

Amber ground ambulance dataset reflects complexity and challenges of the industry, highlights the need to improve and continue cost data collection

April 2025



EXECUTIVE SUMMARY

The Centers for Medicare & Medicaid Services (CMS) is on the cusp of possessing the data needed to make long anticipated changes to the Medicare fee-for-service (FFS) ground ambulance payment system. It has been more than two decades since CMS revised these payment rates through a negotiated rulemaking process that was exclusive of actual cost data or inflationary considerations. Since then, the cost structure of ground ambulance entities has changed. CMS is now using the Ground Ambulance Data Collection System (GADCS) to gather ambulance cost data, as required by Congress, to offer an improved understanding of the costs of delivering ground ambulance services. Given the potential of GADCS data to improve the adequacy of Medicare FFS reimbursement rates, the American Ambulance Association developed a similar data collection device, referred to as Amber, to test these data with its membership of ground ambulance entities. Amber offers a glimpse into the current challenges of the ground ambulance industry.¹

Health Management Associates, Inc. (HMA) assessed the Amber dataset for response rates and data quality, along with responses containing calendar year 2022 financial data. Amber response rates were low, but sample volumes were on par with prior industry surveys conducted in the past by federal agencies. The Amber sample is representative of the industry's wide variation in entity size and geographic service area. Amber data are reliable for calculating margins, but some aspects of these data also signal that ground ambulance entities, particularly smaller entities, may have had difficulty with variable definitions or the submission process. We observe that Amber would be improved by including information on uncompensated care and more details on medication supply costs.

The 2022 financial data from Amber suggest that Medicare FFS margins, at -6 percent, had declined since GAO's 2010 assessment and that the share of costs associated with labor has increased. Amber data also suggest that the cost structure of smaller ground ambulance entities and rural and super-rural entities differs from that of larger and more urban entities. Margins for small and rural entities are lower.

Based on our assessment of the Amber dataset and its 2022 financial, we offer several recommendations to policymakers and stakeholders. These recommendations are intended to improve future cost collection efforts that may inform payment reforms to enhance the payment accuracy of the Medicare FFS payment system for ground ambulance services.

- Provide additional educational support to respondents to improve consistency of data reporting
- Streamline and modify data collection devices to adhere to industry trends and challenges
- Develop a standardized method for assigning ground ambulance entities to geographic service area for research purposes
- Collect data on ground ambulance uncompensated care and bad debt
- Collect payer level data for cases involving treatment without transport
- Collect targeted data on top 10 medications by cost to accurately reflect costs in payment rates
- CMS should consider collecting ground ambulance cost data on a semi-regular basis
- CMS should consider phasing in the use of GADCS data to ensure that the data reflect the diversity of ambulance entities and consistent reporting of key financial variables

INTRODUCTION

The Centers for Medicare & Medicaid Services (CMS) is on the cusp of possessing the data and analytical results needed to make long-anticipated changes to the Medicare reimbursement system of ground ambulance transports. The relative value units that serve as the foundation for Medicare FFS ground ambulance payment rates were developed by the Health Care Financing Administration (HCFA) through a negotiated rulemaking process with industry stakeholders which in part relied on 1998 cost data from a survey of 421 ground ambulance entities gathered.^{2,3} Significant changes have occurred within the ambulance industry and the healthcare environment during this two-decade gap, including modifications to clinical practices related to ambulance services, transportation and communication technologies, medical technologies, and Medicare and Medicaid enrollment.

Through the Bipartisan Budget Act of 2018 (BBA), the US Congress required the US Department of Health and Human Services (HHS) to collect cost, revenue, and utilization data from ground ambulance entities. These data have the potential to better align payments with the current costs of ambulance entities.

To comply with the statute, CMS developed the Ground Ambulance Data Collection System (GADCS) to incrementally collect data from ground ambulance entities between 2022 and 2024.⁴ The GADCS data collection tool includes questions for ambulance entities about their organizational characteristics, service area, emergency response time, mix of ground ambulance services, cost structure, and revenues (e.g., payments from payers).⁵ Rand Health Care, a CMS contractor, completed its first report analyzing the first two years of GADCS data in December 2024.⁶ The Medicare Payment Advisory Commission (MedPAC) is also statutorily required to analyze these data and report to Congress on the adequacy of Medicare ground ambulance payments, the administrative burden data reporting requirements place on ambulance entities, and recommendations that the Commission may have on these topics.

Given the potential of GADCS data to improve the accuracy of Medicare FFS reimbursement rates, the AAA developed a data collection device, referred to as Amber, to collect a mirrored but streamlined version of the GADCS data from its membership of ground ambulance entities.⁷ The aim of Amber is to test cost collection within the ground ambulance industry, identify challenges that ambulance entities may have with data reporting, and highlight potential improvements for future reporting. In addition, Amber is intended to enhance the AAA's capacity to engage policymakers in developing recommendations that will ensure the sustainability of the Medicare ground ambulance benefit and protect beneficiary access to these services.

The AAA commissioned HMA to provide an independent analysis of Amber’s current data and assess the strengths and weakness of this dataset for potential use in setting Medicare reimbursement rates. These data were reported by ambulance entities electronically to an independent third-party data collection firm, and then provided to HMA for analysis. Amber data reflect information gathered from individual ground ambulance entities on the individual National Provider Identification (NPI) number level. Throughout 2024, HMA assessed the financial data and descriptive data contained in Amber and calculated three types of ground ambulance margins: Medicare, Medicaid, and payer-only. HMA stratified these results by entity size, geographic service area, and other descriptive characteristics. In this report, we offer preliminary findings of the survey results, outline the potential flaws and limitations of the data, and provide recommendations for ongoing efforts to collect data from ambulance entities.

BACKGROUND

Historically, data reflecting the costs and revenues of ground ambulance entities have been limited. The current Medicare ground ambulance payment system is based in part on the 1998 cost data of 421 ambulance entities, as referred to above.⁸ Using these data and feedback gathered through a budget neutral negotiated rulemaking process, CMS set the payment weights (relative value units or relative value unit (RVU) for the seven types of ground ambulance services, and payments for these services have been updated annually using a standardized inflation factor (currently the consumer price index).⁹ On two other occasions, the US Government Accountability Office (GAO) conducted surveys of ground ambulance entities to gather cost data; the first—of 215 entities in 2004 and the second—of 154 entities—in 2010.^{10,11} Data from the GAO were used to inform policymaking, but were not used to set base payment rates for ground ambulance services under Medicare fee-for-service (FFS).

