Fiscal Year 2020–2021 412 Encounter Data Validation Over-Read Report

for Denver Health Medical Plan

June 2021

Contents

In fiscal year (FY) 2020–2021, the Colorado Department of Health Care Policy and Financing (the Department) contracted Health Services Advisory Group, Inc. (HSAG) to conduct encounter data validation (EDV) among the Department's contracted limited managed care capitated initiative plans (Medicaid managed care organizations [MCOs]) as an optional external quality review (EQR) activity under the Centers for Medicare & Medicaid Services (CMS) regulations released in October 2019.[1-1] The 412 EDV among physical health encounters has been an annual EQR activity for **Denver Health Medical Plan** (**DHMP**) since FY 2015–2016.

The study assessed the Medicaid MCOs' data validation capacity among physical health encounters submitted to the Department by each Medicaid MCO. The study evaluated each Medicaid MCO's compliance with State standards regarding encounter data submission, as well as the consistency and accuracy with which each Medicaid MCO validated encounter data using medical record reviews.

This report presents EDV findings for the **DHMP** MCO.

To facilitate this assessment, the Department randomly selected 103 final, adjudicated physical health encounters, with paid dates between October 1, 2019, and September 30, 2020, from four distinct encounter types (i.e., a total of 412 encounters) that **DHMP** will independently validate against medical records. These encounter types included services rendered in federally qualified health centers (FQHCs), as well as in inpatient, outpatient, and professional settings. **DHMP** submitted a data file containing the validation results for the 412 cases and an Encounter Data Quality Report to HSAG and the Department.

To facilitate **DHMP**'s EDV tasks the Department developed and implemented the *Annual MCO Encounter Data Quality Review Guidelines* (guidelines). The guidelines include file format and reporting requirements, and a timeline to guide **DHMP** in conducting its internal validation and using the results to prepare the Encounter Data Quality Report for the Department.

The Department contracted HSAG to evaluate **DHMP**'s capacity to internally validate encounters through an independent assessment of the Encounter Data Quality Report submitted by **DHMP**. Specifically, the Department requested that HSAG complete the following FY 2020–2021 412 EDV over-read tasks:

1. Conduct a desk review of **DHMP**'s validation process, including any process documentation submitted by **DHMP**.
2. Conduct a review of medical records for cases randomly selected from each encounter type's 103 sample list, which was generated by the Department.

[1-1] Department of Health and Human Services, Centers for Medicare & Medicaid Services. *Protocol 5. Validation of Encounter Data Reported by the Medicaid and CHIP Managed Care Plan: An Optional EQR-Related Activity*, October 2019. Available at: https://www.medicaid.gov/medicaid/quality-of-care/downloads/2019-eqr-protocols.pdf. Accessed on: Jun 11, 2021.

3. Produce a report for **DHMP** containing findings specific to each encounter type, including a statement regarding HSAG's assessment of the accuracy of **DHMP**'s internal validation results.

Figure 1-1 diagrams the high-level steps involved in HSAG's 412 EDV over-read process, beginning in the upper left corner of the image. HSAG's FY 2020–2021 412 EDV methodology is presented in Appendix A.

Figure 1-1—FY 2020–2021 412 EDV Over-Read Process

1) The Department works with HSAG and the MCOs to finalize the Guidelines and send sampling methodology to HSAG

2) The Department distributes the final Guidelines and MCO 412-sample case list to each MCO & HSAG

3) MCOs procure and review medical records for 412 sampled encounter lines and submit 412-case EDV Response Files to the Department & HSAG

4) HSAG distributes the MCO-specific 80-case Over-Read Sample List to the MCOs

5) MCOs send their EDV review materials for the 80-case Over-Read Samples and their Encounter Data Quality Reports to the Department & HSAG

6a) HSAG overreads each MCO's EDV results using each MCO's review materials

6b) HSAG conducts a desk review of each MCO's Encounter Data Quality Report

7) HSAG prepares MCO-specific Reports with desk review and EDV Over-Read results

8) HSAG produces final MCO-specific Reports with the Department's review and approval

Results

Table 1-1 summarizes the four service coding accuracy tables submitted to HSAG and the Department in **DHMP**'s Encounter Data Quality Report. Among the four encounter types, the required data elements reviewed for inpatient cases were more likely to be supported by the medical record documentation compared to the remaining encounter types. Among inpatient cases, greater than 90.0 percent of each of the data elements were supported by the medical records. **DHMP** reported the lowest rates of medical record support among the professional cases and FQHC cases.

Table 1-1—DHMP Self-Reported Service Coding Accuracy Summary

Data Element	Inpatient		Outpatient		Professional		FQHC	
	Count of Cases Supported by Medical Record[1]	Percent of Cases Supported by Medical Record[2]	Count of Cases Supported by Medical Record[1]	Percent of Cases Supported by Medical Record[2]	Count of Cases Supported by Medical Record[1]	Percent of Cases Supported by Medical Record[2]	Count of Cases Supported by Medical Record[1]	Percent of Cases Supported by Medical Record[2]
Date of Service	97	94.2%	101	98.1%	89	86.4%	103	100.0%
Through Date	97	94.2%	—	—	—	—	—	—
Diagnosis Code	94	91.3%	97	94.2%	71	68.9%	87	84.5%
Surgical Procedure Code	98	95.1%	—	—	—	—	—	—
Procedure Code	—	—	90	87.4%	81	78.6%	79	76.7%
Procedure Code Modifier	—	—	100	97.1%	81	78.6%	101	98.1%
Discharge Status	96	93.2%	—	—	—	—	—	—
Units	—	—	100	97.1%	87	84.5%	97	94.2%

[1] This column aligns with the Numerator column found in the service coding accuracy tables of DHMP's Encounter Data Quality Report.

[2] This column aligns with the Overall% column found in the service coding accuracy tables of DHMP's Encounter Data Quality Report.

"—" Indicates that DHMP was not required to validate the data element for the encounter type.

As shown in Table 1-2, HSAG's over-read results indicate complete case-level agreement with **DHMP**'s internal validation results for 73 of the 80 sampled cases, resulting in a 91.3 percent complete case-level agreement rate. The total case-level agreement rate is less than the 96.3 percent total agreement reported by HSAG for the FY 2019–2020 412 EDV. Additionally, HSAG agreed with 98.1 percent of **DHMP**'s internal validation results for the total number of individual data elements reviewed. This number is similar to the 98.3 percent agreement rate reported for **DHMP** in FY 2019–2020.

