IX. Emergency Medical Transportation

Service Description

Emergency medical transportation (EMT) services include emergency transportation to and from a hospital. EMT services are a mandatory State Plan benefit offered to all Colorado Medicaid clients. Providers that render EMT services must be enrolled with Medicaid, be licensed ambulance or air ambulance providers and employ Emergency Medical Service (EMS) staff certified by CDPHE.[83]

Utilizer Characteristics

In FY 2014-15, 59,081 Medicaid clients used EMT services at a total expenditure of $15,306,850.[84] The average annual paid amount per client utilizing EMT services was $259. EMT services accounted for 0.26% of total Medical Services Premiums expenditures in FY 2014-15. In order to better gain insight into utilization and access trends, analyses detailed in the Utilizer Characteristics, Provider Characteristics and Utilization and Access subsections of this report contain data for FY 2013-14 through FY 2014-15. All figures depict data across two fiscal years, unless otherwise noted.

Characteristics of the clients who utilized EMT services are notable in the following ways:

- the largest share of clients who utilized EMT services was the expansion adult category (Figure 45);
- the largest acuity segments of the EMT population were the dominant chronic and moderate chronic CRGs (Figure 46);
- a larger proportion of clients who utilized EMT services were adults (Figure 47); and
- the largest age and gender grouping was women between 20-29 years old (Figure 47).

[83] For more information about EMS certification, see: https://www.colorado.gov/pacific/cdphe/categories/services-and-information/health/emergency-care/ems.

[84] This number may differ from officially reported expenditures because the budget source of expenditure is the Colorado Operations Resource Engine (CORE). Any discrepancy between CORE data and MMIS data results from accounting adjustments and other financial transactions not captured in the MMIS.

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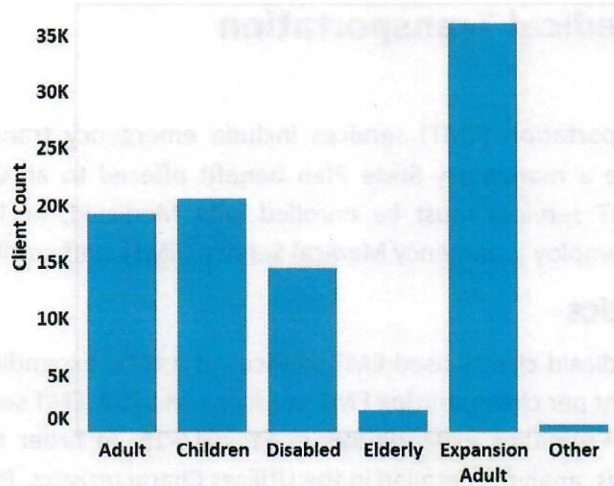

Figure 45 - Clients who utilized EMT services by population type.

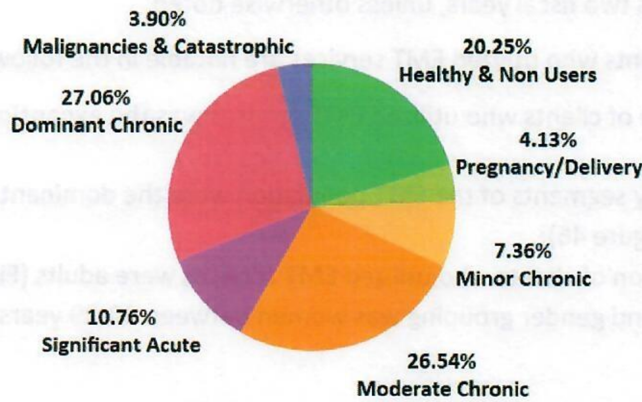

Figure 46 - Clients who utilized EMT services by CRG.

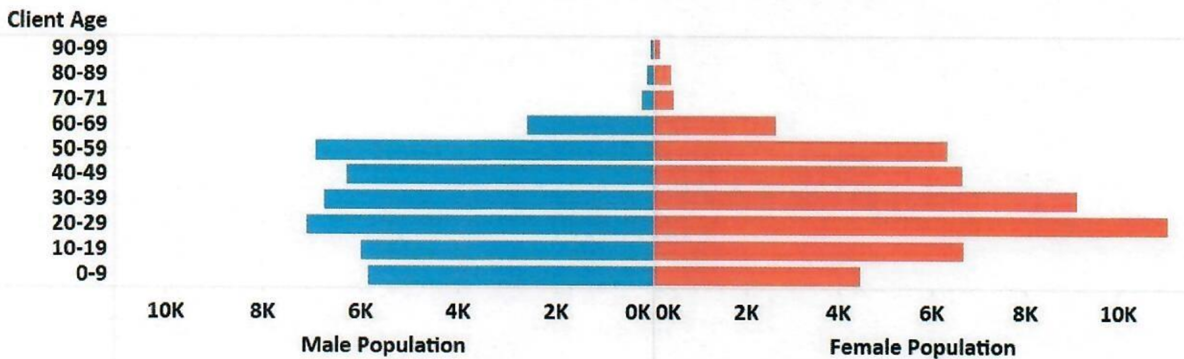

Figure 47 - Clients who utilized EMT services age-gender population pyramid.