In a 2012 report, the GAO concluded that, based on the 2010 cost survey data, the 2010 median Medicare margin for their sample of ambulance entities was 2.0 percent, including both the base Medicare payment rates and add-on payment adjustments for geographic service areas. In addition, the GAO found that higher costs per case were associated with ambulance entities with lower volumes.¹² Further, in a 2013 report to Congress, the Medicare Payment Advisory Commission highlighted the lack of adequate cost data collection for the ambulance industry and made several recommendations related to revising the Medicare payment system, such as rebalancing the ground ambulance RVUs.¹³

The scope of the ground ambulance industry is significantly larger than the samples used to inform payment and policy to date. In 2022, roughly 10,500 entities billed CMS for reimbursement for the provision of 10.8 million ground ambulance services under Medicare FFS. These services accounted for approximately \$4.1 billion in 2022 Medicare FFS payments.¹⁴ Relative to 2019, Medicare FFS ground ambulance service volume declined 21 percent and payments declined 13 percent. These declines are associated with changes in utilization due to the COVID-19 pandemic, changes in CMS policy associated with non-emergency ambulance transports, and the transition of many beneficiaries to Medicare Advantage (MA). In 2024, MA reflects more than 50 percent of Medicare enrollment, and it is widely believed that most MA plans use Medicare FFS rates as the foundation of their ground ambulance payment.

RESEARCH METHODS

HMA's research goals for this analysis were to review the quality of the Amber dataset and assess the capacity of these data for use in calculating ambulance margins and setting Medicare FFS ground ambulance payment rates. Given the similarity of the Amber and GADCS design, we also aimed to identify potential insights about data collection methods, gaps in reporting, and the validity of data results when stratified by ambulance type.

Amber is the product of an online data collection survey capturing self-reported financial and descriptive information from AAA's members. Amber's structure mirrors the GADCS and relies upon the same variable definitions used for GADCS. The Amber dataset includes submissions from 2018 to 2024. HMA's observations of Amber and the data it contains are based on all the data included in Amber, but in our calculations of margins and other financial measures HMA chose to use only the Amber responses collected in 2023 and largely reflecting calendar year 2022 data. HMA chose 2022 because this reflects the most recent complete year in the Amber dataset. After cleaning the data and applying the survey response exclusion criteria, HMA analyzed responses from 273 unique providers for the assessment of margins and other financial measures. The Amber dataset includes more than 600 responses across all years.

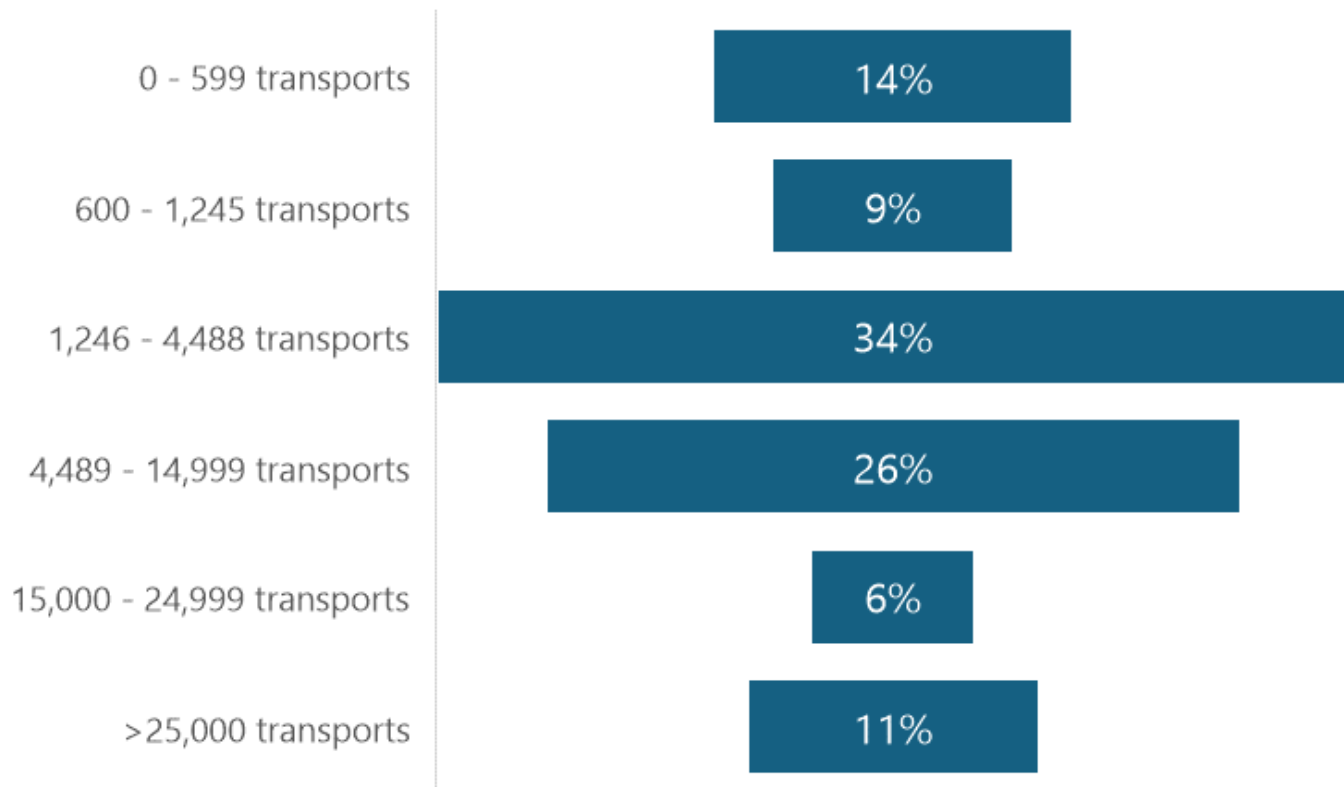
HMA's data analysis assessed the ground ambulance industry's cost structure, revenue structure, and margins stratified by type of ambulance entity. Margins were calculated using a formula of revenues minus costs over costs. We calculated three types of ambulance margins: all payer margins, Medicare fee-for-service margins, and Medicaid margins. To calculate Medicare FFS and Medicaid margins, HMA gathered ground transport utilization data from CMS's 100 percent Medicare FFS claims data for 2022 and CMS's 100 percent Medicaid claims data for 2022. To calculate the three types of margins we used payer revenues as specified by entities on their survey responses and adjusted costs as specified by entities by the share of transports attributed to Medicare FFS and Medicaid. In addition, HMA created several categorical variables to stratify costs, revenues, and margins by ambulance type. This included: geographic service area, size (annual transport volume), share of emergency transports, ownership structure, and fire and non-fire entities. To identify the geographic service areas of respondent entities, HMA relied on 2022 Medicare FFS claims data to assign each respondent entity to one of the three CMS ground ambulance service areas (urban, rural, super rural) based on the majority of transports each entity provided. The transport size categories used for this analysis were selected in an effort to be consistent with MedPAC and GAO reports.