Table 1-2—FY 2020–2021 HSAG Over-Read Results by Percent of Cases in Total Agreement and Percent of Element Accuracy, by Encounter Type

Encounter Type	Case-Level Accuracy		Element-Level Accuracy	
	Total Number of Over-Read Cases	Percent With Complete Agreement	Total Number of Over-Read Elements	Percent With Complete Agreement
Inpatient	20	100.0%	120	100.0%
Outpatient	20	90.0%	100	97.0%
Professional	20	100.0%	100	100.0%
FQHC	20	75.0%	100	95.0%
Total	**80**	**91.3%**	**420**	**98.1%**

HSAG performed additional tasks to evaluate the Department's role in the EDV and to identify potential concerns with the 412-case sample. First, HSAG performed a desk review of the Department's sampling methodology, assessing documentation that outlined key steps in the Department's generation of the 412-case sample. HSAG's reviewers confirmed that the Department took steps to select a random sample of unique encounters from the four service categories of interest within the specified measurement period. However, the Department provided no details regarding a run-out interval between the study measurement period and the date on which the Department compiled the encounters for sample generation. Depending on the Department's data collection and storage processes, the length of a run-out interval prior to sampling could limit the encounters included in the study, biasing the sample toward encounters for services occurring earlier in the study period.

Second, HSAG reviewed **DHMP**'s Encounter Data Quality Report, confirming that **DHMP** took steps to follow the Department's guidelines to ensure trained staff members were assigned to the EDV and to create a document to capture EDV information. However, **DHMP**'s report noted that its EDV tool contained no built-in logic to identify possible errors associated with manual data entry. HSAG's reviewers identified one element-level disagreement that appeared to be the result of a data entry error by **DHMP**.

The Department continues to transition its encounter data process to a new Medicaid Management Information System (MMIS), interChange; **DHMP** will submit encounter data directly into the MMIS. For validation purposes, **DHMP** will continue to submit encounter data flat files to the Department in parallel with MMIS submissions for a period of time determined by the Department. This change to the encounter data process will require enhanced data monitoring by the Department and **DHMP** to ensure encounter data timeliness and accuracy as well as comparability between encounter data provided by **DHMP** under the new and legacy systems.

Conclusions

The annual encounter data quality review study was designed to assess the consistency and accuracy with which each Colorado Medicaid MCO validates its physical health encounter data using medical record reviews. The service coding accuracy results of **DHMP**'s EDV show a wide range of coding accuracy rates (i.e., medical record support of the data element) within the different encounter types as well as between the different encounter types. The five data elements reviewed for inpatient cases all have accuracy rates greater than 90.0 percent. However, among the professional cases, none of the accuracy rates are above 87.0 percent with the lowest accuracy rate in the *Diagnosis Code* element (68.9 percent). The FQHC cases show a wide range of accuracy rates with a high of 100.0 percent for *Date of Service*, to a low of 76.7 percent for *Procedure Code*.

Results from HSAG's FY 2020–2021 412 EDV over-read (summarized in Table 1-2) suggest a high level of confidence that **DHMP**'s independent validation findings accurately reflect the encounter data quality summarized in **DHMP**'s service coding accuracy results. Overall, the FY 2020–2021 results indicate complete case-level agreement with **DHMP**'s internal validation results for 91.3 percent of cases and an element-level agreement rate of 98.1 percent.

DHMP's service coding accuracy results indicate that 15.0 percent or more of the sampled professional and FQHC cases had diagnosis or procedure codes that were not supported by medical record documentation. HSAG's over-read of 80 sampled cases found that HSAG generally agreed with **DHMP**'s results. HSAG's review of the study documentation provided by the Department and **DHMP** suggests that all parties followed the guidelines while conducting the EDV. The high level of over-read agreement and the well-documented EDV combined with the varying service coding accuracy rates support the conclusion that **DHMP** has targeted opportunities to improve its encounter data quality. This points to the completeness, accuracy, and timeliness of encounter data as potential targets for root cause analysis.

Analytic Considerations

Various factors associated with this study can affect the validity or interpretation of the data presented in this report. The following analytic considerations should be considered when reviewing this report.

- Each MCO conducted medical record procurement for EDV cases between January 6, 2021, and March 12, 2021, and the FY 2020–2021 412 EDV assessed final paid encounters with paid dates from October 1, 2020, through September 30, 2020. During each of these time frames, the coronavirus disease 2019 (COVID-19) public health emergency may have affected the timeliness of providers' data submissions to the MCOs, as well as the MCOs' ability to procure medical records from providers' offices in a timely manner. It is beyond the scope of the current EDV to evaluate the impact of the public health emergency on the timeliness and/or accuracy of the MCOs' physical health encounter data.

- A sample size of 412 encounters is utilized in this study to reduce the need for resources. It is important that the sampling methodology utilized by the Department ensures that the sample is representative of all encounters eligible for study inclusion. HSAG has provided recommendations to the Department meant to ensure that the methodology is well documented and thoroughly described.

- Medical record abstraction requires the expertise of medical coders who may apply varying, though legitimate, interpretations for coding rules and processes. Such variation between HSAG's reviewers and **DHMP**'s reviewers may lead to reduced agreement rates among the over-read results. To minimize the effects of this variation, the Department and HSAG solicited **DHMP**'s input on the guidelines, and **DHMP** was directed to include abstraction notes to communicate its decisions and findings to HSAG for specific review scenarios.

Recommendations

The Department designed this study to assess the accuracy with which **DHMP** validates physical health encounters in support of the Department's overall encounter data quality efforts. Therefore, HSAG recommends that findings associated with this EDV be used for the Department's information and not for performance measurement or compliance monitoring purposes.

Based on the EDV and over-read results described in this report, HSAG recommends the Department collaborate with **DHMP** to identify best practices regarding provider education to support service coding accuracy. Identifying such practices may involve requesting and reviewing copies of **DHMP**'s provider training and/or corrective action documentation, reviewing **DHMP**'s policies and procedures for monitoring providers' physical health encounter data submissions, and verifying that **DHMP** is routinely monitoring encounter data quality beyond the annual 412 EDV. Detailed recommendations for the Department and **DHMP** are presented in Section 3.

Timely, accurate encounter data require ongoing efforts from multiple stakeholders among the Department, **DHMP**, and **DHMP**'s contracted providers. As FY 2020–2021 is the sixth year of the 412 EDV for **DHMP**, focused quality improvement efforts are underway, including an annual EQR activity in which the Department requires **DHMP** to develop and implement a Quality Improvement Plan based on its prior year's 412 EDV service coding accuracy results. The Department provided no additional input on quality improvement actions resulting from recommendations in the FY 2019–2020 412 EDV report.

HSAG compiled the FY 2020–2021 412 EDV findings based on three tasks: a desk review of the Department's sampling methodology, a desk review of **DHMP**'s internal EDV methodology, and an over-read validation of a sample of **DHMP**'s 412 EDV medical record review cases.

Desk Review of the Department's Sampling Methodology

The Department provided HSAG with a brief description of the process used to generate a random sample of **DHMP**'s encounters. The Department's documentation listed the criteria by which it assigned encounters to service categories and noted that it restricted the sample to final, adjudicated encounters with paid dates between October 1, 2019, and September 30, 2020. The Department also detailed the random sampling process for identifying 103 unique encounters per encounter type and randomly selecting a single encounter line; the Department defined encounters using the member identification data field. The Department did not include any information documenting the steps taken to verify that the correct sample frame was chosen, or to validate that the final sample was representative of the sampling frame. Based on the information provided, HSAG was unable to determine if the Department ensured that the sample was representative of the underlying data.

