

DRIVE: Leading efforts to improve the quality of Medicaid encounter data

Introduction

In January 2017, a Government Accountability Office (GAO) report noted that available Medicaid expenditure and utilization data do not provide the Centers for Medicare and Medicaid Services (CMS) with sufficient information to consistently ensure that payments are proper or that beneficiaries have access to covered services.¹ The GAO stated that CMS couldn't assess utilization patterns for Medicaid managed care beneficiaries in more than 30 states because of unavailable or unreliable data.

This article summarizes the efforts of CMS to improve Medicaid encounter data quality and the challenges faced by states and health plans in collecting encounter data. It also outlines our Dashboard for Research, Insight, and Validation of Experience (DRIVE™) tool solution to facilitate encounter data quality efforts.²

The Challenge

Without credible data to analyze, CMS is not able to perform adequate oversight into the function of Medicaid programs. Recently, CMS has taken steps to improve the quality of encounter data it collects:³

- Implementation of its Transformed Medicaid Statistical Information System (T-MSIS), which is intended to collect significantly more information about Medicaid enrollees' eligibility and demographics, utilization and costs, and provider information.
- As part of the modernization of Medicaid managed care finalized in the spring of 2016, CMS issued new requirements for state encounter data reporting and validation, as well as potential funding reductions for incomplete encounter data.

1 GAO (January 2017). Medicaid: Program Oversight Hampered by Data Challenges, Underscoring Need for Continued Improvements. Report to Congressional Requesters. Retrieved March 21, 2017, from <http://www.gao.gov/assets/690/681924.pdf>.

2 For a more in-depth discussion of the role of encounter data in Medicaid managed care programs, please see <http://www.milliman.com/uploadedFiles/insight/2017/medicaid-encounter-data.pdf>.

3 GAO (January 2017), *ibid.* p. 15.

CMS's efforts on improving Medicaid encounter data quality

With the growth of Medicaid managed care in the last 15 years, ensuring the integrity and value of Medicaid managed care programs has taken on a greater importance to CMS. Efforts to improve Medicaid encounter data quality have been ongoing for nearly a decade. In a May 2009 report, the Office of Inspector General within the U.S. Department of Health and Human Services (HHS) recommended that CMS enforce existing encounter data reporting requirements, finding CMS accepted Medicaid Statistical Information System (MSIS) submissions without encounter data from 15 of 40 states with managed care programs.⁴

CMS has taken steps, both from a technological and regulatory perspective, to improve encounter data quality reporting. First, as part of its initiative to improve data infrastructure and technology for Medicaid, CMS created the T-MSIS data warehouse, which accepts both fee-for-service (FFS) and managed care encounter data.⁵ The T-MSIS data warehouse has been cited as CMS's key initiative to improve Medicaid data and program oversight. However, there is uncertainty regarding the timing of when all states will be actively submitting claims to the T-MSIS data warehouse on an ongoing basis.⁶

On April 25, 2016, CMS took additional regulatory action to improve encounter data quality with the release of the Medicaid managed care final rule (final rule). The final rule includes many additional oversight requirements and guidance for state Medicaid agencies and health plans, including the requirement that states must submit validated encounter data to CMS in the T-MSIS format on a monthly basis.⁷ This regulation becomes effective beginning with contracts starting on or after July 1, 2017.

4 HHS (May 2009). Medicaid Managed Care Encounter Data: Collection and Use, p. ii. Retrieved March 21, 2017, from <https://oig.hhs.gov/oei/reports/oei-07-06-00540.pdf>.

5 Medicaid.gov. Medicaid and CHIP Data Collection Systems. Retrieved March 21, 2017, from <https://www.medicare.gov/medicaid/data-and-systems/collection-systems/index.html>.

6 GAO (January 2017), *ibid.*, p. 1.

7 For additional information and discussion on encounter data reporting requirements in the final rule, please see http://www.milliman.com/uploadedFiles/insight/2016/2238HDP_20160524.pdf.