DATA RESULTS

Amber Sample

- **Sample representativeness:** The sample of Amber data used for this analysis reflect responses gathered in 2023 and represent the previous calendar year. Our analysis of the results suggests that the sample of 273 is representative of the characteristics of the larger universe of ground ambulance entities. We compared the 2022 Amber sample with data reported by CMS and Rand in their April 2024 report.¹⁵
- **Geographic service area:** Responses to Amber were associated with 40 states. Based on the Medicare FFS claims for these entities, 53 percent of respondents serve mostly urban areas, 28 percent serve mostly rural areas, and 19 percent serve mostly super rural areas. However, many ambulance entities conduct transports in more than one of these three categories. The geographic stratification of the 2022 Amber sample is consistent with data recently reported by CMS/Rand.
- **Government and fire-related:** 67 percent of respondents were non-government entities, 24 percent were government entities without fire suppression operations, and 9 percent were government entities with fire suppression operations. Relative to data recently reported by CMS/Rand, the 2022 Amber sample includes a lower share of government entities.
- **Size distribution by total transports:** Respondents were distributed across several categories of size, as measured by the number of total transports per year. Within this sample, approximately 14 percent had fewer than 600 transports per year, and 11 percent had more than 25,000 transports per year (Figure 1). Relative to the data recently reported by CMS/Rand, the 2022 Amber sample includes a lower proportion of the smallest ground ambulance entities.
- **Service type distribution:** 52 percent of respondents had a service mix where more than two-thirds of their transports were emergency transports, while 33 percent of respondents had a service mix where less than one-third of their transports were emergency related. The remaining 16 percent of respondents had a more diverse mix of emergency and non-emergency transports. The recent CMS/Rand report did not include data to enable this important comparison.

Figure 1. Share of ground ambulance entities by size (number of total transports in 2022)

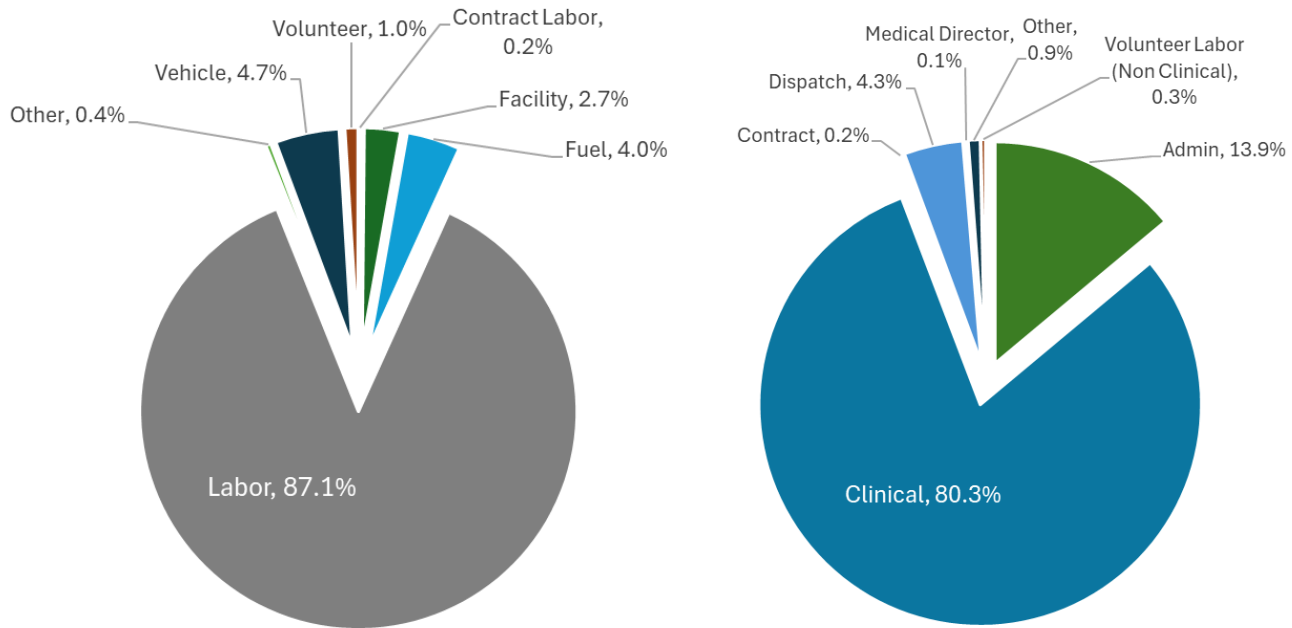


Source: HMA analysis of the 2022 Amber dataset

Cost Structure

- Amber data reveal that in 2022 the cost structure of the industry continued to be dominated by labor. In 2022, approximately 87 percent of costs were classified as labor, on average (Figure 2A). Among the remaining costs, vehicle costs accounted for nearly 5 percent of total costs, fuel costs accounted for 4 percent, and facility costs accounted for nearly 3 percent. Further, our analysis revealed that ground ambulance entities with a fewer than 600 transports per year had slightly different cost structures than larger entities. Among these small entities, volunteer costs and facility costs were a larger share of total costs. Within the labor cost category, in 2022, on average 80 percent of labor costs were associated with clinical staff (Figure 2B). Among the remaining labor costs, nearly 14 percent was associated with administrative staff and 4 percent was associated with dispatch service staff.

Figures 2A and 2B. Average share of ground ambulance entity costs by category and share of labor costs by occupational category (2022)