HSAG reviewed the sample list provided by the Department, the sampling description, and the portion of sampling code that the Department reported using to generate the sample. The Department created the sample by identifying a category of service and selecting 10 percent of the claim lines within that category. Next, a random value was assigned to each line and the claim lines were sorted based on the random value. The claim lines were then deduplicated and the top 103 remaining lines were selected to create the sample. The Department's documentation indicated that these steps were repeated for each of the four service categories.

The Department continues to transition its encounter data process to a new MMIS, interChange; **DHMP** will submit encounter data directly into the MMIS. For validation purposes, **DHMP** will continue to submit encounter data flat files to the Department in parallel with MMIS submissions for a period of time determined by the Department. This change to the encounter data process will require enhanced data monitoring by the Department and **DHMP** to ensure encounter data timeliness and accuracy as well as comparability between encounter data provided by **DHMP** under the new and legacy systems.

Desk Review of DHMP's Internal Validation Methodology

To provide context for **DHMP**'s service coding accuracy results, the Department requested **DHMP**'s internal validation methodology documentation as a component of the Encounter Data Quality Report. HSAG's review of **DHMP**'s internal validation methodology documentation verified the presence of:

- A list of the coding guidelines referenced during **DHMP**'s internal validation process.
- A description of the record procurement and validation process, including the use of a company subsidiary (i.e., Denver Health Enterprise Compliance Services within Denver Health and Hospital Authority) for various tasks.
- A brief description of the validation tool, a shared Microsoft (MS) Excel spreadsheet, and a brief description of the instructions provided to the reviewers.
- The credentials, training, and experience of all reviewers.
- The interrater reliability (IRR) testing process for validation of staff members.

HSAG also reviewed **DHMP**'s self-reported service coding accuracy summary results containing **DHMP**'s validation results by encounter type. This information was submitted as part of **DHMP**'s Encounter Data Quality Report.

Overall, **DHMP**'s reviewers reported that the reviewed requirements for the inpatient encounters were more likely to be supported by the medical record documentation compared to the requirements among the other encounter types. As seen in Table 2-1, medical records supported greater than 90.0 percent of each of the data elements, according to **DHMP** reviewers. The highest rate of medical record support was for *Surgical Procedure Code* (95.1 percent) and the lowest was *Diagnosis Code* (91.3 percent).

Table 2-1—DHMP Self-Reported Service Coding Accuracy Summary for Inpatient Encounters

Data Element	Numerator	Excluded/ Does Not Apply	Total Denominator	Modified Denominator	Overall Percent	Modified Percent
Date of Service (Service_Date)	97	0	103	103	94.2%	94.2%
Through Date (Thru_Date)	97	0	103	103	94.2%	94.2%
Diagnosis Code (Diag_Code_1)	94	0	103	103	91.3%	91.3%
Surgical Procedure Code (SurgicalProcedure1)	98	0	103	103	95.1%	95.1%
Discharge Status (Discharge_Status)	96	0	103	103	93.2%	93.2%

Table 2-2 presents **DHMP**'s self-reported service coding accuracy for the outpatient EDV cases. The *Date of Service* element was most likely to be supported by the medical record documentation (98.1 percent) while the *Procedure Code* element was least likely to be supported by the medical record documentation (87.4 percent).

Table 2-2—DHMP Self-Reported Service Coding Accuracy Summary for Outpatient Encounters

Data Element	Numerator	Excluded/ Does Not Apply	Total Denominator	Modified Denominator	Overall Percent	Modified Percent
Date of Service (Service_Date)	101	0	103	103	98.1%	98.1%
Diagnosis Code (Diag_Code_1)	97	0	103	103	94.2%	94.2%
Procedure Code (Proc_Code)	90	0	103	103	87.4%	87.4%
Procedure Code Modifier (Proc_Code_Modifier)	100	0	103	103	97.1%	97.1%
Units (Quantity)	100	0	103	103	97.1%	97.1%

Table 2-3 presents **DHMP**'s self-reported service coding accuracy for the professional EDV cases. The rates of medical record support seen among the professional cases, *Diagnosis Code* (68.9 percent), *Procedure Code* (78.6 percent), *Procedure Code Modifier* (78.6 percent) and *Units* (84.5 percent), were among the lowest of all four encounter types.

Table 2-3—DHMP Self-Reported Service Coding Accuracy Summary for Professional Encounters

Data Element	Numerator	Excluded/ Does Not Apply	Total Denominator	Modified Denominator	Overall Percent	Modified Percent
Date of Service (Service_Date)	89	1	103	102	86.4%	87.3%
Diagnosis Code (Diag_Code_1)	71	0	103	103	68.9%	68.9%
Procedure Code (Proc_Code)	81	0	103	103	78.6%	78.6%
Procedure Code Modifier (Proc_Code_Modifier)	81	0	103	103	78.6%	78.6%
Units (Quantity)	87	0	103	103	84.5%	84.5%

Table 2-4 presents **DHMP**'s self-reported service coding accuracy for the FQHC EDV cases. The *Date of Service* element was most likely to be supported by the medical record documentation (100.0 percent), while the *Procedure Code* element was least likely to be supported by the medical record documentation (76.7 percent).

Table 2-4—DHMP Self-Reported Service Coding Accuracy Summary for FQHC Encounters

Data Element	Numerator	Excluded/ Does Not Apply	Total Denominator	Modified Denominator	Overall Percent	Modified Percent
Date of Service (Service_Date)	103	0	103	103	100.0%	100.0%
Diagnosis Code (Diag_Code_1)	87	0	103	103	84.5%	84.5%
Procedure Code (Proc_Code)	79	0	103	103	76.7%	76.7%
Procedure Code Modifier (Proc_Code_Modifier)	101	0	103	103	98.1%	98.1%
Units (Quantity)	97	0	103	103	94.2%	94.2%

## Over-Read of Sample Cases by Encounter Type

The EDV response file submitted to HSAG and the Department by **DHMP** contained all required fields and aligned with the EDV response file layout required by the Department and outlined in the guidelines. The EDV response data layout was defined in the guidelines and is presented in Appendix A of this report. Additionally, **DHMP** reported that it was unable to procure medical records for two of the 80 sampled over-read cases.

The remainder of this section details HSAG's over-read findings by encounter type.

Inpatient Cases

Figure 2-1 presents the aggregate results from HSAG's over-read of the 20 inpatient cases. All six individual data elements have a percent of agreement of 100.0 percent, where 100.0 percent represents complete agreement between **DHMP**'s internal abstraction results and HSAG's over-read results, and 0.0 percent represents complete disagreement.

