CY 2017

Category for Rejection	Number of Rejected	Percentage of All Rejected Encounters
Missing	677,840	36.8%
Not Eligible	558,483	30.3%
Not Valid	276,763	15.0%
Inconsistent	244,463	13.3%
Duplicate	86,127	4.7%
Total	1,843,676	100.0%

The primary reason encounters were not accepted is due to missing data (36.8%) and participant not being eligible (30.3%), followed by invalid data (15.0%). Checks on critical fields for missing or invalid data include provider number, units of service, drug number, drug quantity, revenue code, procedure code, and diagnosis code. Eligibility issues refer to a participant not being eligible for MCO enrollment at the time of the service. Inconsistent data was similar in frequency to invalid data (13.3%). Inconsistent data refers to an inconsistency between two data points. Examples of inconsistency include discrepancies between dates, inconsistencies between diagnosis and age or sex, and inconsistencies between original and re-submitted encounters. Duplicate data accounts for approximately 4.7% of rejected encounters. The most common duplicates identified on encounters were encounter numbers and drug codes.

Evaluating the rejected encounters by MCO is useful for assessing trends, as well as identifying issues particular to each MCO. This type of analysis will allow MDH to focus on working with each MCO on any identified issues. Table 3 illustrates the distribution of rejected and accepted encounter submissions across MCOs.

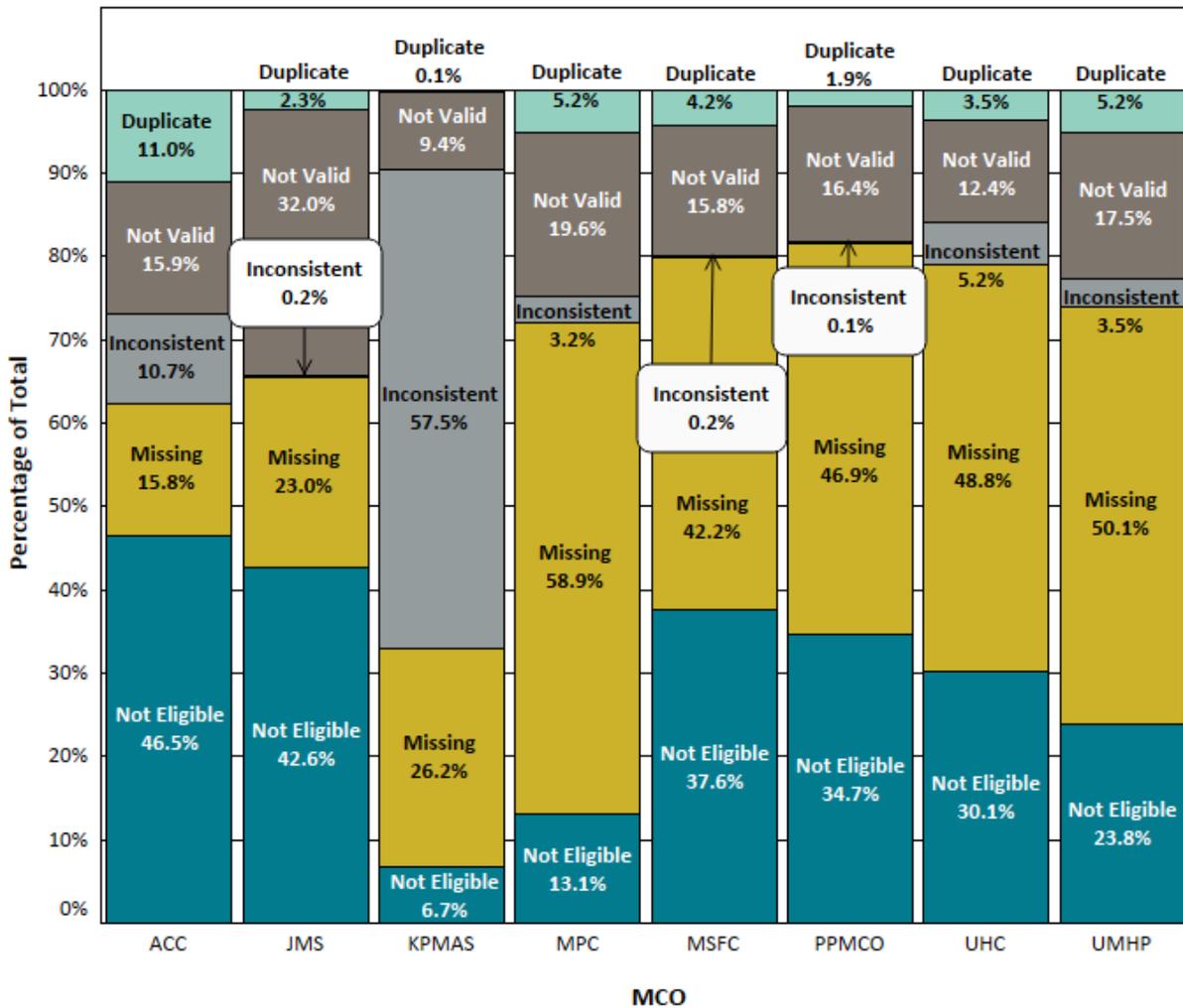
Table 3. Distribution of Rejected and Accepted Encounter Submissions by MCO, CY 2017

	ACC	JMS	KPMAS	MPC	MSFC	PPMCO	UHC	UMHP	Total
Number of Rejected	439,491	27,402	302,080	138,900	150,129	389,589	280,033	116,052	1,843,676
Percentage of All Rejected	23.8%	1.5%	16.4%	7.5%	8.1%	21.1%	15.2%	6.3%	100.0%
Number of Accepted Encounters	7,972,430	1,163,215	1,807,238	7,301,579	3,151,760	10,422,589	5,444,030	1,387,424	38,650,265
Percentage of All Accepted Encounters	20.6%	3.0%	4.7%	18.9%	8.2%	27.0%	14.1%	3.6%	100.0%

ACC and PPMCO each account for over 20% of the total rejected encounters. Both KPMAS and UHC have around 15% of the rejected encounters (16.4% and 15.2%, respectively). MSFC, MPC, UMHP, and JMS have less than 10% of rejected encounters (8.1%, 7.5%, 6.3%, and 1.5%, respectively). This distribution is reasonable given the MCO accepted encounter distribution as presented in Table 2. However, KPMAS accounts for 16.4% of rejected encounters but only 4.7% of accepted encounters. As KPMAS is a newer MCO compared to other HealthChoice plans, some of these issues may have been resolved in 2018. MDH should continue to monitor 8ER reports to identify trends and encourage MCO data quality.

Although the analysis of the EDI encounter rejection reason reveals variation between MCOs, some overall trends can be identified as displayed in Figure 1.

Figure 1. Percentage of Encounters Rejected by EDI per Rejection Category by MCO, CY 2017



Duplicate rejections are small across all MCOs. ACC, JMS, MPC, MSFC, PPMCO, UHC, and UMHP all display similar proportions across the categories for rejection. KPMAS primarily had encounters rejected for inconsistent data (57.5%) or missing data (26.2%). MPC encounters were rejected mostly due to missing data (58.9%) or data not being valid (19.6%). MDH should work with each MCO to address their top errors.

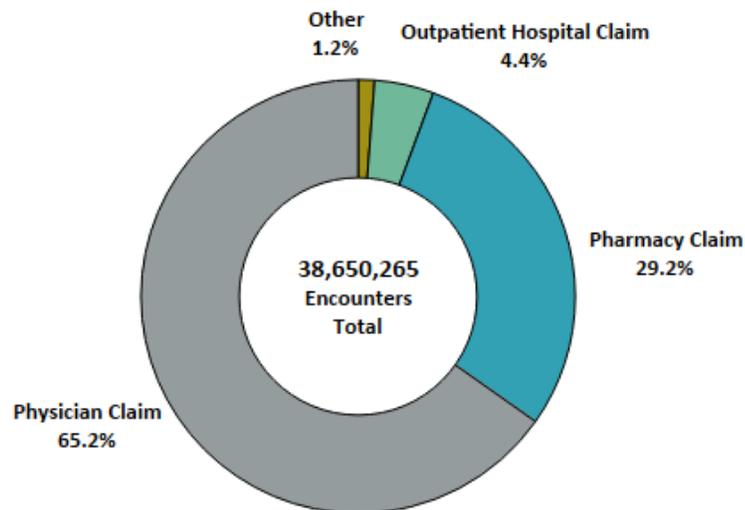
Step 2. Verify the Integrity of the MCOs' Encounter Data Files

During CY 2017, the MCOs submitted a total of 38 million accepted encounters. While the 8ER EDI data received do not include date of service, it is possible to estimate the total number of encounters submitted during CY 2017 by adding the accepted encounters to the rejected encounters in the 8ER file. Thus, roughly 40 million encounters were submitted during CY 2017, and approximately 95% of these were accepted into MMIS2.

Hilltop receives a monthly copy of all encounters accepted by MMIS2. Upon receipt of the encounters from MMIS2, several validation assessments of the data are performed, including whether there is an invalid end date of service or other fatal errors. These files are removed before being added to Hilltop's data warehouse. A total of 543 encounters were identified with an MCO provider number of "000000000" or "ACC PAC" and removed from subsequent analysis.

The total accepted encounters by claim type were reviewed. The percentage of accepted encounters submitted by claim type for CY 2017 is displayed in Figure 2.

Figure 2. Percentage of Accepted Encounter Submissions by Claim Type, CY 2017



Most encounters are from physician encounters, which include home health services (65.2%), as shown in Figure 2. Pharmacy encounters and outpatient hospital encounters are the other two largest types of accepted encounters (29.2% and 4.4%, respectively). Other encounters (1.2%) include inpatient hospital stays, community-based services, long-term care services, and dental services. Table 4 provides the percentage and number of claims by type for each MCO in CY 2017.