Provider Characteristics

From FY 2013-14 through FY 2014-15, the number of EMT providers reimbursed by Colorado Medicaid increased by 19.71%, from 137 to 164 (Figure 48).[85]

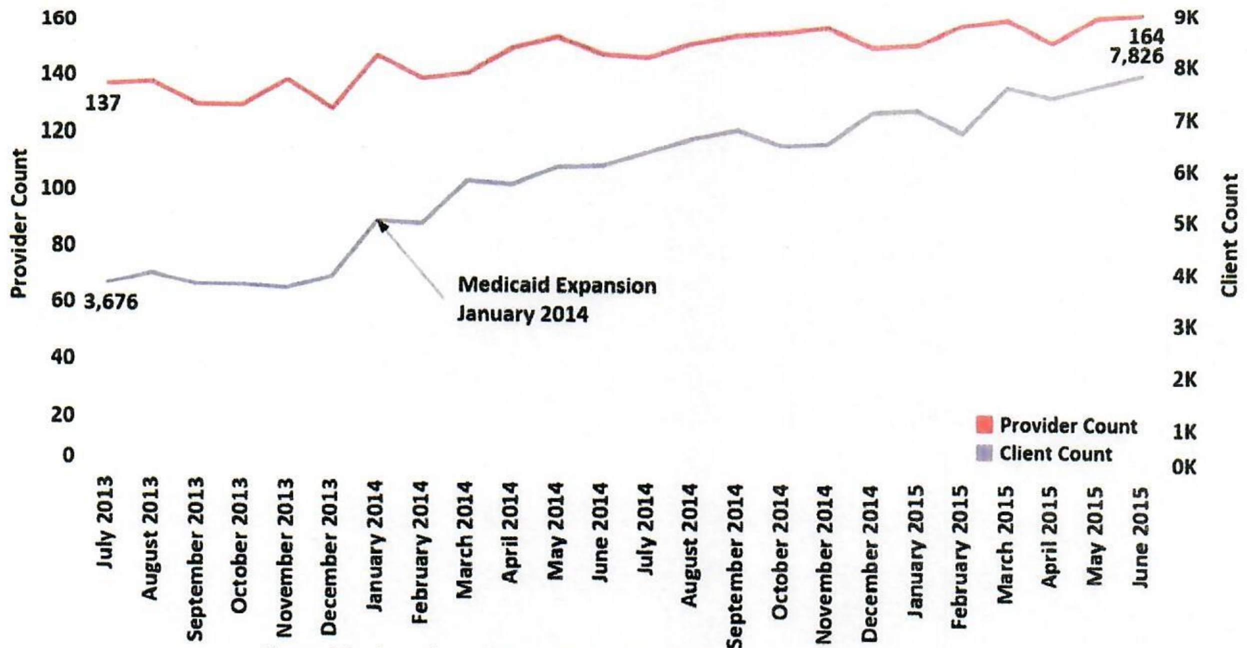

Figure 48 - Growth in clients who utilized EMT services and provider count.

The triangles on the following map of Colorado illustrate the billing zip code of each EMT provider and the number of Medicaid clients that utilized EMT services by county of residence is shown in shades of blue (Figure 49).[86] Counties with fewer than 30 clients residing in them are depicted as having 30 clients to limit protected health information (PHI).

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[85] Numbers are aggregated at the month of service level and do not represent the total number of providers during the time period: 165.

[86] Some Medicaid clients received EMT services from out-of-state providers, represented by a triangle in the right margin of Figure 49.