Additionally, beginning with contracts starting on or after July 1, 2018, CMS will begin withholding federal financial participation (FFP) for noncompliant data submissions. Given the time remaining to meet the requirements, many state Medicaid programs may be at risk of FFP reductions if encounter data quality efforts are not increased.

Challenges with encounter data quality efforts

In the GAO's January 2017 report, it recommended that CMS improve data gathering techniques and assist states that have challenges in providing reliable and timely data. However, there are many challenges that both states and health plans face, including nonstandard claim formats, claim adjudication edits, identification of rendering providers, and the growing prevalence of alternative payment models. *A potential hurdle encompassing all of these issues is the inability for states and health plans to mutually understand the completeness and gaps contained in encounter data stored within the state's encounter data warehouse.*

DRIVE for improving encounter data quality

Historically, many states have provided health plans with reports illustrating comparisons of the encounter data with expenditures reported by health plans to try and identify encounters that are not accepted into the state's data warehouse. However, given the amount of detail this requires, many states only perform these comparisons at an aggregate level.

With the increased regulations on encounter data in the final rule, states are required to validate the data at a more granular level (e.g., sub-capitated claims for a specific service category of a rate cell), causing historical encounter data quality reconciliation methodologies to become inadequate in addressing the requirements in the final rule.

In response to the increased encounter data validation requirements, we have created the DRIVE tool. The DRIVE tool allows states and health plans to view the encounter data in the state's data warehouse, as well as the health-plan-reported experience, using a web-based application. The flexibility of the DRIVE tool allows easy acceptance of new data, resulting in a short implementation timeline and quick turnaround times back to states and health plan partners.

DRIVE transforms previously static reconciliations into dynamic comparisons of data with drill-down capabilities, allowing states and health plans to work through encounter data quality concerns utilizing the same information. The DRIVE tool provides state and health plan personnel the following capabilities to identify areas of concern for encounter data quality:

- Compare encounter data at the service detail level from the state's encounter data warehouse with the experience reported by health plans, as shown in Figure 1 below.
- Provide a dynamic comparison of multiple data sources at an aggregate level by choosing two data dimensions to split the report, as shown in Figure 2 on page 3.
- Allow users to identify high-level issues and drill into service level drivers.
- Line chart functionality allows users to effectively visualize data over time across various dimensions in the underlying data, as shown in Figure 3 on page 3.
- Bar chart functionality allows users to effectively visualize differences in experience across multiple data dimensions, as shown in Figure 4 on page 3.
- Provides comparisons across health plans and reporting periods to facilitate additional comparisons of the encounter data, as shown in Figure 5 on page 4.