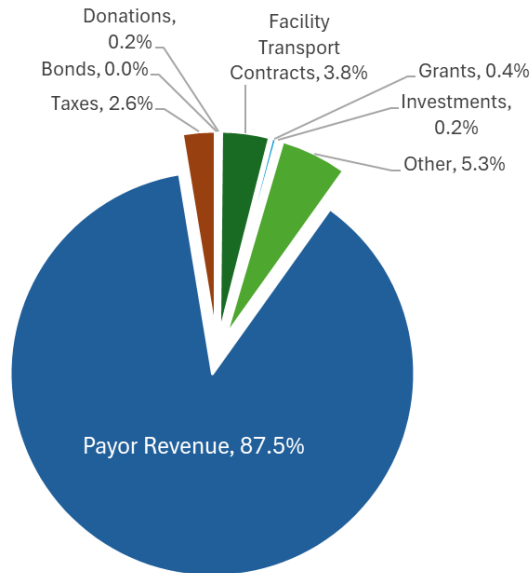


Source: HMA analysis of the 2022 Amber dataset

Revenue Sources

- Amber data reveal that in 2022 ground ambulance industry revenue sources are dominated by payer revenues but include other important elements. On average, 88 percent of revenues were from payers (Figure 3). An additional 4 percent of revenues came from contracts with facility providers such as hospitals and skilled nursing facilities for interfacility and other ground transports. Nearly 3 percent of revenues were from state and local taxes. Given the under-representation of government and fire-related entities in the Amber dataset, it is reasonable to assume that a fully representative sample may demonstrate a slightly higher share of revenue attributed to taxes, bonds, donations, and grants.
- Within the payer revenue category, we observed that for the Amber sample roughly 28 percent of total revenues were from commercial payers, 19 percent was from traditional Medicare, 17 percent was from Medicare Advantage plans, 17 percent was from Medicaid (managed care and fee-for-service), 9 percent was self-pay, 3 percent was from TriCare or the Veterans Administration, and less than 7 percent from other payer sources (workers compensation or unknown). Further, for entities defined as serving mostly rural and super rural areas, the share of payer revenues associated with Medicare FFS was higher at roughly 20 percent and shares of Medicare Advantage and Medicaid were slightly lower.

Figure 3. Average share of revenue for ground ambulance entities by type of revenue (2022)



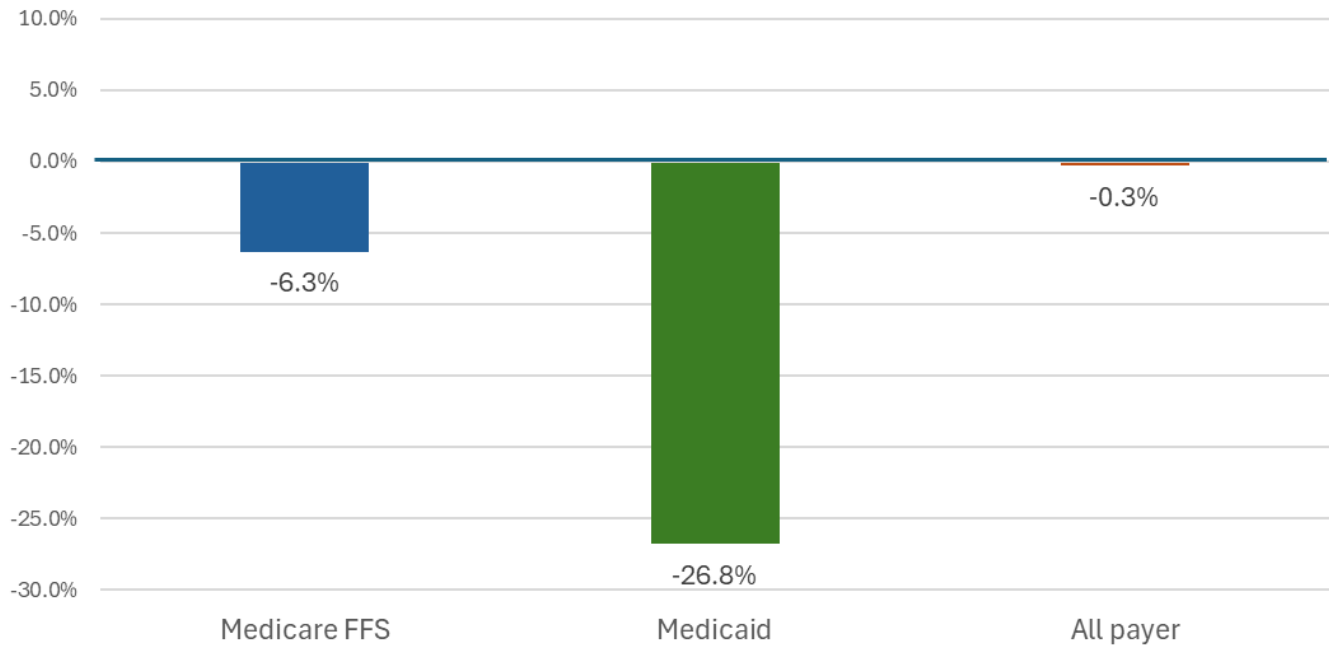
Source: HMA analysis of the 2022 Amber dataset

Margins

Examining the all payer margins and payer-specific margins is crucial for a comprehensive understanding of financial health and sustainability of the ground ambulance industry. Calculating margins across all payers collectively and excluding non-payer revenue streams similarly offers insight into profitability and financial status. In addition, given variation in payer reimbursement rates, we also analyzed the extent of variability in Medicare FFS and Medicaid margins. These individual margins are particularly important for identifying financial vulnerabilities and setting payment rates. Due to the variability of these data, we report median margins. With regard to Medicare FFS margins, it is important to note that these data include both the Medicare base payment and the Medicare add-on payments determined by geographic service area.¹⁶

Amber data were used to generate margins of various types, and the results fell within our range of expectations. Based on the GAO's past analyses, we anticipated that Medicare FFS margins would be negative. We also anticipated that Medicaid margins would be lower than Medicare FFS margins. Amber data demonstrate a -6 percent median Medicare FFS margin in 2022, and a -27 percent median Medicaid margin (Figure 4).¹⁷ Without the existing Medicare FFS add-on payments built into these results, Medicare FFS margins would be lower. Additionally, Medicaid margins are lower than Medicare margins in part due to the complex structure of Medicaid reimbursement in many states and the inconsistent reporting of these revenues by ambulance entities.¹⁸ Further, we calculated a -0.3 percent median margin for the industry when all payer revenues were combined (Medicare, Medicaid, commercial insurers, and others). Margins across all payers tend to be higher than Medicare and Medicaid margins because commercial insurers often pay higher rates than public payers for ground ambulance services.¹⁹