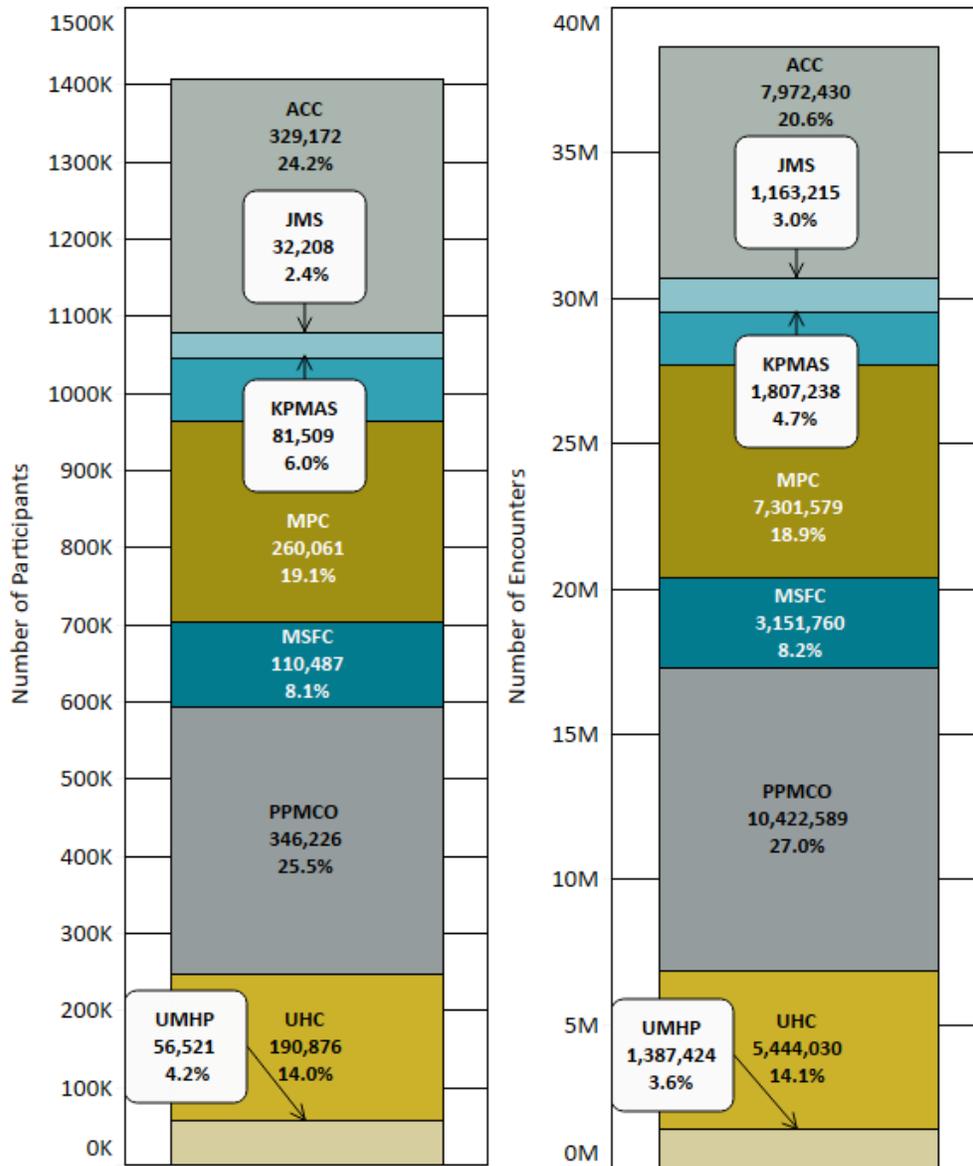
Table 4. Percentage and Count of Claim Type by MCO, CY 2017

MCO	Physician Claim	Pharmacy Claim	Outpatient Hospital Claim	Other	Total
AmeriGroup	67.2% 5,358,249	27.2% 2,165,826	4.8% 379,686	0.9% 68,669	100.0% 7,972,430
JAI Medical Systems	58.4% 679,329	36.6% 426,312	4.5% 52,804	0.4% 4,770	100.0% 1,163,215
Kaiser	71.8% 1,297,859	23.2% 418,584	1.6% 28,151	3.5% 62,644	100.0% 1,807,238
Maryland Physicians Care	63.2% 4,611,977	31.3% 2,284,909	4.4% 318,877	1.2% 85,816	100.0% 7,301,579
MedStar Family Choice	61.4% 1,936,747	31.0% 976,952	4.3% 135,609	3.3% 102,452	100.0% 3,151,760
Priority Partners	64.9% 6,763,482	29.6% 3,089,710	4.7% 485,270	0.8% 84,127	100.0% 10,422,589
United Healthcare	66.9% 3,641,194	28.5% 1,553,692	3.8% 209,156	0.7% 39,988	100.0% 5,444,030
Univ of MD Health Partners	65.5% 908,883	26.5% 367,416	6.7% 93,072	1.3% 18,053	100.0% 1,387,424
Total	65.2% 25,197,720	29.2% 11,283,401	4.4% 1,702,625	1.2% 466,519	100.0% 38,650,265

The distribution of encounters is mostly consistent across MCOs. Physician services ranged from 58.4% of encounters (JMS) to 71.8% of encounters (KPMAS). JMS had the largest percentage of pharmacy claims (36.6%), while KPMAS had the lowest percentage (23.2%). Outpatient hospital claims ranged from a low of 1.6% for KPMAS to a high of 6.7% for UMHP.

Figure 3 illustrates the volume of accepted encounters and Medicaid participants for each MCO.

Figure 3. Distribution of Total Participants Enrolled and Encounters by MCO, CY 2017



PPMCO and ACC are the largest MCOs, followed by MPC, UHC, MSFC, KPMAS, UMHP, and JMS. The number of accepted encounters reflects the participant distribution, with PPMCO and ACC having 10.4 million encounters (27.0%) and nearly 8 million encounters (20.6%), respectively. MPC has roughly 7.3 million encounters (18.9%), UHC has 5.4 million (14.1%), and MSFC has 3.1 million (8.2%). JMS, KPMAS, and UMHP each have fewer than 2 million Medicaid encounters. The proportion of encounters submitted by each MCO is consistent with the proportion of participants enrolled with each MCO. Analysis in subsequent years will evaluate MCOs in comparison to this baseline data.

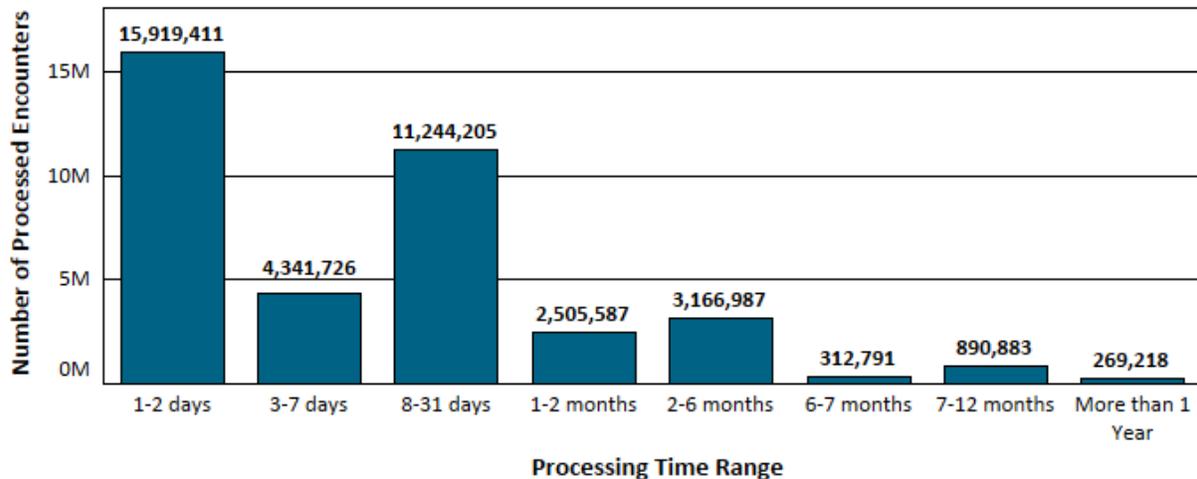
Step 3. Generate and Review Analytic Reports

Time Dimension Analysis

Effective analysis of the Medicaid program requires complete and accurate data. The processing time spans the interval between the end date of service and when the encounter is submitted to MDH. Once a provider has provided a service, they are required to submit a claim to the MCO within six months. Once invoiced, the MCO must adjudicate clean claims within 30 days. Maryland regulations require MCOs to submit encounter data based on its claims to MDH “within 60 calendar days after receipt of the claim from the provider”. Therefore, the maximum time allotted for an encounter to be submitted to MDH from the date of service is eight months.

In CY 2017, MDH did not receive the date an MCO receives the claim for a service on the encounter. MDH revised its regulations and contract in CY 2019 to require this data in future encounter submissions. For this analysis, timeliness of processing time is assessed with relation to the entire processing period—an eight-month maximum. The processing time is calculated by the length of time between the date of service and the date on which the encounter is submitted to MDH by the MCO. Figure 4 provides information pertaining to the timeliness of encounter submission from the date of service.