Figure 2-1—Aggregated Percent of Agreement Between HSAG's Over-Read and DHMP's Internal EDV Findings, by Data Element for Inpatient Cases
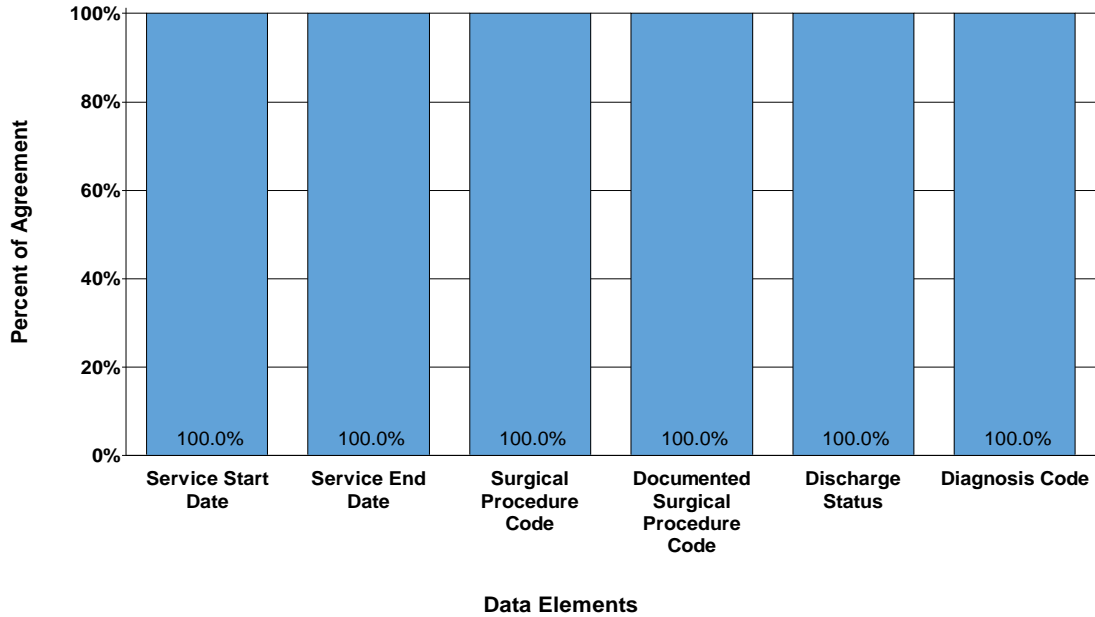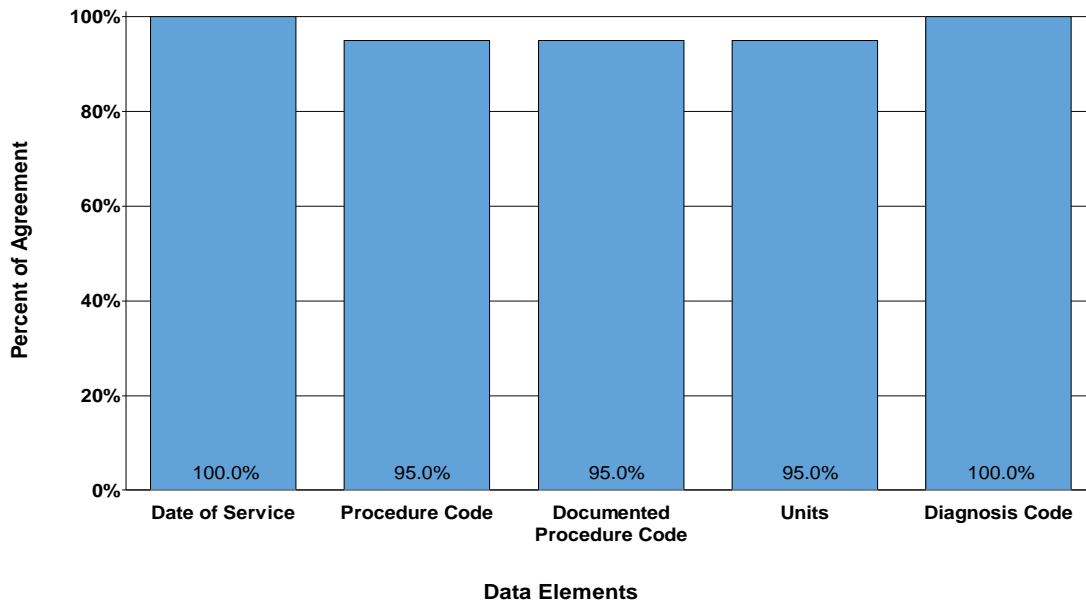

Complete agreement for a sampled inpatient case occurred when HSAG's over-read results indicated agreement with **DHMP**'s validation response for each of the six assessed data elements. Among the 20 sampled inpatient cases, HSAG's over-read results demonstrated complete agreement with all data elements in 20 cases, a 100.0 percent aggregate agreement rate.

Outpatient Cases

Figure 2-2 presents the aggregate results from HSAG's over-read of the 20 outpatient cases. Agreement values range from 95.0 percent to 100.0 percent for individual data elements, where 100.0 percent represents complete agreement between **DHMP**'s internal validation results and HSAG's over-read results, and 0.0 percent represents complete disagreement.

Figure 2-2—Aggregated Percent of Agreement Between HSAG's Over-Read and DHMP's Internal EDV Findings, by Data Element for Outpatient Cases
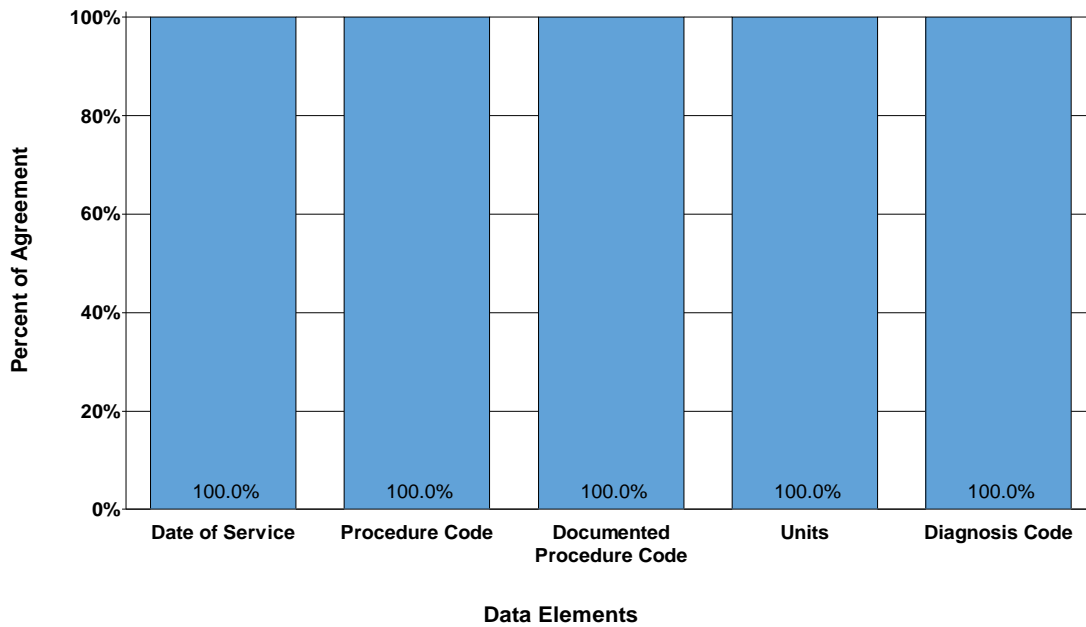

Complete agreement occurred when HSAG's over-read results indicated agreement with **DHMP**'s validation response for each of the five individual data elements assessed for a sampled outpatient case. Among the 20 sampled outpatient cases, HSAG's over-read results demonstrated complete agreement with all data elements in 18 cases, a 90.0 percent aggregate agreement rate. The highest agreement rates (each 100.0 percent) were observed for the *Date of Service* and *Diagnosis Code* data elements. The remaining data elements (*Procedure Code*, *Documented Procedure Code*, and *Units*) each had agreement rates of 95.0 percent.