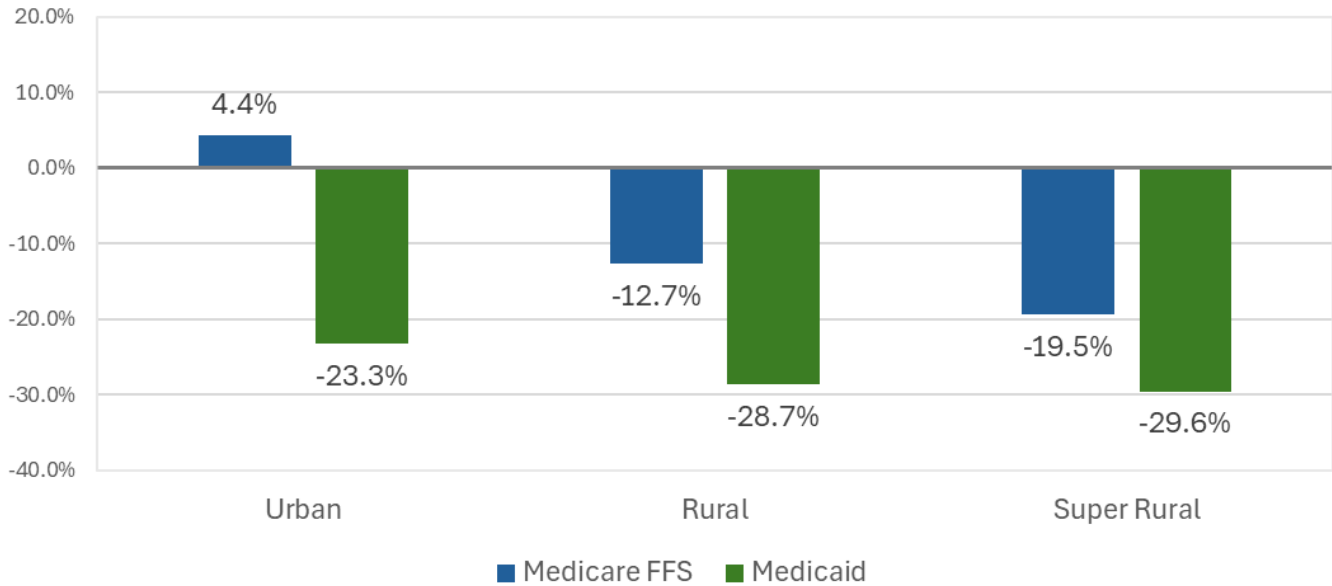
Figure 4. Median and average margins for ground ambulance entities by type of margin (2022)



Source: HMA analysis of the 2022 Amber dataset

Medicare FFS and Medicaid median margins are higher for ground ambulance entities serving primarily urban service areas and decline as service areas become more rural. In 2022, urban ground ambulance entities had a median Medicare FFS margin of 4 percent (Figure 5). By contrast, entities serving mostly rural service areas had a median Medicare FFS margin of nearly -13 percent and entities serving mostly super rural service areas had a median Medicare FFS margin of -20 percent. The existing Medicare FFS add-on payments are built into these margins, and margins would be lower if the add-ons were removed from this calculation. Further, relative to Medicare FFS margins, Medicaid margins across the three service area categories are all significantly lower but demonstrate a similar trend, with relatively higher margins for entities serving urban service areas and lower margins as service areas become more rural.

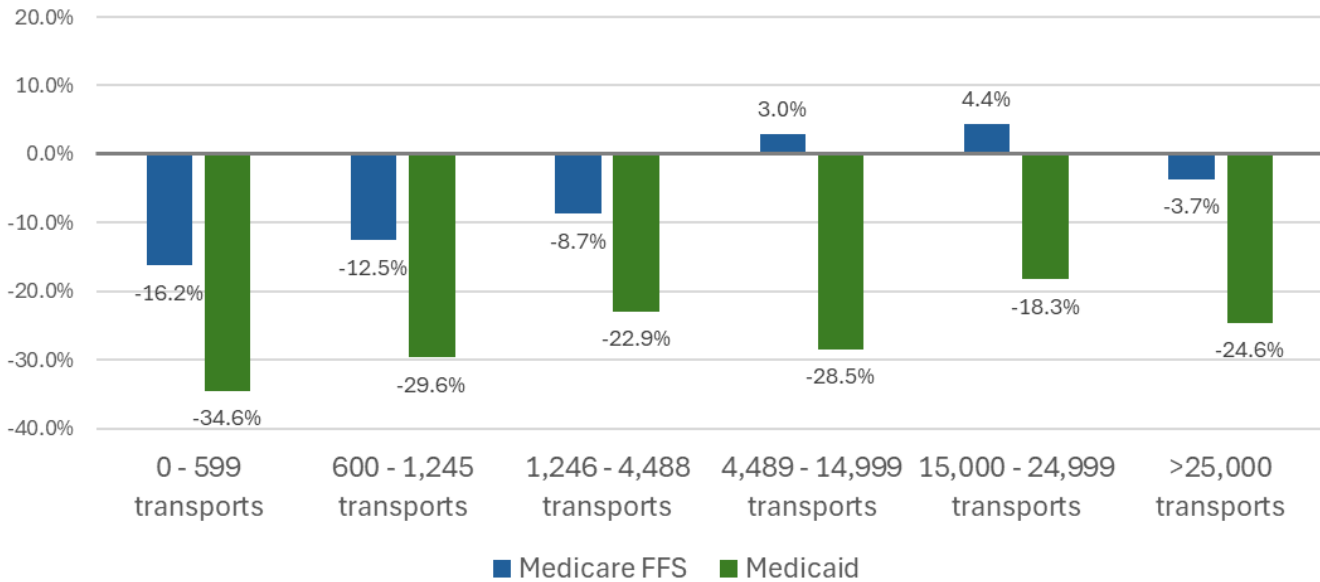
Figure 5. Median Medicare FFS and Medicaid margins for ground ambulance entities by service area (2022)



Source: HMA analysis of the 2022 Amber dataset

Medicare FFS and Medicaid median margins decline as the size of ground ambulance entities decline. In 2022, ground ambulance entities with fewer than 600 total transports per year had median Medicare FFS margins of -16 percent (Figure 6). In the context of Medicare FFS, our measure of median Medicare FFS margins increased consistently with entity size, with the exception of the largest entities (more than 25,000 total transports per year). For the largest entities, median Medicare FFS margins were negative, at nearly -4 percent. This negative margin for the largest entities may be due in part to the relatively small number of entities responding to the Amber survey in that categorical group. Median Medicaid margins demonstrate a similar trend. Ground ambulance entities with fewer than 600 total transports per year had median Medicaid margins of -35 percent and margins largely increased consistently with entity size. However, Medicaid margins also demonstrate slightly worse margins for entities in the largest size category.

Figure 6. Median and average Medicare FFS and Medicaid margins for ground ambulance entities by entity size (total number of transports per year) (2022)



Source: HMA analysis of the 2022 Amber dataset

OBSERVATIONS

Based on our experience working with Amber survey data, we offer the following observations for the consideration of policymakers, stakeholders, and researchers working with ground ambulance survey data in the future. We have categorized our observations into two groups: how the ground ambulance industry has evolved since cost data were last collected, and the design of cost data collection efforts.

Evolution of the Ground Ambulance Industry

- Labor cost share increased:** The cost structure of the ground ambulance industry has changed since the GAO's analysis of 2010 data, particularly with regard to the cost of labor. The Amber dataset demonstrates that in 2022 labor accounted for 87 percent of the industry's costs. By contrast, entities included in GAO's reported that 61 percent of their costs were associated with labor.²⁰ This may be in part caused by increasing wages for Emergency Medical Technicians (EMTs) and paramedics. According to data from the Bureau of Labor Statistics, the mean annual salary increased roughly 35 percent from 2010 to 2022 (from \$33,300 to \$45,000).²¹ Across these analyses and between 2010 and 2022, the share of costs associated with fuel (4 percent) remained constant.