FIGURE 1: COMPARE ENCOUNTER DATA AT THE SERVICE DETAIL LEVEL

| Dynamic View | | Service Detail | | Charts | | | | | | |
|---------------------------|-------------------------------|------------------------|-----------------------|---------------------------|----------------|---------------------------|-------------------|----------------|----------------|--|
| Current Selections (0): | | Nothing selected | | | | | | | | |
| Capitation Structure: ALL | | | | | | | | | | |
| Population: ALL | | | | | | | | | | |
| Rate Cell: ALL | | | | | | | | | | |
| Region: ALL | | | | | | | | | | |
| | | | | Health Plan: ALL | | Health Plan: ALL | | | | |
| | | | | Data Source: Cost Report | | Data Source: Encounter | | | | |
| | | | | Incurred Month: ALL | | Incurred Month: ALL | | | | |
| | | | | Member Months: 73,280,864 | | Member Months: 72,685,518 | | | | |
| Service Category | Service Category Detail | Unit Type | Utilization per 1,000 | Cost per Unit | PMPM Cost | Utilization per 1,000 | Cost per Unit | PMPM Cost | | |
| Inpatient | Medical/Surgical | Days | 392.3 | \$1,990.52 | \$65.07 | 305.9 | \$2,465.73 | \$62.85 | | |
| | Delivery | Days | 68.6 | \$1,503.74 | \$8.60 | 65.3 | \$1,568.02 | \$8.53 | | |
| | Mental Health/Substance Abuse | Days | 82.9 | \$979.06 | \$6.77 | 72.9 | \$1,009.82 | \$6.13 | | |
| | Well Newborn | Days | 42.5 | \$803.62 | \$2.85 | 37.7 | \$726.57 | \$2.28 | | |
| | Nursing Facility | Days | 171.7 | \$290.42 | \$4.15 | 127.1 | \$241.89 | \$2.56 | | |
| | Other Inpatient | Days | 32.0 | \$1,082.11 | \$2.89 | 4.5 | \$284.92 | \$0.11 | | |
| | Total/Composite | | 790.1 | \$1,371.95 | \$90.33 | 613.3 | \$1,613.53 | \$82.47 | | |
| Outpatient | Emergency Room | Claims | 1,110.8 | \$112.26 | \$10.39 | 996.9 | \$121.01 | \$10.05 | | |
| | Surgery | Services | 157.4 | \$794.40 | \$10.42 | 179.3 | \$687.01 | \$10.27 | | |
| | Ambulatory Surgery Center | Services | 12.0 | \$312.23 | \$0.31 | 0.5 | \$125.44 | \$0.00 | | |
| | PT/OT/ST | Services | 732.4 | \$34.70 | \$2.12 | 857.9 | \$27.44 | \$1.96 | | |
| | Clinic | Services | 953.4 | \$64.28 | \$5.11 | 942.4 | \$62.34 | \$4.90 | | |
| | Other | Services | 7,087.8 | \$28.34 | \$16.74 | 9,171.0 | \$20.08 | \$15.35 | | |
| | Radiology | Services | 1,805.1 | \$76.10 | \$11.45 | 1,111.2 | \$125.24 | \$11.60 | | |
| | Pathology/Lab | Services | 5,288.8 | \$17.08 | \$7.53 | 5,574.3 | \$15.77 | \$7.32 | | |
| | | Total/Composite | | 17,147.6 | \$44.83 | \$64.06 | 18,833.3 | \$39.15 | \$61.45 | |
| | | Emergency Room | Services | 1,041.3 | \$56.85 | \$4.93 | 982.5 | \$58.10 | \$4.76 | |
| | Surgery | Services | 639.7 | \$115.41 | \$6.15 | 634.4 | \$110.43 | \$5.84 | | |
| | Other | Services | 1,923.3 | \$40.37 | \$6.47 | 1,880.2 | \$36.60 | \$5.73 | | |
| | Radiology | Services | 1,954.5 | \$25.94 | \$4.23 | 1,508.6 | \$29.10 | \$3.66 | | |
| | Pathology/Lab | Services | 2,697.0 | \$19.73 | \$4.44 | 3,226.3 | \$15.79 | \$4.25 | | |

FIGURE 2: PROVIDE A DYNAMIC COMPARISON OF MULTIPLE DATA SOURCES

| Dynamic View | | Service Detail | | Charts | |
|--|--|----------------|--|--------------------------|--|
| Current Selections (0): Nothing selected | | | | | |
| Capitation Structure: ALL | | | | Health Plan: ALL | |
| Population: ALL | | | | Data Source: Cost Report | |
| Rate Cell: ALL | | | | Incurred Month: ALL | |
| | | | | Health Plan: ALL | |
| | | | | Data Source: Encounter | |
| | | | | Incurred Month: ALL | |