Professional Cases

Figure 2-3 presents the aggregate results from HSAG's over-read of the 20 professional cases. Agreement values are 100.0 percent for individual data elements, where 100.0 percent represents complete agreement between **DHMP**'s internal validation results and HSAG's over-read results, and 0.0 percent represents complete disagreement.

Figure 2-3—Aggregated Percent of Agreement Between HSAG's Over-Read and DHMP's Internal EDV Findings, by Data Element for Professional Cases
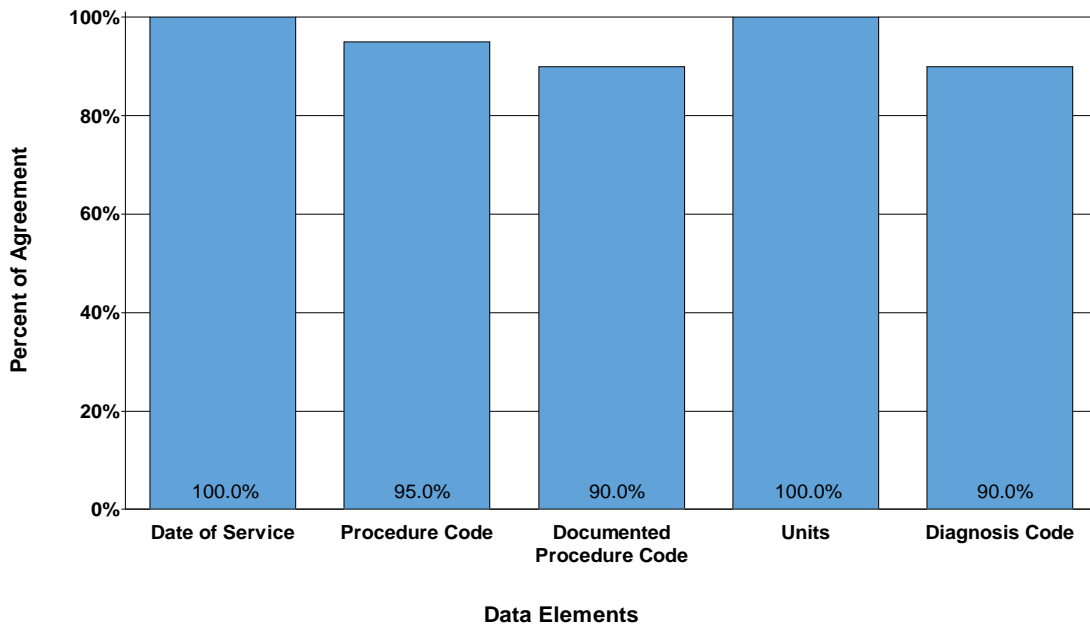

Complete agreement for a sampled professional case occurred when HSAG's over-read results indicated agreement with **DHMP**'s validation response for each of the five assessed data elements. Among the 20 sampled professional cases, HSAG's over-read results demonstrated complete agreement with all data elements in 20 cases, a 100.0 percent aggregate agreement rate.

FQHC Cases

Figure 2-4 presents the aggregate results from HSAG's over-read of the 20 FQHC cases. Agreement values range from 90.0 percent to 100.0 percent for individual data elements, where 100.0 percent represents complete agreement between **DHMP**'s internal validation results and HSAG's over-read results, and 0.0 percent represents complete disagreement.

Figure 2-4—Aggregated Percent of Agreement Between HSAG's Over-Read and DHMP's Internal EDV Findings, by Data Element for FQHC Cases

Complete agreement occurred when HSAG's over-read results indicated agreement with **DHMP**'s validation response for each of the five individual data elements assessed for a sampled FQHC case. Among the 20 sampled FQHC cases, HSAG's over-read results demonstrated complete agreement with all data elements in 15 cases, a 75.0 percent aggregate agreement rate. HSAG's over-read results agreed with **DHMP**'s responses for all cases (i.e., complete agreement) for the *Date of Service* and *Units* data elements. The lowest agreement rate (90.0 percent) was observed for the *Documented Procedure Code* and *Diagnosis Code* data elements.

Conclusions

The annual encounter data quality review study was designed to assess the consistency and accuracy with which each Colorado Medicaid MCO validates its physical health encounter data using medical record reviews. **DHMP**'s EDV service coding accuracy results present a wide range of accuracy rates (i.e., medical record support of the data element) within the different encounter types as well as between the different encounter types. The five data elements reviewed for inpatient cases all have accuracy rates greater than 90.0 percent. However, among the professional cases, none of the accuracy rates are greater than 87.0 percent with the lowest accuracy rate in the *Diagnosis Code* element (68.9 percent). The FQHC cases show a wide range of accuracy rates with a high of 100.0 percent for *Date of Service*, to a low of 76.7 percent for *Procedure Code*.

Results from HSAG's FY 2020–2021 412 EDV over-read (summarized in Table 1-2) suggest a high level of confidence that **DHMP**'s independent validation findings accurately reflect its encounter data quality. Overall, the FY 2020–2021 results indicate complete case-level agreement with **DHMP**'s internal validation results for 91.3 percent of cases and an element-level agreement rate of 98.1 percent.

HSAG also reported the aggregated percent of agreement between HSAG's over-read results and **DHMP**'s internal EDV findings, by encounter type and data element. For both inpatient and professional cases, HSAG reviewers agreed with **DHMP**'s reviewers on 100.0 percent the data elements, where 100.0 percent represents complete agreement between **DHMP**'s internal abstraction results and HSAG's over-read results. Among outpatient cases, the percent of agreement ranged from 100.0 percent (*Date of Service* and *Diagnosis Code*) and 95.0 percent (*Procedure Code*, *Documented Procedure Code*, and *Units*). Finally, among the FQHC cases, the percent of agreement ranged from 100 percent agreement (*Date of Service* and *Units*) to 90.0 percent (*Documented Procedure Code* and *Diagnosis Code*).