- **Cost and revenue structures vary most by ambulance entity size and geographic service area:** Cost and revenue structures varied most by size of entity and geographic service area. Smaller entities and rural/super rural entities had a higher share of their costs associated with facilities and fuel. In addition, smaller entities and rural/super rural entities were less reliant on payer revenues and more reliant on municipal taxes and other community funding sources. As a result, costs per transport tend to be higher for smaller entities and entities serving rural and super rural areas.
- **Medicare FFS margins declined:** Amber data suggest that the median Medicare FFS margin of ground ambulance entities in 2022 was -6.3 percent, including Medicare’s geographically-based add-on payments. By contrast, in their most recent report on this topic, GAO reported a 2010 median Medicare margin of +2 percent. Rural and super rural entities as well as the smallest entities had the lowest median Medicare FFS margins. Further, given the fact that the Amber data skews towards larger entities, it is possible that GADCS survey data may display lower overall median Medicare FFS margins when a greater number of smaller entities are included.
- **Medicaid margins lower than Medicare FFS margins:** Nationally, the median Medicaid margin for ground ambulance services was far lower in 2022 than the Medicare FFS margin, at -27 percent. Similar to Medicare FFS margins, Amber data reveal that rural and super rural entities as well as the smallest entities had the lowest median Medicaid margins.

Design of Cost Data Collection Efforts

- **Low response rates and need for small entity responses:** Amber response rates were low relative to the number of ambulance entities billing Medicare and the GADCS response rates (85 percent), and smaller entities were slightly underrepresented.²² Across four years of collecting data, Amber has received approximately 1,000 responses—or 10 percent of the universe of ground ambulance entities billing Medicare annually. While this is a sufficient sample for evaluation, additional data would strengthen the validity and representativeness of the content.²³
- **Data quality:** Survey incompleteness and outlier values were relatively common within the Amber data and led to increased variability of results. However, these are common concerns with self-reported survey data and we see precedent of this described in the 1999 Project Hope report concerning ground ambulance cost data.²⁴ Incompleteness of individual surveys was caused by item nonresponse, whereby survey responses include missing or zero values for a small set of reported variables. In other cases, we observed responses with unusually high or low values. These data quality concerns were most common with revenue and cost variables with complex definitions. These data quality concerns are likely due to the newness of cost reporting for the ambulance industry and respondents’ lack of familiarity with variable definitions. HMA developed response exclusion criteria to eliminate outlier values and reduce data variability.

- **Geographic service area assignment of ground ambulance entities:** For research purposes, Amber data did not easily enable the assignment of ground ambulance entities into one of the three geographic service areas: urban, rural, super rural. Because an entity's financial health and Medicare FFS payment can vary by service area and the mix of service areas they serve we used Medicare claims to calculate the share of transports each entity picked-up in each of the three geographic service areas and assigned entities to one of the three based where they serve the majority of cases.²⁵ This methodology is consistent with the 2007 GAO report on ambulance costs in Medicare.²⁶
- **Facility contract revenue definition:** Revenues derived from contracts ground ambulance entities sign with healthcare facilities such as hospitals and skilled nursing facilities, identified above as 3.8 percent of total revenues in 2022, reflect revenues associated with transporting patients but is technically not payer revenue. Under the facility contracts, entities are not reimbursed by payers but by the facilities for providing transports to their residents. These contracts can take the form of a fixed fee retainer or payment per transport. Within our analysis, we defined these revenues separate from payer revenue. They are therefore not included in the calculation of our payer, Medicare, or Medicaid margins. To ensure consistency within the policy debate, it will be important that CMS and MedPAC and other researchers define contract revenues similarly.
- **Uncompensated care and bad debt not reported:** Amber data do not include a field for respondents to identify the scope of their uncompensated care and bad debt. Bad debt results in lost revenues and contributes to lower margins. For ground ambulance entities, bad debt often occurs when patients do not satisfy their insurer's cost-sharing obligations or when ambulances respond and treat patients without transporting them. There is precedent at CMS for collecting these data and possessing these data would enable a deeper understanding of how uncompensated care and treatment without transport alter ambulance entity costs and margins, and the extent to which they vary by entity size, geographic service area, service type, and payer source.
 - The growth of MA enrollment has resulted in higher levels of unpaid beneficiary cost-sharing because cost-sharing under MA plans is higher on average than the 20 percent cost-sharing for beneficiaries enrolled in traditional Medicare. Between 2019 and 2021 the share of ground transports associated with a beneficiary enrolled in an MA health plan increased from 38 percent to 47 percent. An HMA analysis of 2024 MA plan benefit data revealed that the average cost-sharing of MA plans ranged from a 55 percent to 100 percent (\$180 to \$306 per transport) of the national average payment for a ground ambulance transport under traditional Medicare.

- Treatment without transport is common within the ambulance industry and has increased. In these cases, ambulance entities incur the cost of responding to a medical scene but often (especially under Medicare) do not receive reimbursement. Estimates of the volume of these cases vary from 2 percent to 10 percent of all ground ambulance responses. Research also suggests instances of treatment without transport have increased in recent years, and vary by type of payer and patient age.^{27,28}
- There is precedent for collecting data concerning provider uncompensated care and bad debt within CMS's hospital cost reporting system. CMS has made great strides toward clearly defining these variables in their cost reporting instructions.
- **Supply costs for key medications unclear:** The Amber survey does not adequately capture the costs of the medications that are most likely to drive cost growth for ground ambulance entities.²⁹ Given that drug cost growth has outpaced the consumer price index in recent years, these products are common to ambulances, and currently bundled into current ambulance payment rates, future cost collection efforts should more specifically identify the top ten medications by cost.

RECOMMENDATIONS

Based on our analysis, we offer several recommendations to policymakers and stakeholders for improving future ground ambulance cost data collection efforts. If implemented, these recommendations will strengthen the data collected from ground ambulance entities, provide a better understanding of industry dynamics, and lead to more accurate payment policy.