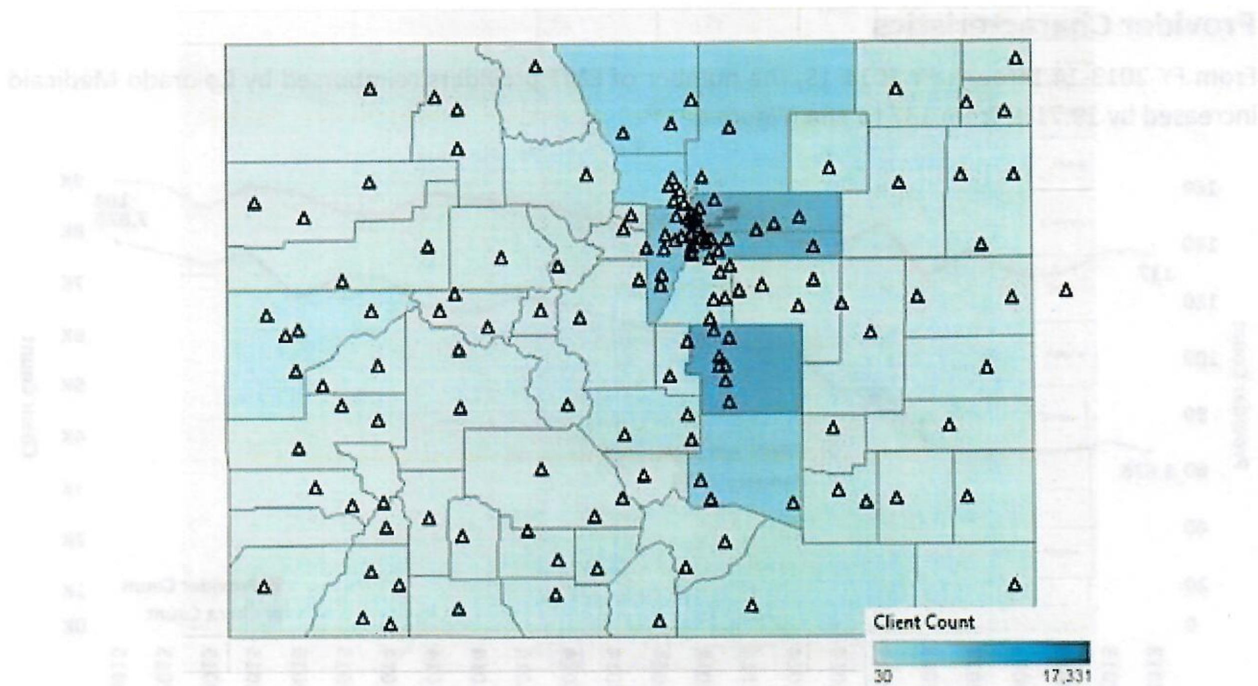

Figure 49 - EMT service utilizer density map and provider billing location.

When examining utilization and access data, there are unique considerations specific to EMT service providers, particularly that they cannot refuse to provide services when requested. Characteristics of EMT service providers differ from other providers, though are similar to NEMT providers, in the following ways:

- in claims data, EMT providers are assigned an identification code based on their billing location, which does not necessarily reflect the location of their providers; and
- providers are not required to report the number of employees or vehicles, nor are they required to report details about their capacity. Claims data does not support the determination of a provider's capacity, or whether an individual EMT service provider performed at, over, or under capacity.

Utilization and Access

In January 2014 there was a large increase in EMT utilization statewide (Figure 48). This increase is attributable, in part, to the expansion population utilization, which accounted for 40.75% of total utilization of EMT services. Utilization of EMT services for non-expansion clients also grew, to a lesser degree, throughout the observation period (Figure 50).

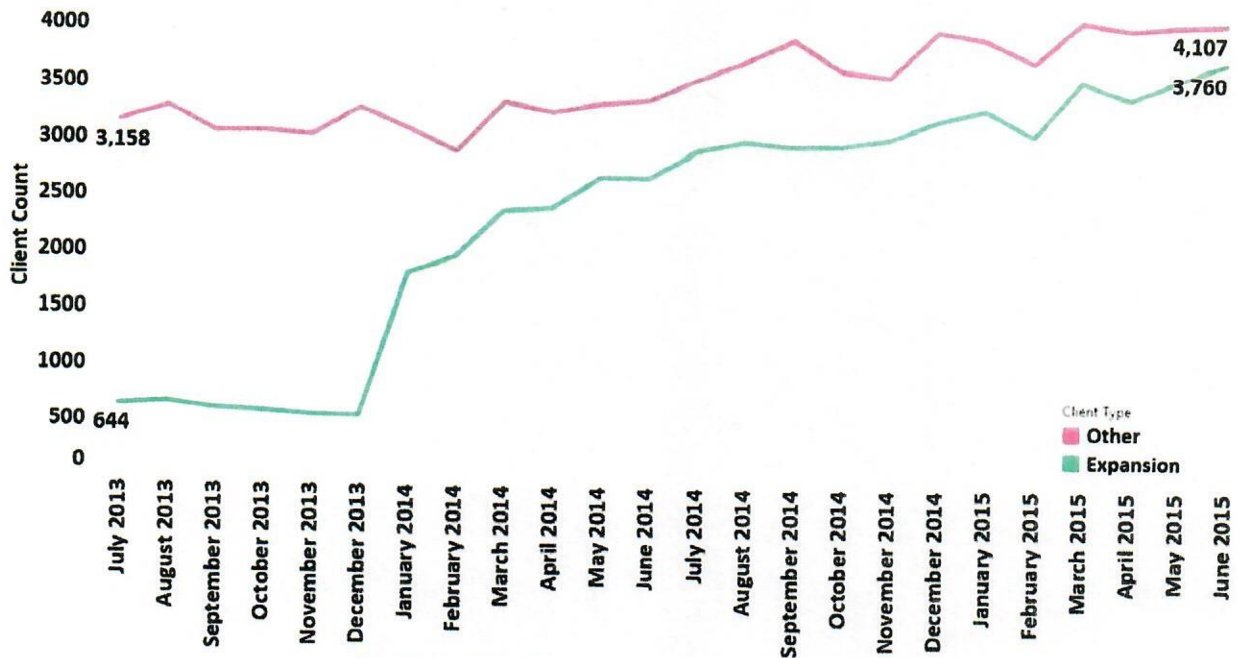

Figure 50 - EMT service utilization by expansion status.