The service coding accuracy results show that 15.0 percent or more of the sampled professional and FQHC cases had diagnosis or procedure codes that were not supported by medical record documentation. HSAG's over-read of 80 sampled cases found that HSAG generally agreed with **DHMP**'s results. The study documentation, provided by the Department and **DHMP**, show that all parties followed the project guidelines and HSAG found no systematic errors in its review. The high level of agreement and the well-documented and administered EDV combined with the low rates seen in the service coding accuracy tables suggest that the data in the Encounter Data Quality Report are valid. This points to the completeness, accuracy, and timeliness of encounter data as potential targets for root cause analysis.

Analytic Considerations

Various factors associated with this study can affect the validity or interpretation of the data presented in this report. The following analytic considerations should be considered when reviewing this report.

- Each MCO conducted medical record procurement for EDV cases between January 6, 2021, and March 12, 2021, and the FY 2020–2021 412 EDV assessed encounters with paid dates from October 1, 2020, through September 30, 2020. During each of these time frames, the COVID-19 public health emergency may have affected the timeliness of providers' data submissions to the MCOs, as well as the MCOs' ability to procure medical records from providers' offices in a timely manner. It is beyond the scope of the current EDV to evaluate the impact of the public health emergency on the timeliness and/or accuracy of the MCOs' physical health encounter data.

- A sample size of 412 encounters is utilized in this study to reduce the need for resources. It is important that the sampling methodology utilized by the Department ensures that the sample is representative of all encounters eligible for study inclusion. HSAG has provided recommendations to the Department meant to ensure that the methodology is well documented and thoroughly described.

- Medical record abstraction requires the expertise of medical coders who may apply varying, though legitimate, interpretations for coding rules and processes. Such variation between HSAG's reviewers and **DHMP**'s reviewers may lead to reduced agreement rates among the over-read results. To minimize the effects of this variation, the Department and HSAG solicited **DHMP**'s input on the guidelines, and **DHMP** was directed to include abstraction notes to communicate its decisions and findings to HSAG for specific review scenarios.

Recommendations

The Department designed this study to assess the accuracy with which **DHMP** validates physical health encounters in support of the Department's overall encounter data quality efforts. Therefore, HSAG recommends that findings associated with this independent EDV be used for the Department's information and not for performance measurement or compliance monitoring purposes.

Based on the EDV and over-read results described in this report, HSAG recommends the Department collaborate with **DHMP** to identify best practices regarding provider education to support service coding accuracy. Identifying such practices may involve requesting and reviewing copies of **DHMP**'**s** provider training and/or corrective action documentation, reviewing **DHMP**'s policies and procedures for monitoring providers' physical health encounter data submissions, and verifying that **DHMP** is routinely monitoring encounter data quality beyond the annual 412 EDV.

HSAG's FY 2019–2020 over-read results show a nominal decrease in agreement between HSAG's and **DHMP**'s reviewers compared to the previous year, and systematic errors do not appear to play a role in the decrease. As such, selected recommendations from the FY 2019–2020 study are still relevant. Based

on HSAG's document review, **DHMP**'s service coding accuracy results, and HSAG's over-read results, HSAG offers the following recommendations to improve the quality of **DHMP**'s encounter data:

- The Department's sampling methodology was limited to SQL code and a bulleted summary of the SQL code steps; therefore, HSAG recommends that the Department thoroughly document the sampling methodology to ensure the sample is representative of all encounters eligible for study inclusion.
    - The Department's Rates Section should update the MS Word sampling documentation to define the terms used in the documentation, include an excerpt of sampling code, and describe any limitations on the sample frame (e.g., how to limit the universe of encounters or the code values for the different encounter types).
    - The Department's Rates Section should perform validity checks on the annual 412 EDV sample lists to verify that each Medicaid MCO's sample is representative of the encounter data from which it was selected (e.g., compare distribution of the submission dates and/or providers between the sampled encounters and the sample frame).
    - The Department's Rates Section should verify the accuracy and format of the data fields and values within the 412-case sample list used to identify each of the cases.
- While the service coding accuracy section of **DHMP**'s Encounter Data Quality Report provided detailed information on medical record procurement and the coding standards considered by its reviewers, HSAG recommends the following opportunities to supply additional details regarding **DHMP**'s EDV process:
    - The report offered only a limited description of **DHMP**'s reviewer training and supporting materials. HSAG recommends that **DHMP** thoroughly document its EDV training materials and procedures, including examples of written training materials and/or decision documents.
    - The report states that the internal EDV data collection tool does not contain any automated logic to detect possible data entry errors. HSAG recommends that **DHMP** apply validation logic (e.g., drop down lists) to minimize the occurrence of data entry errors.
- **DHMP**'s service coding accuracy results show greater than 15.0 percent of cases with diagnosis code and/or procedure code data values not supported by medical record documentation for professional and FQHC encounters, as well as variation in disagreement rates between service categories. To ensure that **DHMP** has implemented quality improvement actions to address these encounter data deficiencies, HSAG recommends that the Department's contract administrator for **DHMP**:
    - Request copies of **DHMP**'s provider training and/or corrective action documentation.
    - Request copies of **DHMP**'s policies and procedures for monitoring providers' data submissions.
    - Collaborate with the Department's Rates Section to review **DHMP**'s encounter data quality documents and verify that **DHMP** is monitoring encounter data quality and ensuring that providers are trained to submit encounters that accurately reflect the medical record documentation.

Timely, accurate encounter data require ongoing efforts from multiple stakeholders among the Department, **DHMP**, and **DHMP**'s contracted providers. As FY 2020–2021 is the sixth year of the independent 412 EDV for **DHMP**, focused quality improvement efforts are underway, including an annual EQR activity in which the Department requires **DHMP** to develop and implement a Quality Improvement Plan based on its prior year's 412 EDV service coding accuracy results. The Department provided no additional input on quality improvement actions resulting from recommendations in the FY 2019–2020 412 EDV report.

HSAG's independent EDV consisted primarily of an assessment of **DHMP**'s internal validation results through an over-read of medical records for a sample of randomly selected encounters. HSAG recommended a sampling strategy to the Department to ensure that selected cases were generated randomly from a representative base of encounters eligible for inclusion in this study. HSAG's review of the Department's sampling protocol was limited to an assessment of sampling methodology documentation provided by the Department.

The second component of HSAG's independent EDV was to evaluate whether **DHMP**'s internal validation of the sampled encounters against members' medical records was accurate and consistent with standard coding manuals. HSAG received a response file containing **DHMP**'s internal validation results for the 412 cases sampled by the Department. Prior to receiving **DHMP**'s internal validation results, HSAG generated an over-read sample of 20 cases for each of the four service categories (80 cases overall). The evaluation process included the following steps:

1. Generation of Over-Read Samples

The Department developed a 412-case sample of final, adjudicated **DHMP** encounters paid between October 1, 2019, and September 30, 2020, for four physical health service categories.[A-1] The Department submitted the sample lists to **DHMP** and HSAG in January 2021; **DHMP** then conducted its internal validation on the sampled encounters.