| Population | Rate Cell | Member Months | Utilization per 1,000 | Cost per Unit | PMPM Cost | Member Months | Utilization per 1,000 | Cost per Unit | PMPM Cost |
|-------------------------|------------------------|-------------------|-----------------------|-----------------|-------------------|-------------------|-----------------------|-----------------|-----------------|
| Blind, Aged, & Disabled | Adults | 3,973,425 | 233,019.7 | \$59.87 | \$1,162.62 | 3,911,457 | 223,457.0 | \$59.16 | \$1,101.56 |
| | Children | 1,068,532 | 122,455.3 | \$55.81 | \$569.49 | 1,044,426 | 70,604.9 | \$82.49 | \$485.35 |
| | Total/Composite | 5,041,957 | 209,588.0 | \$59.37 | \$1,036.92 | 4,955,883 | 191,244.2 | \$60.97 | \$971.70 |
| Expansion | 19-34 F | 2,692,523 | 82,470.8 | \$42.29 | \$290.65 | 2,661,145 | 77,503.7 | \$42.92 | \$277.19 |
| | 19-34 M | 3,028,380 | 58,878.4 | \$51.13 | \$250.86 | 2,983,780 | 46,554.7 | \$61.36 | \$238.05 |
| | 35-44 F | 1,221,125 | 151,634.2 | \$37.97 | \$479.80 | 1,214,435 | 111,191.5 | \$49.19 | \$455.84 |
| | 35-44 M | 1,465,180 | 80,366.5 | \$61.23 | \$410.05 | 1,455,753 | 78,454.7 | \$59.69 | \$390.27 |
| | 45-54 F | 1,676,233 | 138,002.5 | \$55.40 | \$637.10 | 1,672,882 | 140,336.4 | \$52.13 | \$609.64 |
| | 45-54 M | 1,557,078 | 112,323.3 | \$66.39 | \$621.45 | 1,552,901 | 112,106.9 | \$63.13 | \$589.82 |
| | 55-64 F | 1,431,615 | 137,816.5 | \$58.45 | \$671.27 | 1,424,545 | 138,777.4 | \$55.27 | \$639.13 |
| | 55-64 M | 1,195,572 | 124,816.0 | \$69.27 | \$720.52 | 1,189,114 | 125,570.5 | \$65.48 | \$685.19 |
| | Total/Composite | 14,267,706 | 102,050.3 | \$54.29 | \$461.67 | 14,154,555 | 95,394.9 | \$55.37 | \$440.19 |
| | Maternity | Maternity | 0 | | \$730.14 | | 0 | | \$1,280.24 |
| Total/Composite | 0 | 0 | \$730.14 | \$653.70 | 2,450,217 | 42,231.3 | \$161.91 | \$569.82 | |
| TANF | <1 | 2,478,917 | 55,943.6 | \$140.22 | \$653.70 | 2,450,217 | 42,231.3 | \$161.91 | \$569.82 |
| | 1-13 | 26,467,656 | 32,350.3 | \$42.29 | \$113.99 | 26,291,043 | 23,072.5 | \$54.64 | \$105.05 |
| | 14-18 | 7,803,582 | 46,221.1 | \$40.62 | \$156.46 | 7,757,661 | 39,189.2 | \$45.04 | \$147.09 |
| | 19-64 | 17,221,046 | 82,418.8 | \$43.10 | \$296.04 | 17,076,159 | 77,293.7 | \$44.40 | \$285.99 |
| Total/Composite | 53,971,201 | 51,415.3 | \$47.38 | \$203.01 | 53,575,080 | 43,564.5 | \$52.35 | \$190.06 | |
| Total/Composite | 73,280,864 | 72,311.5 | \$53.13 | \$320.17 | 72,685,518 | 63,806.8 | \$56.53 | \$300.57 | |