Other than the member to provider ratio, the Department is unaware of nationally accepted utilization and access standards for EMT services. Therefore, in addition to the member to provider ratio, the Department examined statewide, average (mean) utilization as the standard for comparison. The Department examined the following indicators for potential access concerns:

- the member to provider ratio (Figure 52); and
- the penetration rate (mean), or the percentage of the population that utilized EMT services (Figure 53).

The Department chose to examine EMT service utilization by region (Figure 8).[87] The metrics examined by the Department are not commentary on optimal utilization levels; they were used to determine if variations around the state could be attributable to access to care concerns in particular regions. If utilization in a given region was determined to be more than one standard deviation below the statewide average, the Department identified this as an area in need of further research.

[87] See Appendix 1 for a Health Statistics Region map key.

The member to provider ratio is a nationally recognized (MACPAC) measure of provider supply for access to care analyses.[88] For FY 2014-15, the statewide member to provider ratio for EMT services was 428.4, meaning that for every EMT service provider there were 428 Medicaid FTEs (Figure 52).[89]

Figure 52 depicts the statewide average member to provider ratio (dark line; 428.4), a one standard deviation threshold (gray shaded area) and the member to provider ratio in each region (blue columns). For this metric, a higher ratio may indicate a potential access concern; any region above the standard deviation threshold warranted further research. Regions 4, 14, 15 and 20 (El Paso, Adams, Arapahoe and Denver Counties) met this criteria with ratios of 990.4, 928.0, 862.6 and 888.1, respectively.

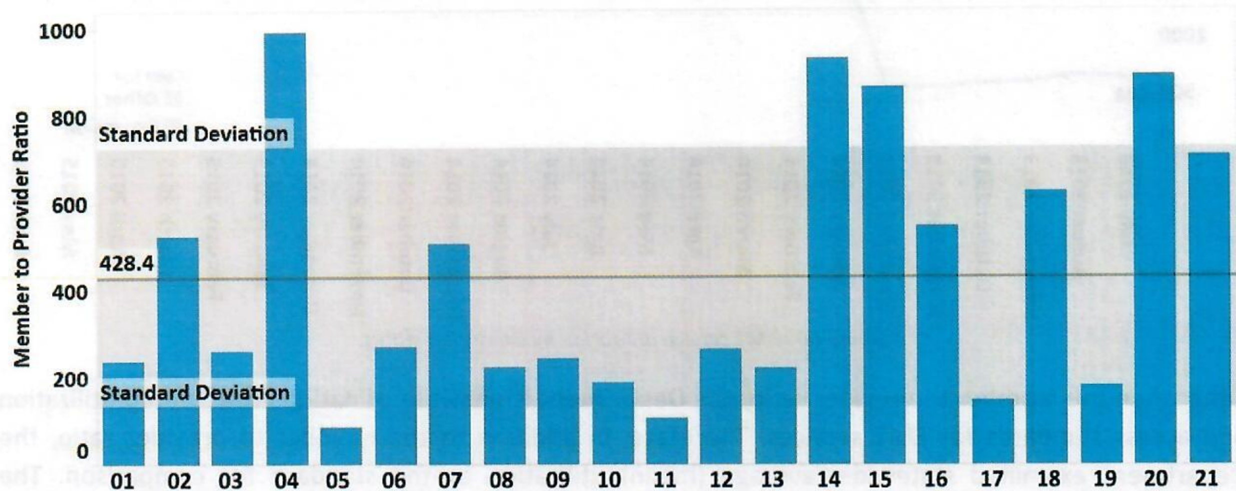

Figure 51 - EMT service member to provider ratio by region.

Figure 53 depicts the statewide average penetration rate, or the percent of the Medicaid population that utilized EMT services (dark line; 5.20%), a one standard deviation threshold (gray shaded area) and the average penetration rate by region (blue columns). For this metric, lower utilization may indicate a potential access concern; any region below the standard deviation threshold warranted further research. Penetration rates for regions 3, 10, 12 and 19, with utilization percentages ranging from 3.16% to 3.89%, met this criteria.

[88] The MACPAC is a non-partisan legislative branch agency that provides policy and data analysis and makes recommendations to Congress, the Secretary of the U.S. Department of Health and Human Services and the states. See: MACPAC, Examining Access to Care in Medicaid and CHIP (March 2011). https://www.macpac.gov/subtopic/access-to-care/.

[89] For context, the Health Resources and Services Administration (HRSA) defines a primary care Health Professional Shortage Area (HPSA) as having a member to provider ratio of at least 3,500:1. See: http://bhpr.hrsa.gov/shortage/hpsas/designationcriteria/primarycarehpsacriteria.html.