HSAG used the sample lists from the Department to generate an over-read sample using a two-stage sampling approach. Under this sampling approach, HSAG randomly selected 20 identification numbers for unique individuals from each encounter type and then selected a single encounter line for each of the 20 individuals, resulting in a list of 20 randomly selected encounter lines per encounter type and 80 cases overall. A single health event could result in a member having encounters for both the inpatient and professional services categories; therefore, HSAG assessed the encounter type lists to ensure that no members were included in multiple encounter types.

2. Encounter Data Validation Tool Development

DHMP submitted its response file containing internal validation results for the 412 sampled cases to HSAG in March 2021. HSAG designed a web-based data collection tool and tool instructions based on the guidelines and standard national coding manuals. As a result of the unique data fields and coding standards required for inpatient encounters, HSAG's web-based tool included separate data collection screens for inpatient encounters versus those used for ambulatory-type encounters (i.e., FQHC,

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[A-1] Encounter types were identified using the review_typ field assigned to each encounter by the Department. Review_typ values of "PHY" identified professional cases, "IP" identified inpatient cases, "FQ" identified FQHC cases, and "OP" identified outpatient cases. The Department assigns claims to service categories according to a hierarchy, and each claim may be assigned to only a single category.

outpatient, and professional). A control file containing select fields from the Department's encounter data flat file as well as **DHMP**'s corresponding internal validation values for sampled cases was uploaded into the tool, permitting pre-population of encounter and validation information for each case. Pre-populated information could not be altered, and HSAG's coders were required to actively select an over-read response for each data element. Corresponding medical records procured by **DHMP** were linked to cases within the tool. The web-based tool allowed the HSAG analyst to extract MS Excel files containing encounter data, **DHMP** validation responses, and HSAG's coders' responses specific to each encounter type.

3. HSAG's Over-Read Process

HSAG evaluated the accuracy of **DHMP**'s internal validation findings in April 2020. More specifically, the HSAG reviewers validated **DHMP**'s accuracy in abstracting the providers' submitted encounter data in accordance with the national code sets: International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM); International Classification of Diseases, Tenth Revision, Procedural Modification (ICD-10-PM); Current Procedural Terminology (CPT); Healthcare Common Procedure Coding System (HCPCS); and the 1995 Evaluation and Management (E&M) documentation guidelines. HSAG's over-read did not evaluate the quality of the medical record documentation or the provider's accuracy in submitting encounter data, only whether **DHMP**'s validation responses were accurate based on the review of the supporting medical record documentation submitted by **DHMP**. All over-read results were entered into the HSAG data collection tool.

HSAG trained four certified coders to conduct the over-read. During the over-read of the ambulatory (i.e., FQHC, outpatient, and professional) encounters, the coders located the selected date of service in the submitted medical records to determine whether the ICD-10-CM and CPT or HCPCS codes pre-populated in the data collection tool from the encounter data flat file were supported by the submitted medical record documentation and in alignment with the criteria outlined in the review and code set guidelines. During the over-read of the inpatient encounters, the coders located the selected date of service in the submitted medical records to determine whether or not the ICD-10-PM and the ICD-10-CM codes pre-populated in the data collection tool from the encounter data flat file were supported by the submitted medical record documentation and in alignment with the criteria outlined in the review and code set guidelines. The HSAG coders then determined whether **DHMP** agreed or disagreed with the accuracy of the codes submitted by the provider. If the HSAG coder agreed with **DHMP**'s response, an agreement response was recorded in the tool. If the HSAG coder disagreed with **DHMP**'s response, a disagreement response was recorded in the tool. The findings of this over-read were based on HSAG's percent of agreement or disagreement with **DHMP**'s responses.

Prior to beginning abstraction, coders participated in an IRR assessment using training cases. To proceed with abstraction on study cases, coders were required to score 95 percent or higher on the post-training IRR. If this threshold was not met, the nurse manager provided retraining, including abstraction of additional test cases.

During the over-read period, HSAG conducted an ongoing IRR assessment by randomly selecting a minimum of 10 percent of cases per coder and comparing the over-read results to those from a second coder. For cases in which over-read discrepancies were identified between the first and second coders, a third "Gold Standard" review was conducted that provided a final determination regarding the appropriate over-read result. Any IRR result that fell below 95 percent required further evaluation by the nurse manager and retraining of the coder(s).

4. Analysis Process

Following completion of the over-read, the HSAG analyst exported results from the data collection tool for each encounter type. Since data elements varied by claim type, results were not aggregated across the encounter types. The analyst reviewed the coders' over-read notes, and notes requiring further information were addressed with the nurse manager.

The HSAG analyst assessed the over-read results to determine the percentage of records per encounter type for which the HSAG coder agreed with **DHMP**'s internal validation response. Results were displayed by encounter type for data elements that were abstracted by **DHMP** and overread by HSAG. Over-read analysis results were independently verified by a second HSAG analyst.

5. EDV Response Data Layout for MCOs

This section was copied from the *Annual MCO Encounter Data Quality Review Guidelines, Appendix II*. Please note that HSAG made minimal edits to the response data layout table for readability. Guidance for specific encounter data scenarios is shown following the table.

Table A-1—Response Data Layout

	Data Element (Field)	Data Description	Format	Length
0	Record_No	Sequential number for each of 412 records *This field will contain a number between 001 and 412 and align with the ROWID provided by HCPF in the 412 encounter line sample list.*	X	integer
1	Encounter_Procedure_Code	0 = No or insufficient documentation, incorrect code utilized for procedure performed 1 = Correct Code 9 = If data element does not pertain to encounter service type (i.e., for Inpatient encounters) *Required for Professional, Outpatient, and FQHC Encounters*	X	1
2	Encounter_Procedure_Code_ Modifier	0 = No or insufficient documentation, incorrect code modifier utilized for procedure performed 1 = Correct Code Modifier 9 = If data element does not pertain to encounter service type (i.e., for Inpatient encounters) *Required for Professional, Outpatient, and FQHC Encounters*	X	1

	Data Element (Field)	Data Description	Format	Length
3	Encounter_Surgical_Procedure_Code	0 = No or insufficient documentation, incorrect code utilized for surgical procedure performed 1 = Correct code 9 = If data element does not pertain to encounter service type *Required for Inpatient Encounters*	X	1
4	Encounter_Primary_Diagnosis_Code	0 = No or insufficient documentation, assignment of incorrect primary diagnosis code 1 = Correct code *Required for Inpatient, Professional, Outpatient, and FQHC Encounters*	X	1
5	Encounter_Units	0 = No or insufficient documentation, incorrect units 1 = Correct units 9 = Data element does not pertain to encounter service type (i.e., for Inpatient encounters) *Required for Professional, Outpatient, and FQHC Encounters*	X	1
6	Encounter_Service_Date	0 = No or insufficient documentation, incorrect service start date 1 = Correct service start date 9 = If data element does not pertain to encounter service type *Required for Inpatient, Professional, Outpatient, and FQHC Encounters*	X	1
7	Encounter_Thru_Date	0 = No or insufficient documentation, incorrect service end date 1 = Correct service end date 9 = If data element does not pertain to encounter service type *Required for Inpatient Encounters*	X	1
8	Encounter_Discharge_Status	0 = No or insufficient documentation, incorrect discharge status 1 = Correct discharge status 9 = If data element does not pertain to encounter service type *Required for Inpatient Encounters*	X	1
9	Doc_Procedure_Code	Enter correct procedure code if present in the supporting documentation Enter 'No Doc' if no or insufficient documentation of correct procedure code Enter 'NA' if data element does not pertain to encounter service type Enter 'NR' if data element is not populated in the encounter data line *Required for Professional, Outpatient, and FQHC Encounters*	X	7