- **Provide educational support to respondents to improve consistency of data reporting:** With regard to data quality, validation, and cleaning, our experience working with the Amber survey data is consistent with the experience described by researchers at Rand Health Care analyzing the GADCS survey data.³⁰ Similar to the GADCS data, Amber data required validating and cleaning efforts to account for outlier responses. To improve the quality of data reported and payment accuracy, CMS should devote resources to conducting education of ground ambulance entities about the definitions of GADCS variables. As a part of this effort, CMS should target small and government entities and variations pertaining to revenues and costs.
- **Streamline and modify data collection devices to adhere to industry trends and challenges:** To improve response rates and data quality, CMS and others collecting cost data from ground ambulance entities should streamline data collection devices to eliminate variables unrelated to rate setting. Further, to a reasonable degree, CMS and others should continue to modify data collection devices on an ongoing basis to adapt to industry trends and challenges.

- **Develop a standardized geographic service area assignment method for research purposes:** To improve understanding of the profitability of ambulance entities, CMS or MedPAC should incorporate ambulance industry input to define a standardized method for assigning individual ambulance entities to one of the three geographic service areas for which Medicare makes geographically-based ground ambulance add-on payments. At this point in time, this assignment method should be used for policy analysis and not for payment purposes.
- **Collect data on ground ambulance uncompensated care and bad debt:** CMS and other stakeholders should collect information from ground ambulance entities detailing their uncompensated care and bad debt. These variables should be stratified by the payment source of uncompensated care and bad debt, such as self-pay, Medicare Advantage plans, Medicaid managed care plans, other commercial plans, and other payers. In addition, it is important that definitions of uncompensated care and bad debt be specifically defined within the survey instructions.
- **Collect payer-level data for cases involving treatment without transport:** CMS and others collecting cost data from ground ambulance entities should include variables that gather the volume of cases for which ground ambulance entities provide treatment without transporting the patient. These data should be stratified by payer type to enable the understanding of the impact of these cases on payer-level profitability.
- **Collect targeted data on medication supply costs to more accurately reflect these costs in payment rates:** CMS and others collecting cost data from ground ambulance entities should gather information on medication supply costs categorized by drugs, medical devices, and communication technologies.
- **CMS should consider ground ambulance cost data collection on a semi-regular basis:** CMS should consider collecting data from the ground ambulance industry on a semi-regular basis. Balancing the administrative burden of cost data collection for smaller ground ambulance entities and the need to keep pace with industry trends, collecting data every five years may be sufficient to maintain payment adequacy. In addition, to ensure strong response rates, data reporting should be mandatory for the entities required to report.
- **CMS should consider phasing in the use of GADCS data to ensure that the data reflect the diversity of ambulance entities and that there is consistency in reporting key financial variables:** CMS should consider phasing in the use of GADCS data for payment purposes, such as rebasing the ground ambulance relative value units, modifying add-on payments, or developing novel payment policies. These data should only be used to set payment rates when the sample reflects the diversity of the universe of ground ambulance entities and there is general consistency in reporting key financial variables.

CONCLUSIONS

Through the Amber data collection effort, the ground ambulance industry has submitted meaningful data that reflects the complexity of the industry and its challenges, offering insights for future data collection efforts. The Amber dataset reflects the wide range of ground ambulance entities serving communities, including both small and large entities, urban and super rural entities, and government and non-government entities. This dataset includes reliable data for use in understanding the labor-dominated cost structure and complex revenue structure of ambulance entities. These data enable the calculation of several types of margins, which isolate the unique challenges of ground ambulance entities with regard to Medicare and Medicaid reimbursement.

The Amber dataset also highlights several improvements that should be made to cost data collection efforts to ensure that data like these can be used to inform payment reforms that enhance the accuracy of the Medicare FFS payment system for ground ambulance services. Low response rates and data incompleteness underscore longstanding concerns about the readiness of the ground ambulance entities for cost reporting. This also suggests that CMS will need to provide additional education support to entities to ensure that the data they receive through GADCS is reliable for rate setting. These data also signal the potential benefits of a more streamlined cost reporting device. Our analysis of Amber revealed ground ambulance cost collection efforts in the future must include variables such as uncompensated care and treatment without transport by payer.

ACKNOWLEDGEMENTS

Health Management Associates (HMA) would like to thank the American Ambulance Association for their support in funding our assessment of ground ambulance cost data collection. HMA retained final editorial control over this paper's content, methodology, findings, and recommendations.

ABOUT HMA

HMA is a leading independent national research and consulting firm specializing in publicly funded healthcare. Founded in 1985, HMA has over 700 consultants working in more than 20 state cities including Washington D.C. Our consultants support clients on Medicare, Medicaid, and commercial insurance policy topics as well as with public health, clinical, and organizational strategy. For this assessment, HMA's authors and analytic team included: Zachary Gaumer (Managing Principal), Brigit McDannell (Senior Data Analyst), Dena Hasan (Associate Principal), and Mikayla Curtis (Research Associate).