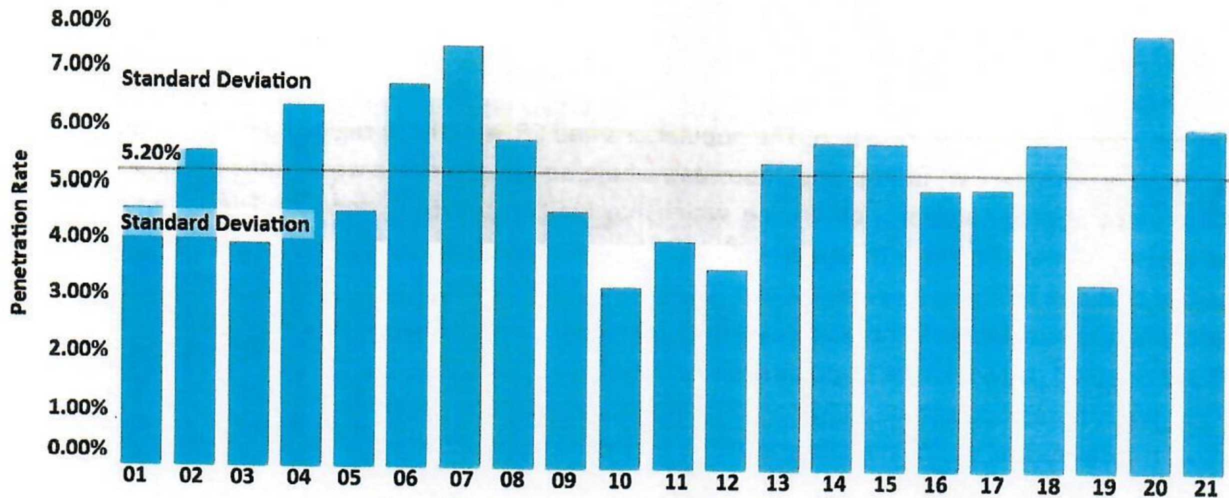

Figure 52 - EMT service penetration rate by region.

During the Rate Review Information Sharing Session held on April 1, 2016, stakeholders suggested that the relationship between EMT and NEMT services should be considered together when assessing utilization. Figure 54 illustrates the penetration rate for both EMT and NEMT services by region during the eight months for which complete NEMT claims data was available. While it is difficult to draw broad conclusions from the graphic because the regional variation appears substantial, there is a pattern that illustrates a dip in EMT utilization corresponding to an increase in NEMT utilization, and vice versa. While this may support the idea that higher NEMT utilization reduces - or reduced - the use of EMT services (resulting in lower transportation costs), this data does not provide enough information to highlight potential access concerns.

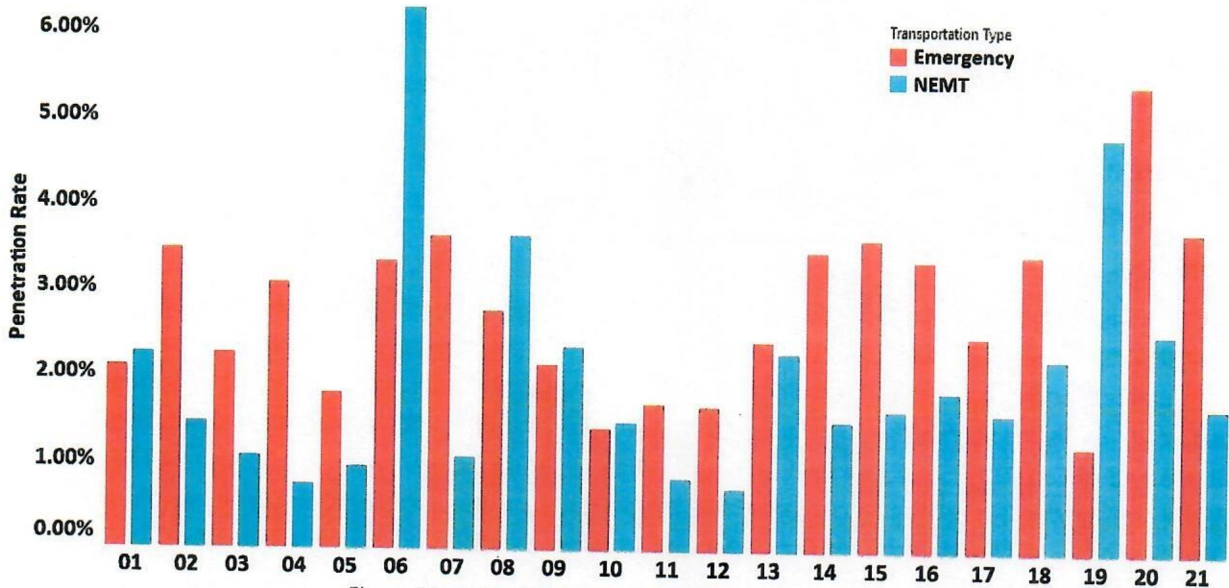

Figure 53 - EMT and NEMT penetration rate by region.

Access Research

The member to provider ratio in regions 4, 14, 15 and 20 (El Paso, Adams, Arapahoe and Denver counties) met the criteria for further research. The populations and CRGs in these regions did not appear to differ significantly from the EMT utilizer population as a whole, so the difference was not the result of a different utilizer population, or an acuity difference, which may indicate an access concern. These four regions are the most populous regions in the state, with high proportions of Medicaid enrolled clients. Coupled with the fact that one billing ID may represent multiple ambulance units, these outliers likely do not represent a provider capacity issue. El Paso County had the highest member to provider ratio, with 990.4 Medicaid FTEs to one EMT provider, which appears to have been adequate because of the relatively high percentage of FTE that utilized this service (6.32%). Furthermore, penetration rates in all four of these regions were above the statewide mean, indicating that the higher member to provider ratios were not a barrier to access.