	Data Element (Field)	Data Description	Format	Length
10	Doc_Procedure_Code_ Modifier	Enter correct procedure code modifier if present in the supporting documentation Enter 'No Doc' if no or insufficient documentation of correct procedure code modifier Enter 'NA' if data element does not pertain to encounter service type Enter 'NR' if data element is not populated in the encounter data line *Required for Professional, Outpatient, and FQHC Encounters*	X	7
11	Doc_Surgical_Code	Enter correct surgical procedure code if present in supporting documentation Enter 'No Doc' if no or insufficient documentation of correct surgical procedure code Enter 'NA' if data element does not pertain to encounter service type Enter 'NR' if data element is not populated in the encounter data line *Required for Inpatient Encounters*	X	7
12	Doc_Diag	Enter correct primary diagnosis code if present in the supporting documentation Enter 'No Doc' if no or insufficient documentation of correct diagnosis code *Required for Inpatient, Professional, Outpatient, and FQHC Encounters*	X	7
13	Doc_Units	Enter correct units if present in the supporting documentation Enter 'No Doc' if no or insufficient documentation of correct units *Required for Professional, Outpatient, and FQHC Encounters*	X	integer
14	Doc_Service_Date	Enter correct start date if present in supporting documentation Enter 'No Doc' if no or insufficient documentation of correct start date *Required for Inpatient, Professional, Outpatient, and FQHC Encounters*	X	8
15	Doc_Thru_Date	Enter correct end date if present in supporting documentation Enter 'No Doc' if no or insufficient documentation of correct end date Enter 'NA' if data element does not pertain to encounter service type *Required for Inpatient Encounters*	X	8

	Data Element (Field)	Data Description	Format	Length
16	Doc_Encounter_Discharge_ Status	Enter correct discharge status if present in supporting documentation Enter 'No Doc' if no or insufficient documentation of correct discharge status Enter 'NA' if data element does not pertain to encounter service type *Required for Inpatient Encounters*	X	8
17	E&M Guidelines Version	1 = 1995 version of Evaluation and Management Services Documentation Guidelines 2 = 1997 version of Evaluation and Management Services Documentation Guidelines 9 = Does Not Apply	X	1
18	Comments (conditionally required)	Reviewer should enter comments supporting the decision made. <u>Comments are required in the following scenarios:</u> • If no supporting medical records were provided, enter, "no documentation received from provider" • If medical records do not support the date of service and subsequent data elements were scored "0", enter, "No DOS in MR" • If a leveling tool (decision support tool) was used, enter, "refer to leveling tool: <tool name>" • If the case includes supplemental medical record pages without patient identifiers, enter, "Supplemental medical record pages without patient identifiers were submitted but not used for validation" <u>Comments are required to support the following scenarios:</u> • To provide details regarding non-specific primary diagnosis codes • To provide details regarding agreement or disagreement with the encounter start date for inpatient stays that began as an observation stay • To provide details regarding the documentation supporting an inpatient discharge status determination	X	flexible

Guidance for Specific Encounter Data Scenarios

1. To assess encounter data quality, data elements are contingent on corresponding medical record documentation. Medical records correspond to the encounter data when the member information (i.e., name, date of birth, and/or Medicaid ID), provider information, and date of service are in agreement. If the medical records match the member and provider information but the date of service is incorrect, the *Encounter_Service_Date* will be scored as "0" and the remaining data elements will be scored as "0." The Comments field should be used to indicate that all other applicable data elements were in disagreement due to the invalid date of service.

2. The MCO 412 data quality review considers individual encounter lines that are sampled from encounter data submitted to the Department by the Medicaid MCOs. Reviewers should focus on the information found in the encounter line and determine whether the encounter values are supported by medical record documentation, with the consideration that the medical record documentation may support services captured on separate encounter lines outside the scope of this review.

3. For inpatient records or other records with services occurring over a date range, the encounter date of service is acceptable if it falls within the date range.

4. In the event medical record documentation is unavailable to support the encounter, all elements will be scored as "0" or "No Doc."
   - In cases where the medical record does not contain patient identifiers on each page of the record, encounter data elements found on medical record pages without identifiers should be scored as "0" or "No Doc."

5. In the event that medical record documentation could support more than one procedure code, reviewers should note agreement with the encounter procedure code, if applicable, and use the *Comments* to note other applicable procedure codes identified in the medical record.
   - If the HCPCS code "T1015" is present in the sampled encounter, reviewers should note agreement if the medical record documentation supports at least one additional procedure code.

6. To ensure consistency between each MCO's review and the independent auditor's over-read, MCOs should provide the independent auditor with all medical records and supporting documentation used by the MCO during its 412 EDV. Examples of such documentation include internal leveling tools, crosswalks, or any other such supporting materials used by the MCO in the completion of the 412 EDV.

7. In the event that the encounter line reflects a radiology or laboratory result, supporting medical record documentation must contain a signed order listing the test to be performed and the reason for ordering the test. An interpretation and report of the result must also be included to fully support the encounter data value. Score the applicable EDV Response elements with "0" or "No Doc" if signed documentation from a qualified provider is not available to support the radiology or laboratory order.

8. The Table A-1 data elements *Procedure Code*, *Procedure Code Modifier*, and *Surgical Procedure Code* each have a response option of "NR" and Table A-2 offers examples for the use of the "NR" EDV response.

Table A-2—412 EDV Data Element "NR" Response Guidance

Encounter Line Data and Medical Record Findings	Example	Anticipated EDV Response Data
The encounter line contains no value and the medical record supports the lack of a data value.	The encounter line does not contain a procedure code modifier and the medical record supports the lack of a procedure code modifier.	Encounter_Procedure_Code_Modifier = "1" Doc_Procedure_Code_Modifier = "NR"
The encounter line contains a value and the medical record supports the data value.	The encounter line contains a modifier code (e.g., "59") and the medical record supports this modifier code.	Encounter_Procedure_Code_Modifier = "1" Doc_Procedure_Code_Modifier = "59"
The encounter line contains no value, but the medical record supports a data value.	The encounter line does not contain a modifier, but the medical record supports a procedure code modifier (e.g., "59").	Encounter_Procedure_Code_Modifier = "0" Doc_Procedure_Code_Modifier = "59"
The encounter line contains a value, but the medical record does not support the data value.	The encounter line contains a modifier value (e.g., "59"), but the medical record indicates that a procedure modifier is not needed.	Encounter_Procedure_Code_Modifier = "0" Doc_Procedure_Code_Modifier = "No Doc"