Figure 4. Processing Time for Encounters Submitted, CY 2017

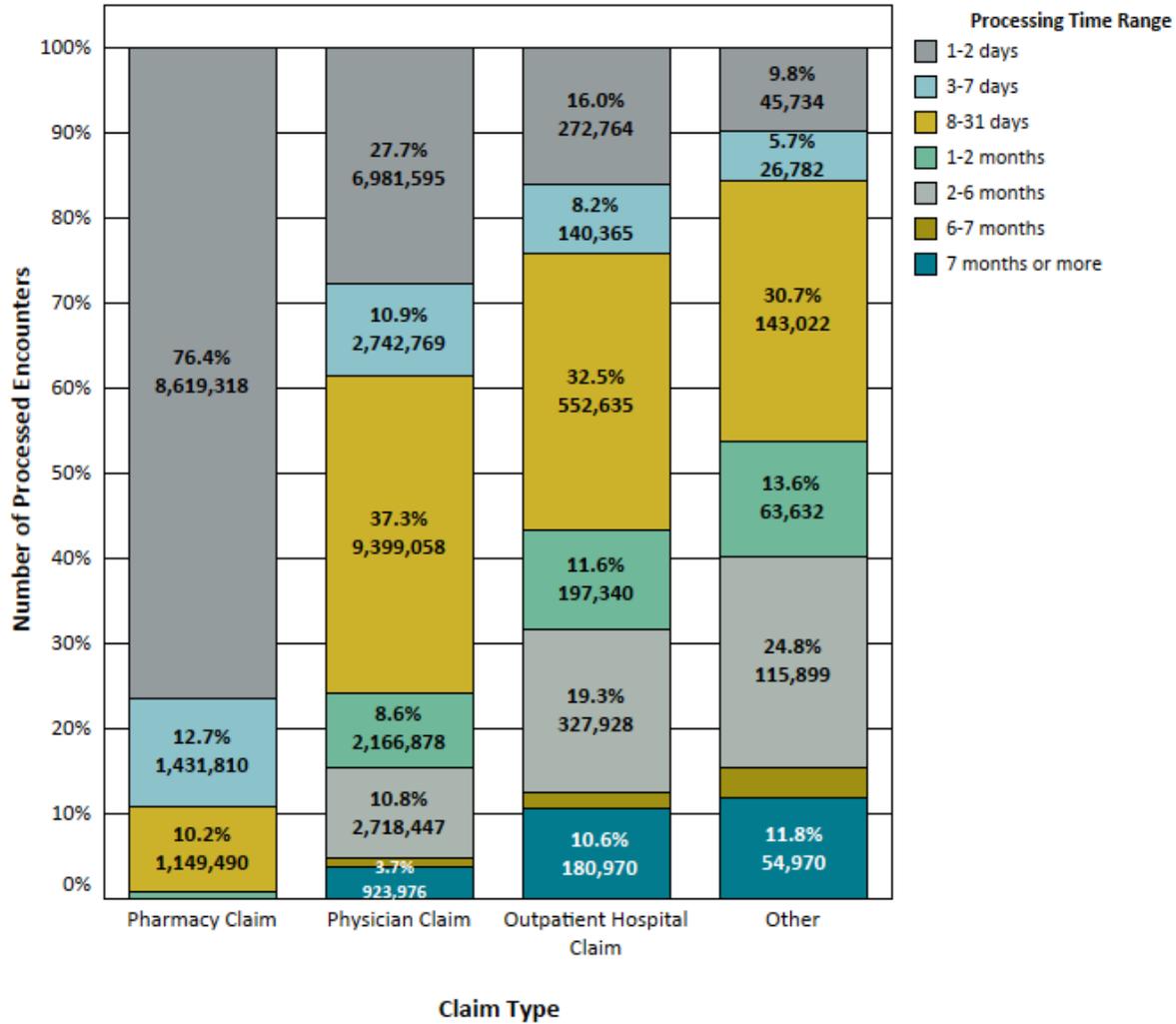


Note for Figures 4-7: An encounter is labeled as “1-2 months” if the encounter was submitted between 32 and 60 days after the date of service; “2-6 months” if the encounter was submitted between 61 and 182 days after the date of service; “6-7 months” if the encounter was submitted between 183 and 212 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.

While it is reasonable to assume that delays in submission will occur, MDH requires MCOs to submit encounters in a timely fashion. Variation from month to month is expected; however, noticeable changes related to timeliness may indicate irregular submission of encounter data. Most MCOs submit encounters to MDH within 1 to 2 days of the date of service, followed by encounters submitted within 8 to 31 days of the date of service (Figure 4). Very few encounters are submitted more than 7 months past the date of service.

Processing times for encounters submitted by claim type for CY 2017 are displayed in Figure 5.

Figure 5. Processing Time for Encounters Submitted by Claim Type, CY 2017



Most pharmacy claims (76.4%) were processed within 1 to 2 days, and most physician (37.3%), outpatient hospital (32.5%), and other claims (30.7%) were processed with 8 to 31 days as displayed in Figure 5.

The monthly processing time for submitted encounters in CY 2017 is displayed in Figure 6.

Figure 6. Processing Time for Encounters Submitted by Month, CY 2017

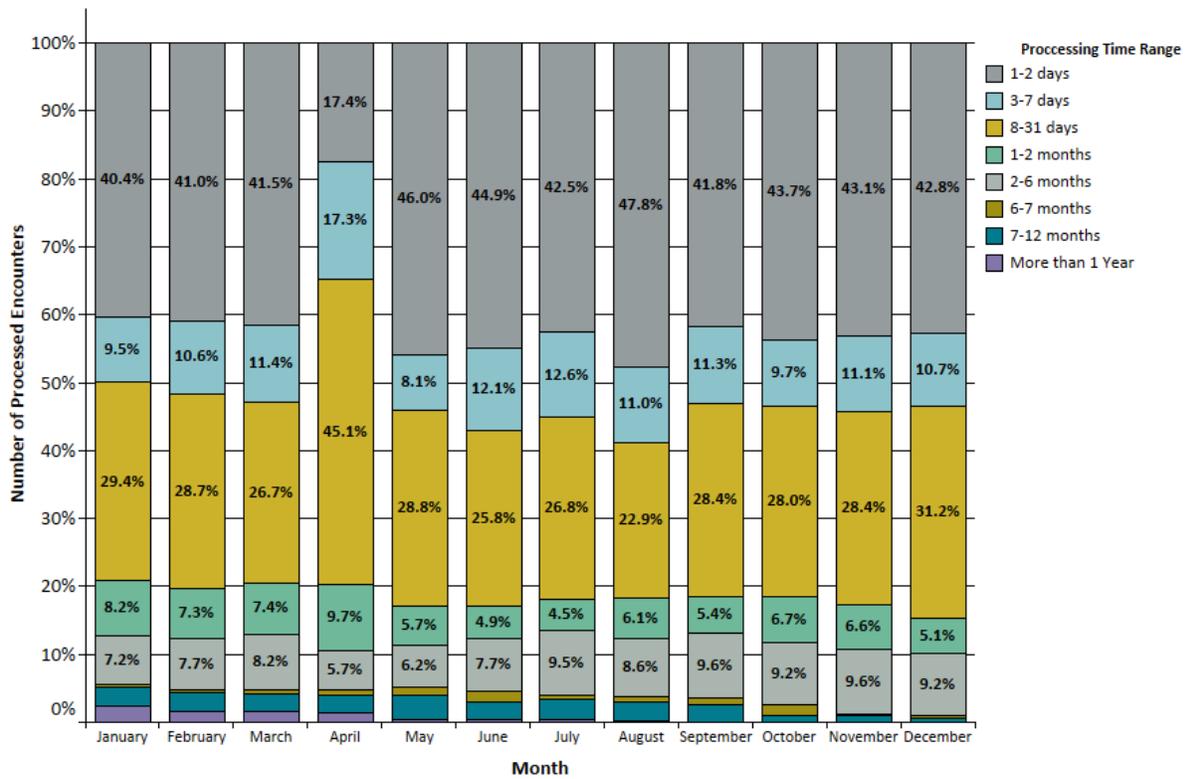
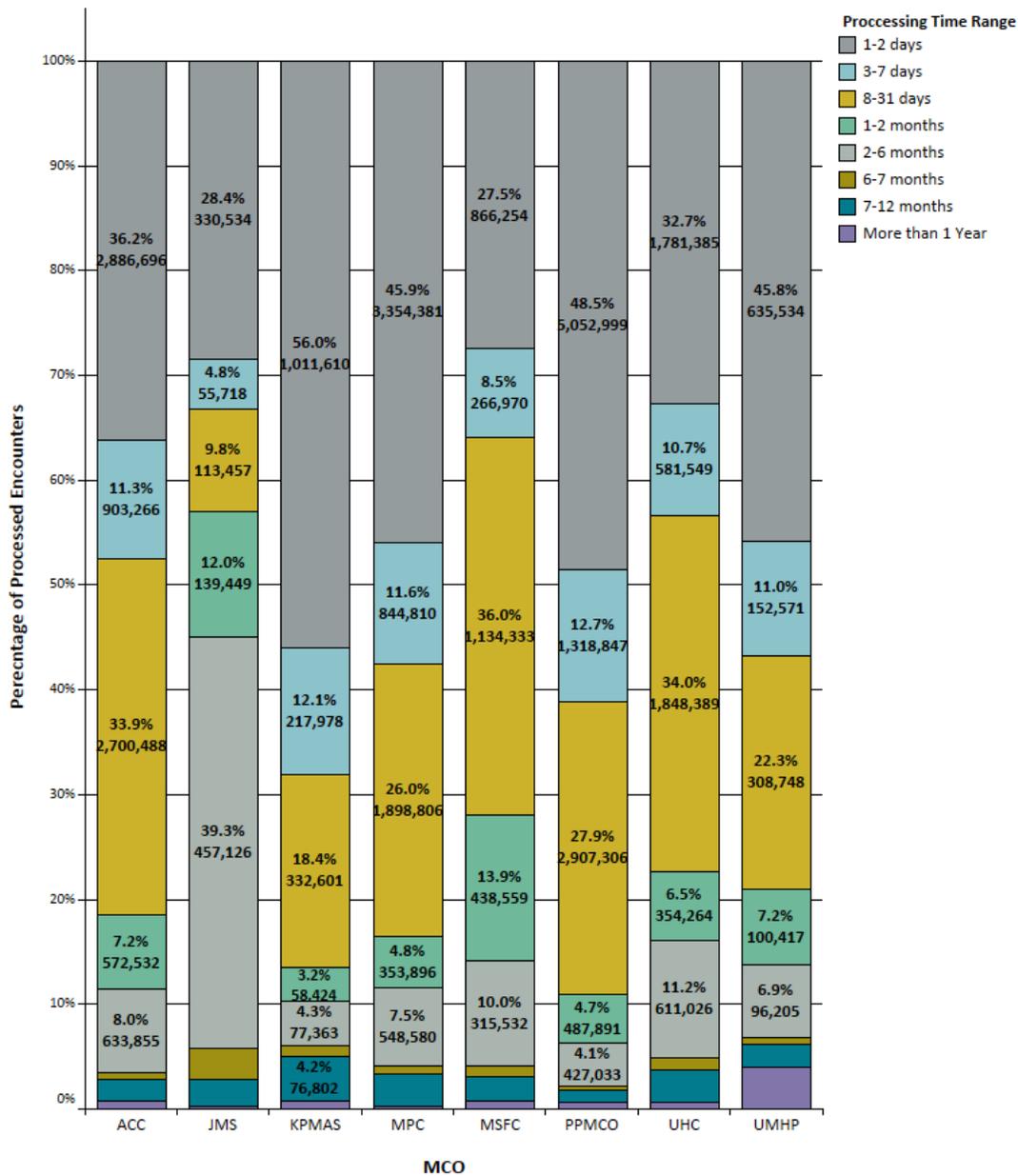


Figure 7 displays processing times for MCOs for encounters submitted to MDH in CY 2017.

Figure 7. Processing Time for Encounters Submitted by MCO, CY 2017



Of all encounters submitted in CY 2017, 41.2% of them were processed within 1 to 2 days of receipt by MDH. KPMAS submitted most of its encounters within 1 to 2 days (56.0%), while JMS only submitted 28.4% of its encounters within the same period. Nearly 30% of all encounters were processed within 8 to 31 days of the date of service, with MCOs ranging from 9.8% (JMS) to 36.0% (MSFC).