FIGURE 3: LINE CHART FUNCTIONALITY OVER TIME IN VARIOUS DIMENSIONS

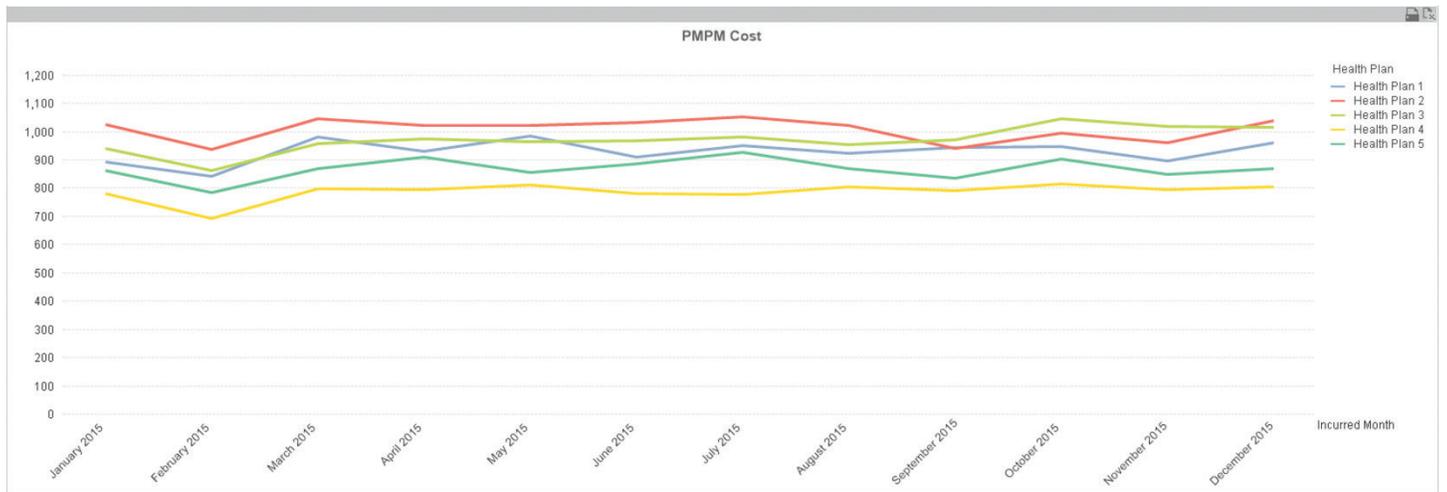


FIGURE 4: BAR CHART FUNCTIONALITY ACROSS MULTIPLE DATA DIMENSIONS

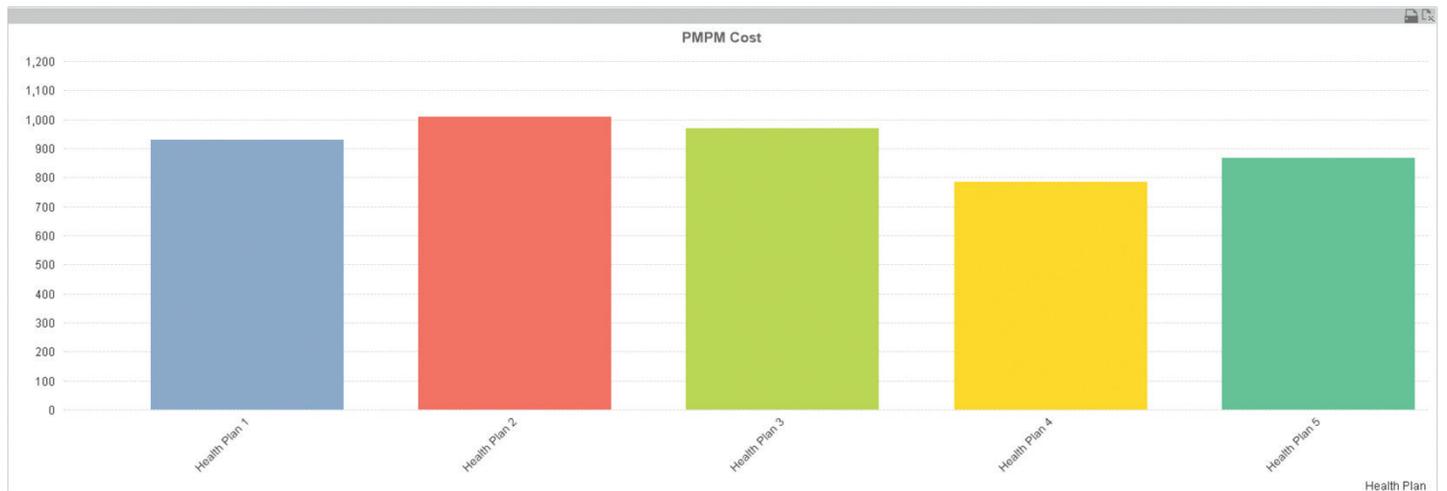


FIGURE 5: COMPARE ACROSS HEALTH PLANS AND REPORTING PERIODS

| Incurring Month | Health Plan | Member Months | Utilization per 1,000 | Cost per Unit | PMPM Cost |
|------------------------|------------------------|------------------|-----------------------|-------------------|-------------------|
| January 2014 | Health Plan 1 | 23,366 | 156,895.7 | \$70.05 | \$915.94 |
| | Health Plan 2 | 90,650 | 208,531.9 | \$65.18 | \$1,132.70 |
| | Health Plan 3 | 32,134 | 412,611.9 | \$28.44 | \$977.88 |
| | Health Plan 4 | 7,766 | 288,003.1 | \$30.40 | \$729.65 |
| | Health Plan 5 | 20,205 | 122,959.5 | \$95.76 | \$981.22 |
| | Total/Composite | 174,121 | 232,880.3 | \$53.56 | \$1,039.49 |
| February 2014 | Health Plan 1 | 23,453 | 150,839.4 | \$68.51 | \$861.16 |
| | Health Plan 2 | 90,818 | 189,217.0 | \$65.03 | \$1,025.44 |
| | Health Plan 3 | 32,186 | 370,326.0 | \$29.04 | \$896.23 |
| | Health Plan 4 | 7,920 | 285,636.4 | \$35.56 | \$846.40 |
| | Health Plan 5 | 20,267 | 115,220.6 | \$89.26 | \$857.03 |
| | Total/Composite | 174,644 | 213,226.2 | \$53.57 | \$951.90 |
| March 2014 | Health Plan 1 | 23,466 | 157,555.1 | \$68.37 | \$897.64 |
| | Health Plan 2 | 90,794 | 211,054.2 | \$64.14 | \$1,128.17 |
| | Health Plan 3 | 32,167 | 399,682.4 | \$28.41 | \$946.16 |
| | Health Plan 4 | 8,056 | 265,404.7 | \$36.75 | \$812.82 |
| | Health Plan 5 | 20,264 | 123,766.9 | \$91.43 | \$942.98 |
| | Total/Composite | 174,747 | 230,975.8 | \$53.39 | \$1,027.70 |
| April 2014 | Health Plan 1 | 23,580 | 158,267.7 | \$71.73 | \$945.99 |
| | Health Plan 2 | 90,811 | 213,643.8 | \$64.24 | \$1,143.74 |
| | Health Plan 3 | 32,293 | 376,199.4 | \$30.40 | \$953.03 |