The penetration rate, or the percent of the population that utilized EMT services, metric shows that regions 3, 10, 12 and 19 met the criteria for further research. Region 3 is the Denver metro area, region 19 is Mesa County and regions 10 and 12 are rural regions on the Western Slope.

Data for region 3 (Douglas County) shows a steadily increasing penetration rate, doubling over the observation period, which indicates that access increased in this region over time.

In region 19 (Mesa County), the expansion population comprised 47.22% of the total clients who utilized EMT services, which was higher than the general Medicaid population. The penetration rate began to decrease in this region at the same time that adults were enrolled into a managed care program (MCO) as part of the Accountable Care Collaborative (ACC) payment reform project Rocky Mountain Prime (ACC RMHP). Once enrolled, these clients were no longer under the scope of this review; this change in enrollment most likely contributed to the lower penetration rate in this county.

HSRs 10 and 12 are both on the Western Slope and include counties that participate in the ACC RMHP MCO, however, there was no significant downward shift in the trend penetration rate at the time the program started. Because the populations and CRGs in these regions did not differ significantly from the average service utilizer population, data in these regions may point to an access to care concern.

Quality

EMT service providers are alternatively referred to as emergency medical service (EMS) providers by CDPHE. CDPHE certifies EMS staff (the individual personnel performing medical acts in ground and air ambulances) and it licenses air ambulance providers (the legal entity operating an air ambulance business). Counties license the EMT provider (the legal entity operating a ground ambulance business). At the end of FY 2014-15, 17,134 EMS staff and 22 air ambulance agencies were licensed by CDPHE. While neither the Department nor CDPHE has precise data on the number of licensed ground ambulance agencies, other data suggests that there were approximately 200 such licensed agencies.

A comprehensive report that addresses quality of overall EMS services is submitted by CDPHE to the Joint Budget Committee annually.[90] Refer to that report for an overview of the emergency and trauma system in Colorado, including the data on certified EMS personnel, grant funding reports and data on designated trauma centers.

Rate Comparison

This section comprises the rate comparison analyses for both EMT and NEMT services, due to certain data limitations.

The Department contracted with Optumas, an actuarial consulting firm, to provide analytic support in comparing Medicaid provider rates to those established by Medicare, other states' Medicaid programs and additional sources, where applicable.

Claims Data

The raw claims data for FY 2014-15 was subject to a validation process to ensure correctness. To do so, total payments were compared with budget numbers, payments over time were compared and a frequency analysis was completed. The result of this process indicated that the relevant EMT and NEMT services data was both complete and reliable.

The Department informed Optumas of the partial data set available for NEMT services coordinated within the Denver metro area.[91] Because the new broker began operations in November 2014, a significant portion of brokered NEMT claims were unavailable through the MMIS before that time and therefore did not appear in the data. Optumas' examination of the NEMT data provided confirmed the Department's assessment regarding incomplete claims brokered data, and details of how this issue was addressed are provided later in this report. Results of the validation process suggested that the relevant transportation data was both complete and reliable.

During the analysis, it was also necessary to delimit the fee-for-service data to relevant utilization. Claims with denied status or that were otherwise zero paid were excluded because they do not factor into Colorado's total transportation expenditures. Any claims associated with members enrolled in the CHP+ program were likewise excluded because these costs are incorporated into per-member-per-month capitation rates and thus are outside the scope of the rate review process. Additionally, claims for which procedure codes are manually priced were excluded since a set fee is not available for comparison. Finally, claims attributed to members without Medicaid eligibility for the month during which the service occurred were excluded as well.[92] Once this process was completed, the total number of records equaled 1,006,428 which amounted to $29,792,216 in paid dollars. A summary of these exclusions and their respective impacts on the base data is available in Appendix 8.

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[90] To view the most recent report, see: https://www.colorado.gov/pacific/sites/default/files/EMTS_Legislative-Report-2015.pdf.

[91] The broker, Total Transit, manages 9 counties: Larimer, Weld, Boulder, Broomfield, Denver, Jefferson, Adams, Arapahoe and, Douglas. For more information, see: https://medicaidco.com/

[92] Claims were matched to Medicaid enrollment files provided by the Department to determine eligibility.

Following the removal of extraneous utilization, a modification to the base data was required to adjust for the missing brokerage data discussed previously. Since the goal was to extrapolate from the existing data to that of a full year, the broker's average monthly cost over the final four months of FY 2014-15 was used to populate the first eight months. This methodology used to fill-in missing months, and adjusting the first months by the calculated average, reduced any understatement from the broker's start-up period and served as the best approximation of prospective monthly costs. The adjustment assumed a rate of spend over the course of an entire year and the results generated an increase of 61.7%. To illustrate its impact, the outcomes of the Transportation comparison are shown with and without this adjustment in Table 11.