The MCOs varied significantly in terms of processing encounters within 1 to 2 months after the date of service, which accounted for 6.5% of all encounters in CY 2017. During the 1-2 month processing period, KPMAS submitted 3.2% of its encounters, while MSFC submitted 13.9% of its encounters.

Encounters processed more than 6 months after the end date of service are rare (less than 4% of all encounters). All MCOs processed less than 1% of their encounters more than a year after the date of service, except for UMHP: nearly 4% of its encounters were submitted more than a year after the date of service.

Provider Analysis

The following provider analysis examines encounter data for primary care providers (PCPs) and establishes a baseline to be used as a comparison rate of PCP visits in HealthChoice in future analyses (Centers for Medicare & Medicaid Services, 2012, p. 9). Evaluating encounters by provider type for fluctuations across MCOs helps to assess encounter data volume and consistency. Table 5 shows the number of participants within each MCO that received a PCP service during CY 2017. It considers all participants enrolled for any length of time within CY 2017.

Table 5. Percentage of HealthChoice Participants (Any Period of Enrollment) with a PCP Visit by MCO, CY 2017

	ACC	JMS	KPMAS	MPC	MSFC	PPMCO	UHC	UMHP	Total
Number of Participants (Any Period of Enrollment)	328,265	31,842	80,858	259,140	109,884	345,541	189,658	55,968	1,401,156
Percentage of Participants with a Visit with their Assigned PCP	41.5%	23.5%	45.0%	30.4%	26.0%	19.8%	38.1%	22.8%	30.9%
Percentage of Participants with a Visit with their Assigned PCP, Group Practice, or Partner PCPs	58.7%	51.4%	50.3%	49.3%	39.3%	22.0%	52.0%	36.0%	44.9%
Percentage of Participants with a Visit with Any PCP	75.2%	66.1%	54.5%	68.0%	60.0%	71.1%	69.7%	58.9%	65.4%

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 fee-for-service claims.

The total count of participants for each MCO in Table 3 differs from the totals shown previously in Figure 3 because this provider analysis is based not on MMIS2 data but on monthly PCP assignment files submitted by the MCOs to Hilltop. For this analysis, Medicaid identification numbers the MCOs provided for their members were matched with eligibility data in MMIS2. Only participants listed in an MCO's files and with enrollment in MMIS2 were incorporated into this analysis.

Please read PPMCO's results with caution; our analysis relied heavily on matching providers using a National Provider Identifier (NPI), and PPMCO's files had missing NPIs.

Roughly half of each MCO's population saw a PCP during CY 2017. Using the broadest definition of a PCP visit possible—a visit to any PCP within any MCO's network—the MCOs' percentage of participants with at least one PCP visit ranged from 54.5% (KPMAS) to 75.2% (ACC).

The analysis of inpatient hospitalizations, observation stays, and ED visits establishes baseline data to compare trends in subsequent encounter data validation analyses. Table 6 shows the number of encounter visits for each service type by MCO.

Table 6. Inpatient Visits, ED Visits, and Observation Stays by MCO, CY 2017

	ACC	JMS	KPMAS	MPC	MSFC	PPMCO	UHC	UMHP	Total
Number of All Visits	4,132,631	498,738	751,725	3,954,165	1,530,576	5,373,077	2,712,108	649,151	19,602,171
Percentage of All Visits	21.1%	2.5%	3.8%	20.2%	7.8%	27.4%	13.8%	3.3%	100.0%
Number of Inpatient Visits	24,702	3,564	4,964	24,691	9,297	33,945	15,904	4,509	121,576
Percentage of Visits that were Inpatient	0.6%	0.7%	0.7%	0.6%	0.6%	0.6%	0.6%	0.7%	0.6%
Number of ED Visits	178,774	26,028	16,895	168,083	59,954	204,714	105,954	28,002	788,404
Percentage of Visits that were ED	4.3%	5.2%	2.2%	4.3%	3.9%	3.8%	3.9%	4.3%	4.0%
Number of Observation Stays	8,435	1,444	719	9,871	3,040	8,705	6,088	1,250	39,552
Percentage of Visits that were Observation Stays	0.2%	0.3%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%

Note: Visits were not unduplicated between inpatient visits, ED visits, and observation stays.

For this analysis, a visit is defined as one encounter per person per provider per day. Both inpatient hospitalizations and observation stays are less than 1% of total visits. ED visits, which are 4% of all visits, range from 2.2% of all visits (KPMAS) to 5.2% of all visits (JMS).

Analysis by Age and Sex

An analysis of CY 2017 encounter data by MCO was conducted in three areas to determine the effectiveness of encounter data edit checks:

- Individuals over 65 with encounters, since this population is ineligible for HealthChoice
- Age-appropriate and sex-appropriate diagnoses and services for pregnancy
- Age-appropriate dementia screenings and diagnoses.

Individuals Over 65 Enrolled in HealthChoice

Because participants older than 65 are ineligible for HealthChoice, data was reviewed for any encounters for those aged 66 or older. Due to small cell sizes (10 or fewer enrollees), the number of enrollees aged 66 or older with a HealthChoice encounter cannot be reported by MCO. Across all MCOs, encounters were submitted for 44 participants who were over age 66 or who did not have a reported date of birth.

There are expected age ranges for pregnancy and dementia, which can be used for identifying potential outliers within MMIS2 encounter data. High percentages of enrollees with these diagnoses outside of the established appropriate age range and sex could indicate potential errors within the data. Very few outliers were discovered as a result of this analysis. Individual level reports of the few outliers identified have been provided to MDH for further investigation.

Age-Appropriate and Sex-Appropriate Diagnoses for Pregnancy

The first pregnancy analysis checked the percentage of participants who had a diagnosis for pregnancy by age group. Participants aged 0 to 12 and 51 or older typically are outside of the expected age range for pregnancy. This analysis only considers female participants with a pregnancy diagnosis in CY 2017; male participants are evaluated for pregnancy in the following analysis. Across all MCOs, only 61 participants were identified as being pregnant outside of the expected age ranges. All MCOs have similar distributions, with most participants between the ages of 12 and 50 years. Several MCOs have participants outside this age range with a pregnancy diagnosis; however, the number of outliers is negligible. The data substantiate that the encounters are age-appropriate for pregnancy.

The second analysis validated encounter data for pregnancy diagnosis being sex-appropriate. A diagnosis for pregnancy should typically be present on encounters for female participants. All MCOs have similar distribution, with nearly 100% of all pregnancies being reported for females. The analysis indicates that while there are pregnancy diagnoses for male participants in the encounter data, the numbers are negligible (43 pregnancies for male participants were reported across all MCOs).

Age-Appropriate Diagnoses of Dementia

The dementia analysis focused on age appropriate screenings and diagnoses of dementia. While dementia is a disease generally associated with older age, early onset can occur as early as 30 years of age. Thus, prevalence of dementia diagnoses should increase with age after 30. The number of participants having an encounter with a dementia diagnosis aged 30 and under compared to those over the age of 30 were identified. Table 7 displays the distribution of participants with a dementia diagnosis by MCO.

Table 7. Number of Participants with Dementia by MCO and Age Group, CY 2017

Age	ACC	JMS	KPMAS	MPC	MSFC	PPMCO	UHC	UMHP	Total
0 to 18	*	*	*	*	*	14	*	*	28
19 to 29	*	*	*	*	*	15	*	*	50
30 and Older	163	30	46	200	90	224	158	33	944
Total	181	33	49	213	94	253	164	35	1022

Note: Small counts (10 or fewer) are omitted per MDH's cell suppression policy.

As expected, the majority (92.4%) of participants with a diagnosis of dementia are over the age of 30. While each MCO does have participants under the age of 30 with a dementia diagnosis, the numbers are relatively small. ACC, MPC, PPMCO, and UHC have participants aged 0 to 18 with dementia-related encounters.

Step 4. Compare Findings to State-Identified Standards

In both Steps 2 and 3, Hilltop performed the analyses by MCO, allowing benchmarking from MCO to MCO. The analyses compared outlier data with overall trends, and the results are presented along with each analysis.

Activity 4: Medical Record Validation

Medical Record Sampling. Qlarant requested and received a random sample of HealthChoice encounter data for hospital inpatient, outpatient, and physician office (office visit) services that occurred in CY 2017 from Hilltop. The sample size used was determined to achieve a 90% confidence interval. Oversampling was used in order to ensure adequate numbers of medical records were received to meet the required sample size. The hospital inpatient and outpatient encounter types were oversampled by 500%, while the office visit encounter types were oversampled by 200% for each MCO.

Medical Record Validation. Medical records were first validated as being the correct medical record requested by verifying the patient name, date of birth, date of service, and gender. Valid medical records were then reviewed to ensure that documentation for services matched the submitted encounter data. The documentation in the medical record was compared to the encounter data to determine if the submitted encounter data (diagnosis, procedure, and/or revenue codes) could be validated against the findings in the medical record.

The medical records were reviewed by either a certified coder or a nurse with coding experience. Reviewers completed medical record reviewer training and achieved an inter-rater reliability agreement score of above 90%. Reviewers enter data from the medical record reviews into the Qlarant EDV Tool/Database.

Documentation was noted in the database as to whether the diagnosis, procedure, and revenue codes were substantiated by the medical record. Determinations were made as either a “match” when documentation was found in the record or a “no match” when there was a lack of documentation in the record. For inpatient encounters, the medical record reviewers also matched the principal diagnosis code to the primary sequenced diagnosis. A maximum of 9 diagnosis codes, 6 procedure codes, and 23 revenue codes were validated per record for the EDV. A definition of EDV terms are provided in Table 8.

Table 8. EDV Definition of Terms

Term	Definition
Encounter	A unique date of service with coded diagnoses and procedures for a single provider or care/service provided on a unique date of service by the provider.
Review element	Specific element in the encounter data which is being compared to the medical record; elements in this review include diagnosis, procedure, and revenue codes.
Match rate	Rate of correct record elements to the total elements presented as a percent.