| | Health Plan 4 | 8,371 | 261,290.6 | \$40.14 | \$874.08 |
| | Health Plan 5 | 20,345 | 123,086.6 | \$89.99 | \$923.07 |
| | Total/Composite | 175,400 | 227,897.5 | \$54.95 | \$1,043.58 |
| May 2014 | Health Plan 1 | 23,604 | 158,276.1 | \$71.44 | \$942.30 |
| | Health Plan 2 | 90,560 | 199,521.5 | \$66.71 | \$1,109.09 |
| | Health Plan 3 | 32,345 | 394,184.0 | \$29.82 | \$979.65 |
| | Health Plan 4 | 8,556 | 334,238.4 | \$29.84 | \$831.07 |
| | Health Plan 5 | 20,350 | 121,606.9 | \$89.53 | \$907.29 |
| | Total/Composite | 175,415 | 227,397.5 | \$54.13 | \$1,025.81 |
| Total/Composite | 874,327 | 226,474.2 | \$53.92 | \$1,017.71 | |

To accompany the DRIVE tool, we have created a process that helps states and health plans identify and correct encounter data quality issues. This process produces streamlined health plan reporting, additional insight into areas of encounter data quality concern, and quick feedback on whether state and health plan efforts are improving encounter data quality.

Dashboard capabilities

With DRIVE, clients are not just getting a tool that will improve encounter data quality. Because of the dynamic capabilities and intuitive nature of the tool, DRIVE also provides significant

value to the user, gaining valuable insight into the underlying cause for emerging trends and providing efficient comparisons across data elements or data sources. Additionally, DRIVE enables users to quickly answer and provide documentation to key questions from stakeholders with its export functionalities and data visualization. As a result, DRIVE can provide policymakers with the information to make informed decisions in a timely fashion.



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For a demonstration of the DRIVE tool, please contact:

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