ENDNOTES

- ¹ American Ambulance Association. Ambulance Cost Collection. 2023. Available at: <https://ambulance.org/advocacy/cost-reporting/>.
- ² US Government Accountability Office. Rural Ambulances: Medicare Fee Schedule Payments Could be Better Targeted | U.S. GAO. Available at: <https://www.gao.gov/assets/hehs-00-115.pdf>.
- ³ Health Care Finance Administration. Medicare Program; Meetings of the Negotiated Rulemaking Committee on Ambulance Fee Schedule. Federal Register. Available at: <https://www.federalregister.gov/documents/1999/05/07/99-11560/medicare-program-meetings-of-the-negotiated-rulemaking-committee-on-ambulance-fee-schedule>.
- ⁴ Due to the COVID-19 Public Health Emergency (PHE), CMS delayed the data collection and reporting requirements for ground ambulance organizations that were selected to participate in Year 1 and Year 2 of the GADCS. Selected organizations in Years 1 and 2 began collecting information in 2022 and began reporting information in 2023. Originally, data collection was scheduled to occur between 2020 and 2024, but as a result of COVID, CMS delayed and condensed data collection.
- ⁵ Centers of Medicare and Medicaid Services. Medicare Ground Ambulance Data Collection System (GADCS) Frequently Asked Questions (FAQ). Available at: https://www.hhs.gov/guidance/sites/default/files/hhs-guidance-documents/medicare_ground_ambulance_data_collection_FAQ.pdf.
- ⁶ Mulcahy AW, Heins SE, Rasmussen PW, et al. Medicare Ground Ambulance Data Collection System (GADCS) Report: Year 1 and 2 Cohort Analysis. Centers for Medicare & Medicaid Services. Available at: <https://www.cms.gov/files/document/medicare-ground-ambulance-data-collection-system-gadcs-report-year-1-and-year-2-cohort-analysis.pdf>.
- ⁷ American Ambulance Association. Ambulance Cost Collection. Available at: <https://ambulance.org/advocacy/cost-reporting/>.
- ⁸ Mohr PE, Cheng M, Mueller CD, and Good CD. Findings from the 1999 National Survey of Ambulance Providers: Final Report. 2000. Bethesda, MD, Project HOPE Center for Health Affairs.
- ⁹ US Government Accountability Office. Rural Ambulances: Medicare Fee Schedule Payments Could be Better Targeted | U.S. GAO. Available at: <https://www.gao.gov/assets/hehs-00-115.pdf>.
- ¹⁰ US Government Accountability Office. Ambulance Providers: Costs and Expected Medicare Margins Vary Greatly | U.S. GAO. Available at: <https://www.gao.gov/products/gao-07-383>.
- ¹¹ US Government Accountability Office. Ambulance Providers: Costs and Medicare Margins Varied Widely; Transports of Beneficiaries Have Increased | U.S. GAO. Available at: <https://www.gao.gov/products/gao-13-6>.
- ¹² Ibid.
- ¹³ Medicare Payment Advisory Commission (MedPAC). Chapter 7: Mandated report: Medicare payment for ambulance services (pp. 165-197). essay. Available at: https://www.medpac.gov/wp-content/uploads/import_data/scrape_files/docs/default-source/reports/chapter-7-mandated-report-medicare-payment-for-ambulance-services-june-2013-report-.pdf.
- ¹⁴ Health Management Associates' internal analysis of CMS's 100% Medicare FFS claims data files for 2022.
- ¹⁵ Rasmussen PW, Cantor J, Gildner J, Heins S & Mulcahy AW. Ground Ambulance Industry Trends, 2017–2022. Available at: <https://www.cms.gov/files/document/ground-ambulance-industry-trends-2017-2022-report-analysis-medicare-fee-service-claims.pdf>.
- ¹⁶ As of November 2024, under Medicare FFS ambulance entities receive a 2 percent add-on payment for all transports originating in urban zip codes, a 3 percent add-on payment for transports originating in rural zip codes, and a 22.6 percent add-on payment for all transports originating in super rural zip codes.
- ¹⁷ Medicare revenues are captured in the Amber survey consistently across states, either as Medicare FFS or Medicare Advantage. For the purposes of this analysis, we focused only on Medicare FFS revenues and margins. By contrast, Medicaid revenues are not captured consistently by state, because many states require Emergency Medical Services (EMS) providers to pay an assessment fee to the state agency which is then redistributed to EMS providers that meet certain criteria as determined by the state. As a result of this dynamic Medicaid revenue may be under-reported as such in survey data, and instead appear as tax revenue or another type of revenue. Therefore, Medicaid margins generated by Amber may appear lower than actual.
- ¹⁸ Many state Medicaid payment systems include supplemental reimbursement components that service providers, including ambulance entities, may receive separate from standard reimbursement. As a result, revenues stemming from Medicaid supplemental reimbursements may appear as revenues tied to non-Medicaid revenue or other state and local revenue within cost data collection efforts.

¹⁹ The all payer margin is calculated as the sum of revenues from all payers minus the sum of total costs divided by the sum of total costs. Payer revenues are revenues associated with transports from Medicare, Medicaid, commercial payers, TriCare, and other payer sources. Ground ambulance entities also receive revenues from non-payer sources, such as taxes, facility transport contracts, grants, and donations. These other revenues are not included in HMA's calculation of all payer margins. These other revenues are known to buoy the industry's balance sheets to widely varying degrees.

²⁰ US Government Accountability Office. Ambulance Providers: Costs and Medicare Margins Varied Widely; Transports of Beneficiaries Have Increased | U.S. GAO. Available at: <https://www.gao.gov/products/gao-13-6>.

²¹ U.S. Bureau of Labor Statistics. Occupational Employment and Wage Statistics Tables. Available at: <https://www.bls.gov/oes/tables.htm>.

²² Mulcahy AW, Heins SE, Rasmussen PW, et al. Medicare Ground Ambulance Data Collection System (GADCS) Report: Year 1 and 2 Cohort Analysis. Centers for Medicare & Medicaid Services. Available at: <https://www.cms.gov/files/document/medicare-ground-ambulance-data-collection-system-gadcs-report-year-1-and-year-2-cohort-analysis.pdf>.

²³ Past surveys by Project Hope Center for Health Affairs in 1999 and GAO in 2010 had response rates in the 50 percent range. These two earlier surveys were also voluntary, but they were targeted and armed with federal authority. By contrast, GADCS is a mandatory program, and we anticipate its response rates will be high because non-response may result in non-payment by Medicare.

²⁴ Mohr, P E, Cheng, M, Mueller, C D, and Good, C D. Findings from the 1999 National Survey of Ambulance Providers: Final Report. 2000. Bethesda, MD, Project HOPE Center for Health Affairs.

²⁵ HMA's method for defining ambulance entities in geographic service areas is if 60 percent of primary service area zip codes were designated by the Census as super rural then the provider was categorized as super rural. If 60 percent and or more of the primary service zip codes were rural then the provider was considered rural. All else were defined as urban.

²⁶ U.S. Government Accountability Office. Ambulance Providers: Costs and Expected Medicare Margins Vary Greatly | U.S. GAO. Published May 23, 2007. Available at: <https://www.gao.gov/products/gao-07-383>

²⁷ FairHealth. A window into utilization and cost of ground ambulance services: A national study of private healthcare claims. Published September 14, 2023. Available at: <https://s3.amazonaws.com/media2.fairhealth.org/brief/asset/A%20Window%20into%20Utilization%20and%20Cost%20of%20Ground%20Ambulance%20Services%20-%20A%20FAIR%20Health%20Brief.pdf>.

²⁸ Mulcahy AW, Heins SE, Rasmussen PW, et al. Medicare Ground Ambulance Data Collection System (GADCS) Report: Year 1 and 2 Cohort Analysis. Centers for Medicare & Medicaid Services. Available at: <https://www.cms.gov/files/document/medicare-ground-ambulance-data-collection-system-gadcs-report-year-1-and-year-2-cohort-analysis.pdf>.

²⁹ HMA's analysis of NEMSIS data suggest that the use of medications during ambulance transports are highly concentrated in a small set of medications, but interviews with industry officials also suggests that medication use has changed significantly over the last decade. While oxygen is always among the most common items on the list of the top 10 medications used for ground ambulance services, over the last two decades medications such as naloxone, epinephrine, ketamine, and fentanyl have become more common.

³⁰ Mulcahy AW, Heins SE, Rasmussen PW, et al. Medicare Ground Ambulance Data Collection System (GADCS) Report: Year 1 and 2 Cohort Analysis. Centers for Medicare & Medicaid Services. Available at: <https://www.cms.gov/files/document/medicare-ground-ambulance-data-collection-system-gadcs-report-year-1-and-year-2-cohort-analysis.pdf>.