Medical Record Review Guidelines. The following reviewer guidelines were used to render a determination of “yes” or “match” between the encounter data and the medical record findings:

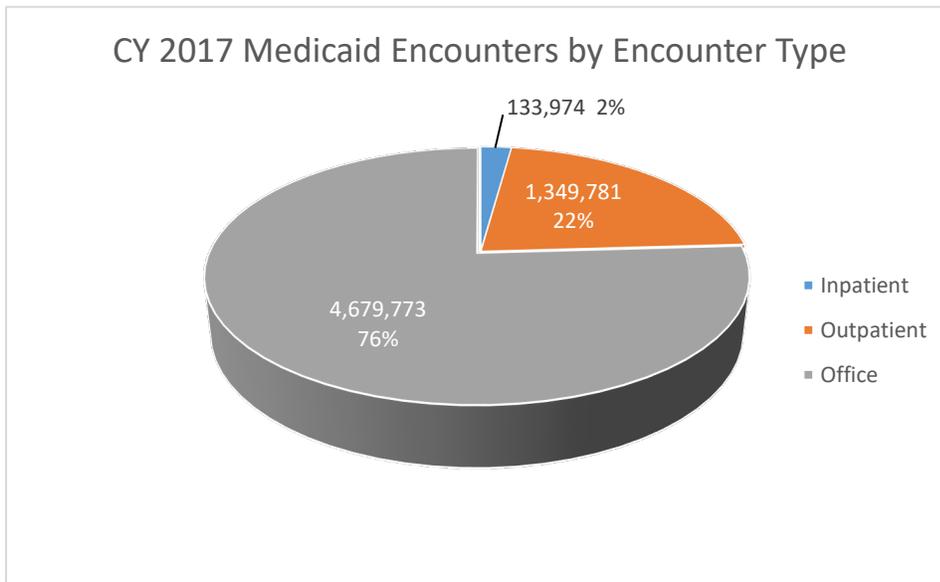
- As directed by the CMS Protocol, medical record reviewers cannot infer a diagnosis from the medical record documentation. Reviewers are required to use the diagnosis listed by the provider. For example, if the provider recorded “fever and chills” in the medical record, and the diagnosis in the encounter data is “upper respiratory infection,” the record does not match for diagnosis even if the medical record documentation would support the use of that diagnosis.

- For inpatient encounters with multiple diagnoses listed, the medical record reviewers are instructed to match the first listed diagnosis (as the principal diagnosis) with the primary diagnosis in the encounter data.
- Procedure data is matched to the medical record regardless of sequencing.

Results of Activity 4: Medical Record Validation

Medical Record Sampling. Qlarant requested and received the CY 2017 random sample of hospital inpatient, outpatient, and physician office services that occurred in CY 2017. The sample drawn was determined to achieve a 90% confidence interval with a 5% margin of error. A representation of the total CY 2017 encounters by setting is demonstrated in Figure 8.

Figure 8. Total CY 2017 Medicaid Encounters by Encounter Type



The majority of the CY 2017 encounters were office visits at 76% (4,679,733), followed by outpatient encounters at 22% (1,349,781), and inpatient encounters making up the smallest portion at 2.2% (133,974). Please refer to Table 9 for the distribution of the EDV sample by encounter type from CY 2015 to CY 2017.

Table 9. CY 2015 - CY 2017 EDV Sample by Encounter Type

Encounter Type	CY 2015			CY 2016			CY 2017		
	Total Encounters	% of Encounters	Sample Size	Total Encounters	% of Encounters	Sample Size	Total Encounters	% of Encounters	Sample Size
Inpatient	131,129	1.5%	6	126,905	1.4%	42	133,974	2.2%	48
Outpatient	1,408,486	15.7%	60	1,337,141	14.4%	458	1,349,781	21.9%	467
Office Visit	7,418,915	82.8%	318	7,809,270	84.2%	2,572	4,679,773	75.9%	1,653
Total	8,958,540	100.0%	384	9,273,316	100.0%	3,072	6,163,528	100.0%	2,168

The proportion of inpatient and outpatient visits has remained consistent from CY 2015 through CY 2017. However, the office visit encounters in CY 2017 appears considerably lower than in CY 2015 and CY 2016 due to a change in how office visits were identified. In prior years, the data were generated at

the service level, whereas each procedure provided on the same date of service was treated as one encounter. This year, the data was generated at the visit level, whereas all procedures provided on one date of service were collectively treated as one encounter to provide a more thorough review of the physician encounter data.

The total number of records reviewed increased in CY 2016 as MDH went from a statewide review to an MCO-specific review. For CY 2017, the sampling methodology was revised to reflect a 90% confidence level with a 5% margin of error. This resulted in a slight decrease in records reviewed per MCO.

Once sampling was complete, Qlarant faxed requests for medical records to the service providers. Non-responders were contacted by the MCOs to comply with this audit by submitting their medical records. Table 10 outlines the total number of records reviewed and required by MCO and encounter type.

Table 10. CY 2017 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?
ACC	5	5	Yes	55	55	Yes	217	211	Yes
JMS	7	7	Yes	94	93	Yes	185	171	Yes
KPMAS	5	5	Yes	19	19	Yes	246	246	Yes
MPC	6	6	Yes	66	66	Yes	199	199	No*
MSFC	5	5	Yes	48	47	Yes	227	220	Yes
PPMCO	6	6	Yes	69	67	Yes	207	198	Yes
UHC	7	7	Yes	59	57	Yes	210	207	Yes
UMHP	7	7	Yes	64	63	Yes	204	201	Yes
Total	48	48	Yes	474	467	Yes	1,695	1653	No

*MPC did not submit a sufficient number of medical records to meet the minimum samples required for the office visit setting.

All MCOs submitted a sufficient number of medical records to meet the minimum samples required for each setting type of the encounter data review except for MPC, which did not submit the required number of office visit records. Overall, there were more records reviewed than were required for outpatient and office visit settings.

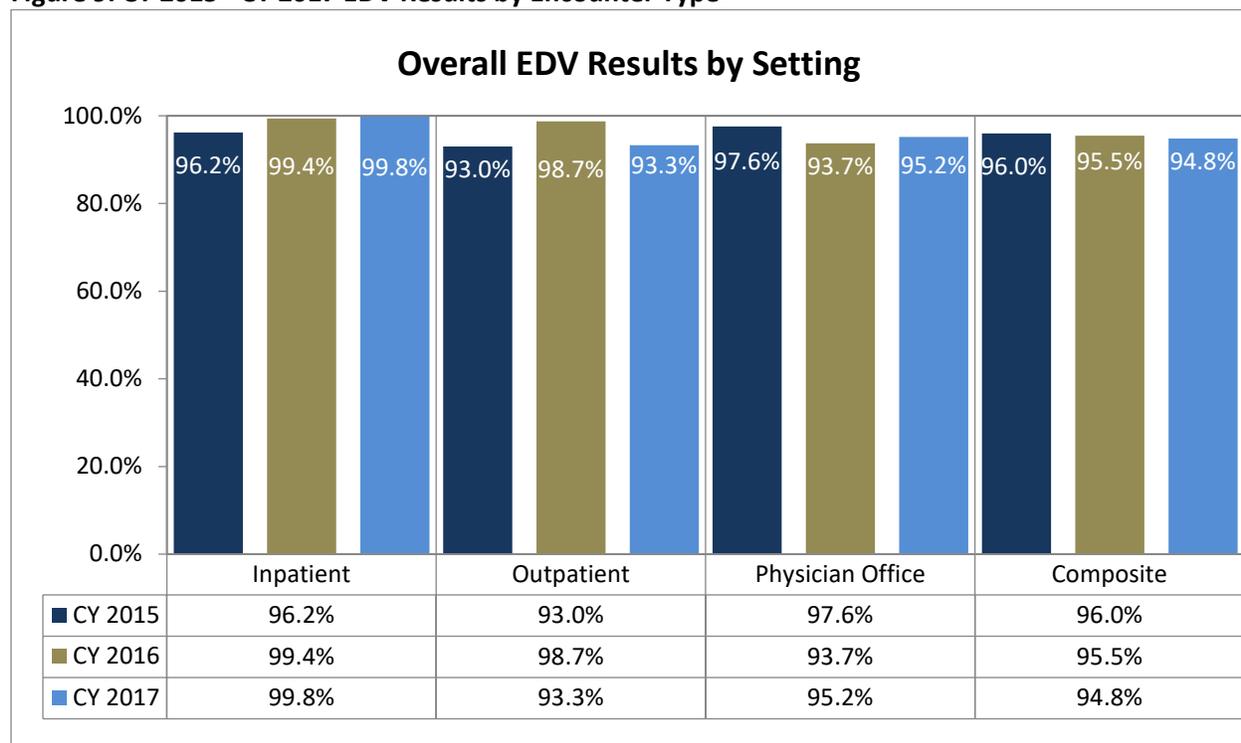
Analysis Methodology. Data from the database were used to analyze the consistency between submitted encounter data and corresponding medical records. Results were analyzed and presented separately by encounter type and review element. Match rates (medical record review supporting the encounter data submitted) and reasons for “no match” errors for diagnosis code, procedure code, and revenue code elements are presented for inpatient, outpatient, and office visit encounter types in the results below.

Exclusion Criteria. Cases where a match between the medical record and encounter data could not be verified because it was not legible or the date of birth, date of service, gender, or name were missing or incorrect were excluded from the review and determined invalid. Nearly 10% (231) of the total records

were determined to be invalid. Of those records, 97% (224) were for physician office visits and the remaining 3% were outpatient records. No inpatient records were invalid.

Results. The analysis of the data was organized by review elements including diagnosis, procedure, and revenue codes. A total of 2,210 medical records were reviewed. The overall EDV results for CY 2015 through CY 2017 by encounter type are displayed in Figure 9.

Figure 9. CY 2015 - CY 2017 EDV Results by Encounter Type



The CY 2017 overall match rate was 94.8%, which represents a 0.7 percentage point decline from CY 2016. Match rates for both inpatient and physician office settings increased, while outpatient match rates declined 5.4%. The decline in the outpatient rate is the reason for the slight decrease in the overall match rate.

Table 11 provides trending of the EDV records for CY 2015 through CY 2017 by encounter type.

Table 11. CY 2015 – CY 2017 EDV Results by Encounter Type

Encounter Type	Records Reviewed			Total Possible Elements*			Total Matched Elements			Percentage of Matched Elements		
	CY 2015	CY 2016	CY 2017	CY 2015	CY 2016	CY 2017	CY 2015	CY 2016	CY 2017	CY 2015	CY 2016	CY 2017
Inpatient	7	54	48	130	1,117	1,005	125	1,110	1,003	96.2%	99.4%	99.8%
Outpatient	60	473	474	560	4,448	5,479	521	4,389	5,113	93.0%	98.7%	93.3%
Office Visit	318	2,584	1,695	1,067	9,778	7,269	1,041	9,160	6,921	97.6%	93.7%	95.2%
TOTAL	385	3,111	2,217	1,757	15,343	13,753	1,687	14,659	13,037	96.0%	95.5%	94.8%

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

The overall element match rate declined by 0.7 percentage points from 95.5% in CY 2016 to 94.8% in CY 2017 and remains 1.2 percentage points below the CY 2015 match rate of 96.0%.