Comparable Rates

The Colorado Medicaid transportation fee schedule includes rates for EMT and NEMT services using Healthcare Common Procedure Coding System (HCPCS) codes. The July 1, 2015 effective rates include an average targeted rate increase to these codes of approximately 9.93%, estimated at the time to be an increase of $1,109,263 total fund expenditures.[93] Total Transit reimburses its network of providers using the fee schedule rates that are in effect for the remainder of the state. Thus, all utilization was priced according to one statewide fee schedule.

Because Colorado Medicaid transportation services include some services that are covered by Medicare, particularly ambulance services, it was necessary to reference program information and fee schedules from Medicare to make valid comparisons. Publicly available files and manuals relating to the Medicare Ambulance Fee Schedule (AFS) were collected for use in identifying the appropriate Medicare rates for services provided in Colorado.[94] Medicare fees included in this analysis are equal to the simple average of the urban and rural Medicare rate.[95] The simple average between the urban and rural AFS rates was matched with claims on a procedure code basis. Overall, this process was successfully applied to 59.1% of the data.[96]

Additional payment reductions and increases currently in use by Medicare were not factored into the analysis, including:[97]

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[93] An across the board rate increase of 0.5% was applied to all transportation services prior to the 9.93% increase. The 0.5% targeted rate increase was specifically applied to the following EMT codes: A0433, A0434, A0425, A0021, A0422, A0430, A0431, A0429 and A0427, and to the following NEMT codes: A0428, A0426, A0190, A0210, A0999, A0180 and T2003.

[94] The Medicare AFS was developed prior to 2000 with a phased-in implementation period from 2002 through 2005.

[95] For more information regarding Medicare's AFS for CY2015 and the Medicare Access and CHIP Reauthorization Act of 2015 see: https://www.congress.gov/bill/114th-congress/house-bill/2.

[96] This percentage is based on the Colorado Medicaid re-priced dollars following the brokerage adjustment.

[97] For more information on the CMS Ambulance Fee Schedule and applicable add-ons, see: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AmbulanceFeeSchedule/afspuf.html and for more detail on how the ambulance payment is calculated by Medicare, see: http://medpac.gov/documents/payment-basics/ambulance-services-payment-system-15.pdf?sfvrsn=0.

VII. Emergency Medical Transportation Services

EMT services include emergency ground and air transportation to and from a hospital. EMT services are a mandatory State Plan benefit offered to all Health First Colorado (Colorado's Medicaid Program) clients. The 2016 Analysis Report contains a detailed service description (p. 67). EMT services are separate and distinct from NEMT services, however, it is important to review the recommendations for both services in tandem, as changes to one aspect of transportation services has the potential to impact the other.

In the 2016 Analysis Report, the Department concluded that EMT service payments were sufficient to allow for client access and provider retention because EMT service providers cannot refuse services to clients. Despite access sufficiency, rates may not reflect appropriate reimbursement of high-value services. Analysis results indicated that EMT service payments are significantly below Medicare and other states at 30.74% of the benchmark. This conclusion was informed by both analysis of claims-based utilization data and rate benchmark comparison.[25]

The Department's access and analysis identified areas of the state that require further research over time to understand atypical utilization trends. The Department will continue to monitor utilization and access patterns in these regions.[26]

Discussion of Service and Analysis

During Rate Review Information Sharing Sessions and MPRRAC meetings, committee members and stakeholders highlighted two broad concerns:

- EMT services must always be available, which means ambulances must be fully staffed and stocked at all times. Meeting participants said increased rates are justifiable given the costs associated with around-the-clock preparedness.
- EMT services are only reimbursed if a patient is taken to a hospital. Some committee members and stakeholders believed this incentivizes EMT providers to transport clients to the hospital, when appropriate care could be given onsite at less cost to the state. The Department does not currently reimburse for care

[25] The EMT services benchmark was established using Medicare's Ambulance Fee Schedule and Medicaid fee schedules from Alabama, Alaska, Arkansas, California, Connecticut, Montana, Nebraska, New Mexico, North Dakota, and Wisconsin.

[26] Health Statistics Regions 10 (Delta, Gunnison, Hinsdale, Montrose, Ouray, and San Miguel Counties) and 12 (Eagle, Garfield, Grand, Pitkin, and Summit Counties) require further research (2016 Analysis Report, p. 74). More information on Health Statistics Regions can be found on CDPHE's website.

2016

provided onsite. Stakeholders suggested changing policy to reimburse for what is commonly referred to as "treat and release" care.

Meeting participants also discussed difficulties recruiting, training, and retaining staff and the need to analyze ground and air ambulance information separately in future analyses.[27]

MPRRAC Recommendations

The MPRRAC's general impression is that EMT rates are significantly below the rates of surrounding state Medicaid programs and Medicare.