The inpatient encounter match rate increased 0.4 percentage points from 99.4% in CY 2016 to 99.8% in CY 2017 and is 3.6 percentage points above the CY 2015 score of 96.2%.

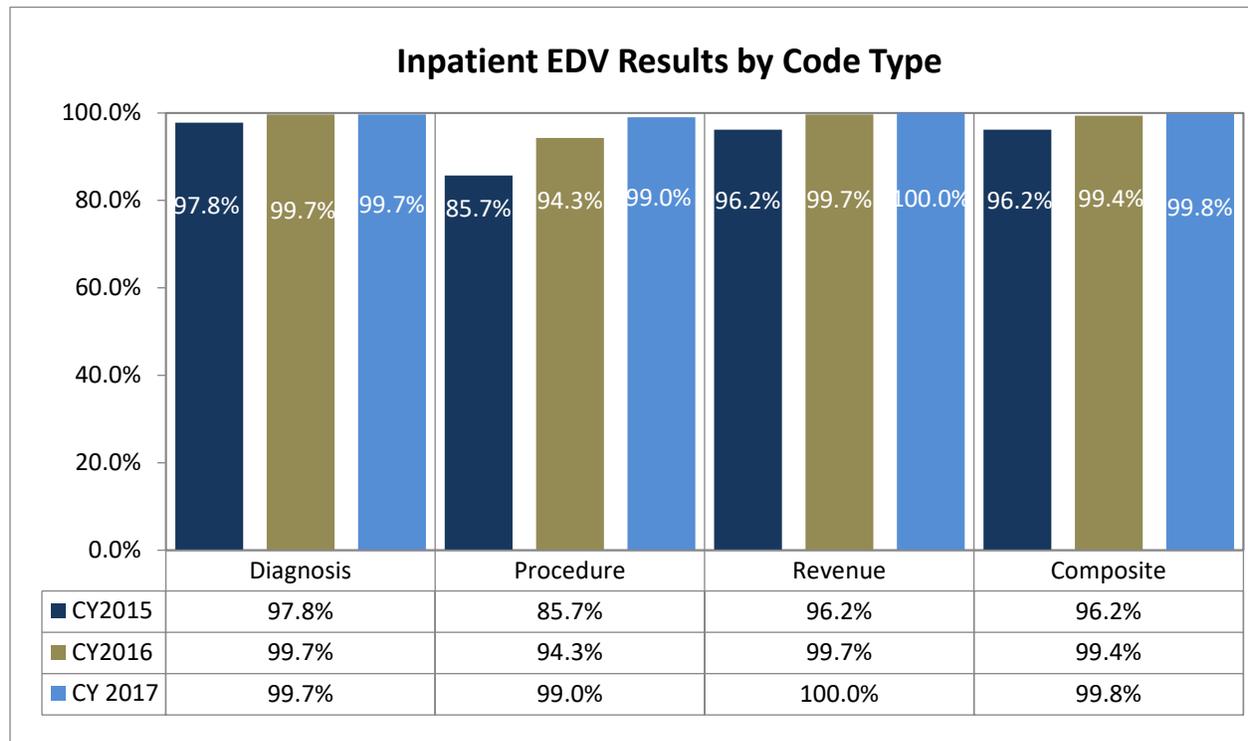
The outpatient encounter match rate decreased by 5.4 percentage points from 98.7% in CY 2016 to 93.3% in CY 2017, after an increase of 5.7 percentage points from 93.0% in CY 2015 to 98.7% in CY 2016. The office visit encounter match rate increased 1.5 percentage points from 93.7% in CY 2016 to 95.2% in CY 2017, but remains 2.4 percentage points below CY 2015.

Results by Review Element

The EDV review element match rates were analyzed by code type including diagnosis, procedure, and revenue codes. The following section outlines those results.

Inpatient Encounters. The inpatient EDV results by code type for CY 2015 through CY 2017 are displayed in Figure 10.

Figure 10. CY 2015 - CY 2017 Inpatient EDV Results by Code Type



Overall, the total match rate for inpatient encounters across all code types remained fairly stable, increasing by 0.4 percentage points from 99.4% in CY 2016 to 99.8% in CY 2017, and continues the upward trend from 96.2% in CY 2015.

Table 12 provides trending of EDV inpatient encounter type results by code from CY 2015 through CY 2017.

Table 12. CY 2015 – CY 2017 EDV Inpatient Encounter Type Results by Code

Inpatient Encounter Type	Diagnosis Codes			Procedure Codes			Revenue Codes			Total		
	CY 2015	CY 2016	CY 2017	CY 2015	CY 2016	CY 2017	CY 2015	CY 2016	CY 2017	CY 2015	CY 2016	CY 2017
Match	44	367	328	6	66	103	75	677	572	125	1,110	1003
No Match	1	1	1	1	4	1	3	2	0	5	7	2
Total Elements	45	368	329	7	70	104	78	679	572	130	1,117	1005
Match Percent	97.8%	99.7%	99.7%	85.7%	94.3%	99.0%	96.2%	99.7%	100%	96.2%	99.4%	99.8%

The inpatient diagnosis code match rate remained unchanged in CY 2017 at 99.7%, after an increase of 1.9 percentage points from CY 2015 to CY 2016.

The inpatient procedure code match rate continued to improve, increasing 4.7 percentage points from 94.3% in CY 2016 to 99.0% for CY 2017. This was a substantial increase from the CY 2015 rate of 85.7%.

The CY 2017 inpatient revenue code match rate increased slightly to 100%, 0.3 percentage points above the CY 2016 rate of 99.7%. This is 3.8 percentage points above the low of 96.2% in CY 2015.

The CY 2017 MCO-specific inpatient results by code type are shown in Table 13.

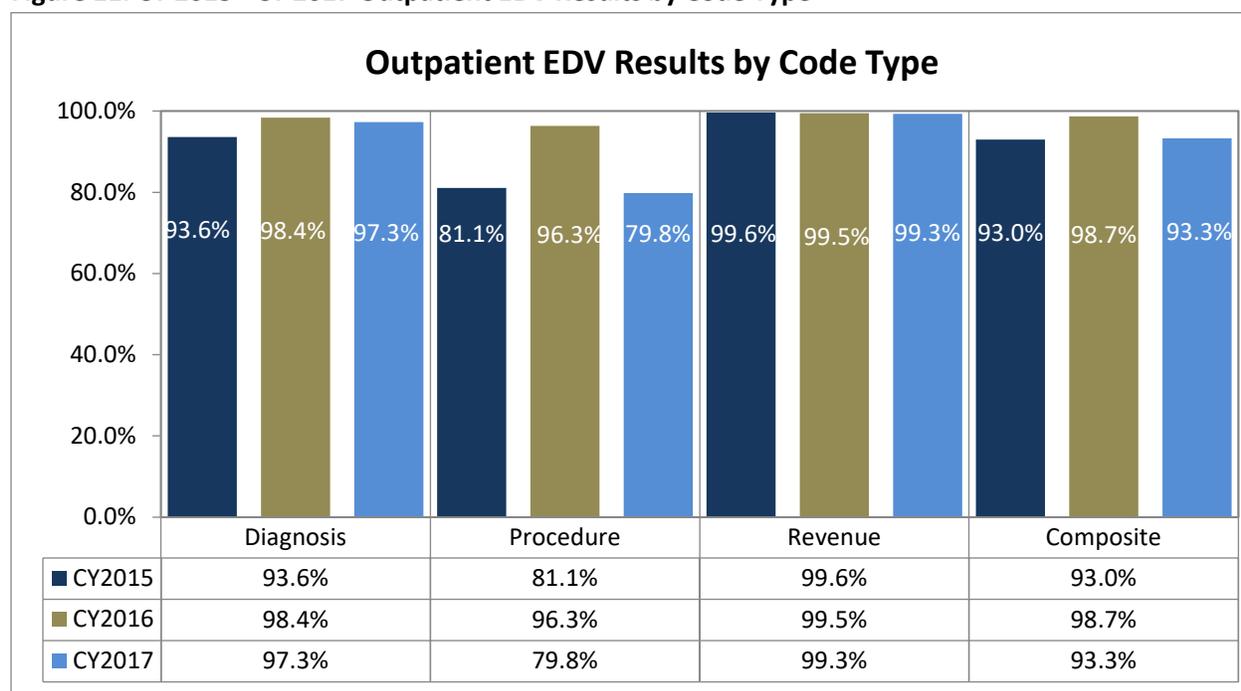
Table 13. MCO Inpatient Results by Code Type

MCO	# of Reviews	Diagnosis Codes			Procedures Codes			Revenue Codes			Total Codes		
		Match	Total	%	Match	Total	%	Match	Total	%	Match	Total	%
ACC	5	26	27	96%	5	5	100%	50	50	100%	81	82	99%
JMS	7	57	57	100%	24	25	96%	113	113	100%	194	195	99%
KPMAS	5	32	32	100%	13	13	100%	74	74	100%	119	119	100%
MPC	6	31	31	100%	4	4	100%	50	50	100%	85	85	100%
MSFC	5	28	28	100%	41	41	100%	41	41	100%	110	110	100%
PPMCO	6	49	49	100%	11	11	100%	95	95	100%	155	155	100%
UHC	7	56	56	100%	NA	NA	NA	78	78	100%	134	134	100%
UMHP	7	49	49	100%	5	5	100%	71	71	100%	125	125	100%

Six of the eight MCOs (KPMAS, MPC, MSFC, PPMCO, UHC and UMHP) achieved a match rate of 100.0% for inpatient encounters across all code types. The two remaining MCOs, ACC and JMS, received an overall rate of 99%.

Outpatient Encounters. The outpatient EDV results by code type for CY 2015 through CY 2017 are displayed in Figure 11.

Figure 11. CY 2015 - CY 2017 Outpatient EDV Results by Code Type



Overall, the total match rate for outpatient encounters across all code types decreased substantially, dropping 5.4 percentage points from 98.7% in CY 2016 to 93.3% in CY 2017, similar to the overall rate of 93.0% in CY 2015. The decrease was primarily due to the large decrease in match rate for procedure codes, which dropped 16.5 percentage points from a rate of 96.3% in CY 2016. A decline of 1.1 percentage points in diagnosis codes from 98.4% in CY 2016 to 97.3% in CY 2017 also contributed to the overall decline. Table 14 provides trending of EDV outpatient encounter type results by code from CY 2015 through CY 2017.

Table 14. CY 2015 – CY 2017 EDV Outpatient Encounter Type Results by Code

Outpatient Encounter Type	Diagnosis Codes			Procedure Codes			Revenue Codes			Total		
	CY 2015	CY 2016	CY 2017	CY 2015	CY 2016	CY 2017	CY 2015	CY 2016	CY 2017	CY 2015	CY 2016	CY 2017
Match	161	1,436	1597	116	626	1206	244	2,327	2310	521	4,389	5113
No Match	11	24	44	27	24	305	1	11	17	39	59	366
Elements	172	1,460	1641	143	650	1511	245	2,338	2327	560	4,448	5479
Match Percent	93.6%	98.4%	97.3%	81.1%	96.3%	79.8%	99.6%	99.5%	99.3%	93.0%	98.7%	93.3%

The CY 2017 outpatient diagnosis code match rate decreased by 1.1 percentage points to 97.3% from the CY 2016 rate of 98.4%, but remains above the CY 2015 rate of 93.6%.

Although the outpatient procedure code match rate has consistently had the lowest match rate of all code types, the rate had a substantial decline of 16.5 percentage points from 96.3% in CY 2016 to 79.8%

in CY 2017. This is 1.3 percentage points below the CY 2015 rate of 81.1%, making it the lowest rate in the 3-year period.

Outpatient revenue codes have remained relatively stable for the 3-year period with only a slight decline from 99.5% in CY 2016 to 99.3% in CY 2017.

The CY 2017 MCO-specific outpatient results by code type are shown in Table 15.

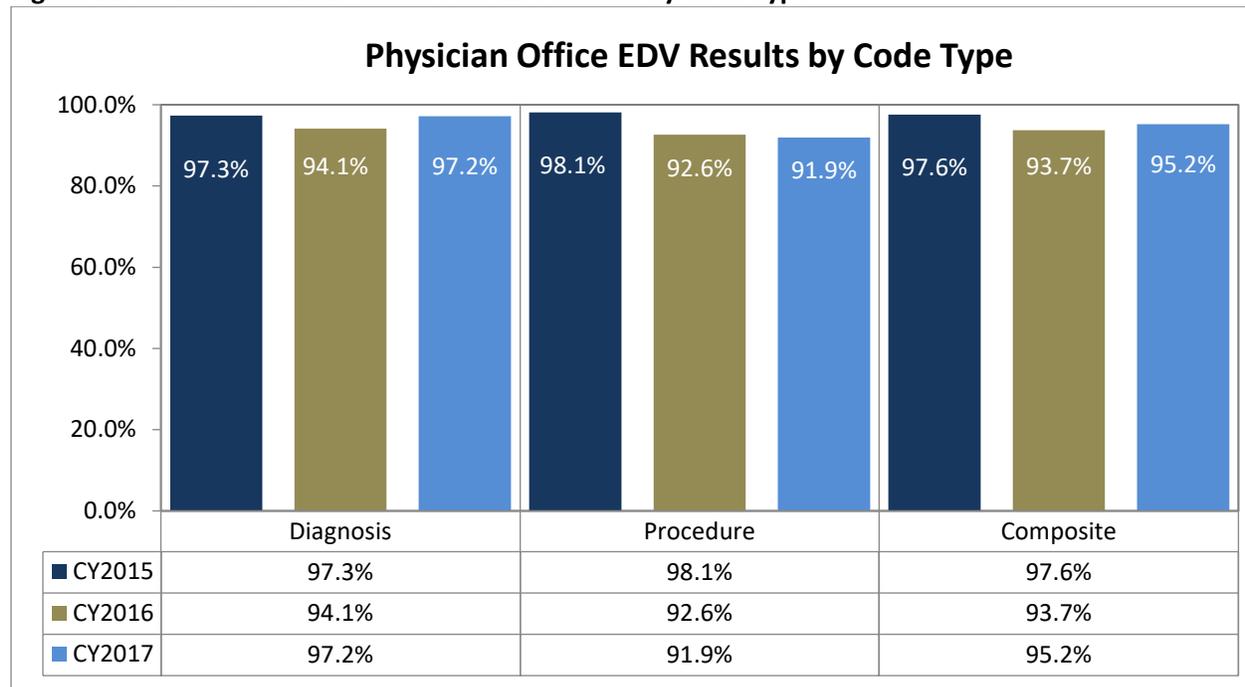
Table 15. MCO Outpatient Results by Code Type

MCO	# of Reviews	Diagnosis Codes			Procedure Codes			Revenue Codes			Total		
		Match	Total	%	Match	Total	%	Match	Total	%	Match	Total	%
ACC	55	174	176	98.9%	113	161	70.2%	232	232	100.0%	519	569	91.2%
JMS	94	373	384	97.1%	255	295	86.4%	437	444	98.4%	1065	1123	94.8%
KPMAS	19	65	66	98.5%	55	73	75.3%	122	122	100.0%	242	261	92.7%
MPC	66	222	232	95.7%	157	199	78.9%	314	316	99.4%	693	747	92.8%
MSFC	48	149	150	99.3%	110	148	74.3%	249	249	100.0%	508	547	92.9%
PPMCO	69	224	230	97.4%	136	167	81.4%	232	233	99.6%	592	630	94.0%
UHC	59	189	198	95.5%	174	214	81.3%	348	355	98.0%	711	767	92.7%
UMHP	64	201	205	98.0%	206	254	81.1%	376	376	100.0%	783	835	93.8%

MCO-specific results by code type ranged from 91.2% (ACC) to 94.8% (JMS). Overall, outpatient revenue codes were the highest scoring elements. Four of the eight MCOs (ACC, KPMAS, MSFC and UMHP) achieved a match rate of 100.0% for this element. The lowest scoring element was procedure codes with MCO scores ranging from a low of 70.2% (ACC) to a high of 86.4% (JMS).

Office Visit Encounters. The office visit EDV results by code type for CY 2015 through CY 2017 are displayed in Figure 12.

Figure 12. CY 2015 - CY 2017 Office Visit EDV Results by Code Type



Overall, the office visit match rate increased 1.5 percentage points to 95.2% in CY 2017 from 93.7% in CY 2016, remaining below the CY 2015 rate of 97.6%. Table 16 provides trending of EDV office visit encounter type results by code from CY 2015 through CY 2017.

Table 16. CY 2015 – CY 2017 EDV Office Visit Encounter Type Results by Code

Office Visit Encounter Type	Diagnosis Codes			Procedure Codes			Total		
	CY 2015	CY 2016	CY 2017	CY 2015	CY 2016	CY 2017	CY 2015	CY 2016	CY 2017
Match	729	6,740	4,405	312	2,420	2,516	1,041	9,160	6,921
No Match	20	425	123	6	193	223	26	618	348
Total Elements	749	7,165	4,530	318	2,613	2,739	1,067	9,778	7,269
Match Percent	97.3%	94.1%	97.2%	98.1%	92.6%	91.9%	97.6%	93.7%	95.2%

Revenue codes are not applicable for office visit encounters.

The diagnosis code match rate increased by 3.1 percentage points from 94.1% in CY 2016 to 97.2% in CY 2017, which is slightly lower than the CY 2015 rate of 97.3%.

The procedure code match rate dropped 0.7 percentage points from CY 2016, and remains below the CY 2015 rate of 98.1%.

The CY 2017 MCO specific office visit match rates by code type are shown in Table 17.

Table 17. MCO Office Visit Results by Code Type

MCO	# of Reviews	Diagnosis Codes			Procedure Codes			Total Codes		
		Match	Total	%	Match	Total	%	Match	Total	%
ACC	217	493	515	95.7%	325	361	90.0%	818	876	93.4%
JMS	185	576	595	96.8%	226	248	91.1%	802	843	95.1%
KPMAS	246	635	641	99.1%	344	387	88.9%	979	1028	95.2%
MPC	199	503	530	94.9%	313	341	91.8%	816	871	93.7%
MSFC	227	561	576	97.4%	305	351	86.9%	866	927	93.4%
PPMCO	207	518	530	97.7%	347	362	95.9%	865	892	97.0%
UHC	210	542	558	97.1%	342	358	95.5%	884	916	96.5%
UMHP	204	577	585	98.6%	314	331	94.9%	891	916	97.3%

Revenue codes are not applicable for office visit encounters.

Overall, diagnosis codes yielded the highest match rates, ranging from 95.7% (ACC) to 99.1% (KPMAS). The lowest scoring element was procedure codes, ranging from 86.9% (MSFC) to 95.9% (PPMCO).

“No Match” Results by Element and Reason

Table 18 illustrates the reasons for “no match” errors. The reasons for determining a “no match” error for the diagnosis, procedure, and revenue code elements were:

- Lack of medical record documentation.
- Incorrect principal diagnosis (inpatient encounters) or incorrect diagnosis codes.

Table 18. CY 2015-CY 2017 Reasons for “No Match” by Encounter Type

Encounter Type		CY 2015					CY 2016					CY 2017				
		Incorrect Codes		Lack of Documentation		Total Elements	Incorrect Codes		Lack of Documentation		Total Elements	Incorrect Codes		Lack of Documentation		Total Elements
		#	%	#	%	#	#	%	#	%	#	#	%	#	%	#
Diagnosis	IP	0	0%	1	100%	1	1	100%	0	0%	1	1	100%	0	0%	1
	OP	11	100%	0	0%	11	13	54%	11	46%	24	44	100%	0	0%	44
	OV	9	45%	11	55%	20	208	49%	217	51%	425	123	98%	2	2%	125
Procedure	IP	0	0%	3	100%	3	4	100%	0	0%	4	1	100%	0	0%	1
	OP	0	0%	1	100%	1	23	96%	1	4%	24	305	100%	0	0%	305
	OV	6	100%	0	0%	6	151	78%	42	22%	193	179	80%	44	20%	223
Revenue	IP	0	0%	3	100%	3	0	0%	2	100%	2	0	0%	0	0%	0
	OP	0	0%	1	100%	1	6	55%	5	45%	11	16	94%	1	6%	17

IP-Inpatient; OP-Outpatient; OV-Office Visit

Incorrect coding accounted for the majority of all diagnosis, procedure, and revenue code mismatches in CY 2017. This is a substantial change from CY 2016, when non-compliant codes were consistently split between lack of medical record documentation and incorrect codes.