The MPRRAC recommends:

1. The Department first survey surrounding states' EMT rates and bring Colorado Medicaid rates to parity with surrounding states;
2. Over time, the Department bring EMT rates to parity with Medicare and investigate supplemental funding sources;
3. The Department look at initiating reimbursement for "treat and release" and "supplies used" codes; and
4. The Department investigate reimbursing for alternative transportation vehicles (i.e., vehicles other than ambulances).

Department Considerations

Results of the 2016 Analysis Report indicated increases in EMT service providers and continued growth in utilization, but the nature of EMT service provision, coupled with service payments at 30.74% of the benchmark, indicate that EMT service payments may not support appropriate reimbursement for high-value services. Although this benchmark comparison did not include all surrounding states, the 2016 Analysis Report lends support for the MPRRAC's impression.

EMT providers must transport a client to the hospital to be reimbursed. If an EMT service provider arrives onsite and determines the client does not need to be transported to the hospital, they may: treat the client without reimbursement; or transport the client to a hospital to receive higher-cost care. Medicaid agencies have the ability to reimburse for both "treat and release" services, using existing paramedic intercept codes, and "supplies used" codes. Reimbursing EMT service providers for paramedic intercept codes could

[27] Summaries of MPRRAC discussions and stakeholder comments can be found in MPRRAC meeting minutes from April 29, 2016 and June 17, 2016.

potentially incent the delivery of needed onsite care and prevent higher-cost hospital care. The Department is open to further investigation of paramedic intercept codes. The Department currently reimburses for "supplies used" codes.

Outside of the rate review process, the Department is already working to improve EMT service delivery through efforts such as supporting the Colorado Department of Public Health and Environment (CDPHE) in the implementation of SB 16-069, a Community Paramedicine Regulation. The Department believes that this regulation, which instructs CDPHE to develop a new licensure type for community paramedicine services, may allow EMT service providers to treat a wider range of clients by providing services in the least restrictive and most cost effective environment.

Fiscal Analysis

EMT Recommendations 1-4

Based on the MPRRAC's recommendations, the Department does not need additional resources at this time to survey and investigate. Regarding the MPRRAC's EMT recommendations to bring rates to parity with other states and Medicare, the Department notes that any future increases to EMT service rates will require additional appropriations from the General Assembly. In the 2016 Analysis Report, the Department provided an estimate of the associated costs had it increased NEMT and EMT service rates to equal 100% of the combined NEMT and EMT benchmark. In FY 2014-15, this increase would have been approximately an additional $74.13 million total funds and $25.19 million General Fund (2016 Analysis Report, p. 79).

Department Recommendation

The Department does not currently propose changes to EMT service rates. After the Department engages in the investigation below, the Department may offer different recommendations in the future.

The Department plans to:

- consult with surrounding state Medicaid agencies to gather information on their EMT service rates and evaluate those rates for comparability;
- reach out to our federal and state partners to understand supplemental funding sources for EMT services;
- calculate the potential budget impact of opening, and reimbursing for, paramedic intercept codes;

COLORADO
Department of Health Care
Policy & Financing

- examine if changes to, and clarification of, NEMT service policies lessen potentially-avoidable utilization of EMT services;
- gather more information from EMT service providers on the rate components that they feel are inadequate; and
- forecast the complete budgetary impact of rate increases to existing EMT services, including researching the direct and indirect impacts a rate change may have on the utilization of other services.

Appendix 8 – FY 2014-15 Summary Data for Transportation

Transportation	Record Count	Paid	Percent of Paid
Base Data	1,026,997	$30,467,807	100.0%
Exclusions			
Denied	585	$ -	0.0%
CHP+	136	$6,259	0.0%
Paid After 9/30/2015	7,673	$197,246	0.6%
No Eligibility Span	6,449	$181,865	0.6%
Manually Priced	2,680	$290,221	1.0%
Zero Paid	3,046	$ -	0.0%
Zero Repriced	-	$ -	0.0%
Total Exclusions	20,569	$675,590	2.2%
Medicaid Repricing			
Total Base Medicaid Data to Reprice	1,006,428	$29,792,216	97.8%
Total Medicaid July 2015 Repriced Amount[1]	1,006,428	$36,698,202	
Total Medicaid Repriced with Brokerage Adjustment[2]	1,006,428	$43,067,619	

[1] The Medicaid July 2015 Repriced amount does not account for the "lower of billed" logic.

[2] This adjustment approximates the impact of the broker's operation for a full year.

2016

COLORADO
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Policy & Financing

	Medicare Repricing	Crosswalk Repricing
Non-Brokerage Claims		
Total Medicaid Repriced with Medicare Rate	$16,096,924	$5,818,241
Total Medicare July 2015 Repriced Amount	$47,933,479	$24,522,041
Brokerage Claims Adjusted		
Total Medicaid Repriced with Medicare Rate	$9,355,156	$1,624,799
Total Medicare July 2015 Repriced Amount	$32,684,123	$1,885,094

Total Medicare/Crosswalk Repricing with Brokerage Claims Adjusted	Repriced Dollars	Percent of Repriced
Total Medicaid Repriced with Matching Rate	$32,895,120	76.4%
Total July 2015 Repriced Amount (All Sources)	$107,024,738	