Encounter Data Validation Activity 5: EDV Findings

After completion of Steps 1, 2, and 4, Qlarant created data tables that display summary statistics for the information obtained from these activities for each MCO. Summarizing the information in tables makes it easier to evaluate by highlighting patterns in the accuracy and completeness of encounter data. Qlarant also provided a narrative accompanying these tables, highlighting individual MCO issues and providing recommendations to each MCO and DQA about improving the quality of the encounter data.

Results of Activity 5: EDV Findings

The HealthChoice MCOs were found to have information systems in place that produce accurate and complete encounter data. The MCOs use standard forms and coding schemes that allow for capturing appropriate data elements for claims processing. MDH has a comprehensive 837 process, which instructs the MCOs on the collection and submission of encounter data.

The encounter data submitted by the HealthChoice MCOs for CY 2017 can be considered reliable for reporting purposes as the EDV overall match rate was 94.8%. This rate exceeded the recommended match rate standard of 90% for EDV set by Qlarant. The CY 2017 overall match rate was a slight 0.7 percentage point decrease from the CY 2016 rate of 95.5% and one percentage point below the CY 2015 rate of 96%.

While the inpatient and office visit match rates increased in CY 2017, these were offset by the significant 5.4 percentage point decrease in the outpatient rate. This resulted in the 0.7 percentage point decline in the overall match rate.

In CY 2017, 100% of mismatched diagnosis codes for inpatient and outpatient encounters and 98.4% of the mismatched office visit diagnosis codes were due to incorrect code selection. The remaining 1.6% of the office visit diagnosis code mismatches was due to a lack of supporting documentation in the medical record.

Similarly, the majority of mismatched procedure code elements for inpatient, outpatient, and office visit encounters contributed to incorrect code selection for CY 2017.

There were no inpatient revenue code mismatches in CY 2017. The majority of all outpatient revenue code mismatches were due to incorrect code selection.

MCO-specific results are outlined below.

AMERIGROUP Community Care

- ACC achieved match rates above the standard of 90% recommended by Qlarant in all areas of review:
 - 99% for all inpatient codes reviewed; a decrease from 100% in CY 2016.
 - 91.2% for all outpatient codes reviewed; a 6.9 percentage point decrease from 98.1% in CY 2016.
 - 93.4% for all office visit codes reviewed; an increase from 92.7% in CY 2016.

Jai Medical Systems, Inc.

- JMS achieved match rates above the standard of 90% recommended by Qlarant in all areas of review:
 - 99% for all inpatient codes reviewed; an increase from 98% in CY 2016.
 - 94.8% for all outpatient codes reviewed; a decrease of 4.4 percentage points from the CY 2016 rate of 99.2%.
 - 95.1% for all office visit codes reviewed; an increase of 2 percentage points from the CY 2016 rate of 93.1%.

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

- KPMAS achieved match rates above the standard of 90% recommended by Qlarant in all areas of review:
 - 100% for all inpatient codes reviewed; consistent with the CY 2016 rate.
 - 92.7% for all outpatient codes reviewed; a 5 percentage point decrease from the CY 2016 rate of 97.7%.
 - 95.2% for all office visit codes reviewed; a decrease of 1.4 percentage points from the CY 2016 rate of 96.6%.

Maryland Physicians Care:

- MPC achieved match rates above the standard of 90% recommended by Qlarant in all areas of review:
 - 100% for all inpatient codes reviewed; consistent with CY 2016 rate.

- 92.8% for all outpatient codes reviewed; a decrease of 5.3 percentage points below the CY 2016 rate.
- 93.7% for all office visit codes reviewed; an increase of 2.1 percentage points over the CY 2016 rate.
- It should be noted that the MPC providers did not submit the sufficient number of office visit records to meet the minimum sample required for the review. Therefore, the remaining number of records required to meet the minimum sample (seven) received a finding of no match for all elements reviewed. Entering a no match for the remaining seven records significantly impacted the MPC's rate as the office visit results were at 97.6% prior to the results of the seven records being entered.

MedStar Family Choice, Inc.:

- MSFC achieved match rates above the standard of 90% recommended by Qlarant in all areas of review:
 - 100% for all inpatient codes reviewed; an improvement of 1 percentage point over the CY 2016 rate of 99%.
 - 92.9% for all outpatient codes reviewed; dropping 4.4 percentage points from the CY 2016 rate of 97.3%.
 - 93.4% for all office visit codes reviewed; a 1.1 percentage point improvement over the CY 2016 rate of 92.3%.

Priority Partners:

- PPMCO achieved match rates above the standard of 90% recommended by Qlarant in all areas of review:
 - 100% for all inpatient codes reviewed; consistent with the CY 2016 rate.
 - 94% for all outpatient codes reviewed; a decrease of 5.5 percentage points from the CY 2016 rate of 99.5%.
 - 97% for all office visit codes reviewed; an increase of 1.9 percentage point from the CY 2016 rate of 95.1%.

UnitedHealthcare Community Plan:

- UHC achieved match rates above the standard of 90% recommended by Qlarant in all areas of review:
 - 100% for all inpatient codes reviewed; consistent with the CY 2016 rate.
 - 92.7% for all outpatient codes reviewed; a decline of 6.2 percentage points from the CY 2016 rate of 98.9%.
 - 96.5% for all office visit codes reviewed; an increase of 2.5 percentage points over the CY 2016 rate of 94%.

University of Maryland Health Partners:

- UMHP achieved match rates above the standard of 90% recommended by Qlarant in all areas of review:
 - 100% for inpatient codes reviewed; a 1 percentage point increase over the CY 2016 rate of 99%.
 - 93.8% for all outpatient codes reviewed; a decrease of 5.7 percentage points from the CY 2016 rate of 99.5%.

- 97.3% for all office visit codes reviewed; an increase of 3.7 percentage points over the CY 2016 rate of 93.6%.

Corrective Action Plans

For the CY 2017 EDV, all HealthChoice MCOs achieved match rates above the 90% standard; therefore no corrective action plans are required.

Recommendations

Qlarant and Hilltop recommend the following to MDH based on the CY 2017 EDV:

- Monitor 8ER reports to identify trends and encourage improvement of encounter data quality, especially for MCOs with higher rates of rejection. As noted in Activity 3, Step 1, 8ER error reports as a result of the EDI process were reviewed. Out of approximately 40 million overall encounters, over 1.8 million encounters (approximately 4.6%) were rejected through the EDI process in CY 2017. While all MCOs had rejections, KPMAS accounted for 16.4% of rejected encounters but only 4.7% of accepted encounters.
- Work with the MCOs to encourage accurate population of the prescribing physician data field. This data field was reviewed and found that it was invalid in over 92% of encounters. Encounters by claim type were also reviewed and the distribution was relatively similar across MCOs. MDH should review this information to determine if the data are as expected and whether follow-up discussions are required.
- Monitor monthly submissions to ensure that the MCOs submit data in a timely manner. A comparison of the end date of service to the encounter submission date was completed and it was found that most encounters are submitted to MDH within one month of the date of service. A spike in submissions is noted in April, likely due to the rate-setting encounter data submission deadline. As noted, JMS submits most of its encounters more than one month after the date of service, and UMHP submitted nearly 4% of encounters one year after the date of service.
- Monitor PCP visits by MCO in future encounter data validations. This report determined the percentage of enrollees with a PCP visit by MCO to establish a baseline for analysis. Because the rates varied only slightly among MCOs, the data did not indicate any errors or outliers.
- Review the baseline data provided for volume of inpatient visits, ED visits, and observation stays by MCO, and compare trends in future annual encounter data validations. Trends across MCOs were relatively similar. Reasonable assumptions for future data include small numbers of inpatient hospitalizations, observation stays, and ED visits compared to the total CY 2017 encounter data. The percentages of each service type should also remain consistent between MCOs.
- Review and audit the participant level reports provided by Hilltop for pregnancy, dementia, and over 65/missing age outlier data. MCOs submitting the encounter outliers should be notified and demographic information should be updated as needed.
- Instruct MCOs to caution providers on the use of appropriate codes that reflect what is documented in the medical record. The mismatch in rates is due to either incorrect codes or a lack of medical record documentation.
- Revision of the current rate of oversampling to reflect a reduction in the oversample of IP and OP, with a slight increase in the oversampling of physician visits, to ensure adequate numbers of medical records are received to meet the required sample size.

- Communicate with provider offices to reinforce the requirement to supply all supporting medical record documentation for the encounter data review so that all minimum samples can be met.

Conclusion

HealthChoice is a mature managed care program, and overall, analysis of the electronic encounter data indicates that the data are complete, accurate, and valid. The MCOs have similar distributions of rejections, types of encounters, and outliers, except where specifically noted above. This analysis did identify minor outliers that merit further monitoring and investigation by MDH. Continuing to work with each MCO to address any identified discrepancies will increase MDH's ability to assess the efficiency and effectiveness of the Medicaid program.

Based on the Medicaid and CHIP Managed Care Final Rule and federal guidance, MDH modified its regulations and managed care contracts to establish minimum elements for encounter data to improve the accuracy and completeness of submissions. In the reporting requirements section of the CY 2019 managed care contract, MCOs now must ensure they transmit the following encounter information at a minimum: Enrollee and provider identifying information; service, procedure, and diagnoses codes; allowed, paid, enrollee responsibility, and third-party liability amounts; and service, claims submission, adjudication, and payment dates (Section II.I.5, pg. 11). This requirement is echoed in Maryland regulation at COMAR 10.09.65.15B (3).

The HealthChoice MCOs were found to have information systems in place that produce accurate and complete encounter data. The MCOs use standard forms and coding schemes that allow for capturing appropriate data elements for claims processing. The encounter data submitted by the HealthChoice MCOs for CY 2017 can be considered reliable for reporting purposes, as the EDV overall match rate was 94.8%. This rate exceeded the recommended match rate standard of 90% for EDV set by Qlarant. The CY 2017 overall match rate was a 0.7 percentage point decrease from the CY 2016 rate of 95.5%, and one percentage point below the CY 2015 rate of 96%. While the inpatient and office visit match rates increased in CY 2017, these were offset by the 5.4 percentage point decrease in the outpatient rate. HealthChoice MCOs inpatient, outpatient, and office visit rates demonstrated little variation from CY 2015 to CY 2017, with no MCOs requiring CAPs.