

## Missouri State Paramedic Shortage Survey

### Missouri EMS Association

October, 2020 Survey Summary

Nationally, there has been a concern that there are insufficient licensed emergency medical services (EMS) personnel to staff ambulances and that this trend will increase due to a growth in the need for EMS care and difficulty with employee retention (Cash, Crowe, Agarwal, Rodriquez & Panchal, 2017). This national trend appears to be driven by factors that include pay and benefits; the desire to return for more education; dissatisfaction with management; and the choice to change careers.

In the fall of 2020, there were anecdotal reports of paramedic shortages throughout the state of Missouri (MO). In response to these concerns the Missouri Emergency Medical Services Association (MEMSA) developed a survey to gain a better understanding of this issue.

According to Sam Vance, former Missouri Bureau Chief, as of 10/19/20 there were 22,724 licensed EMS personnel in Missouri (Table 1).

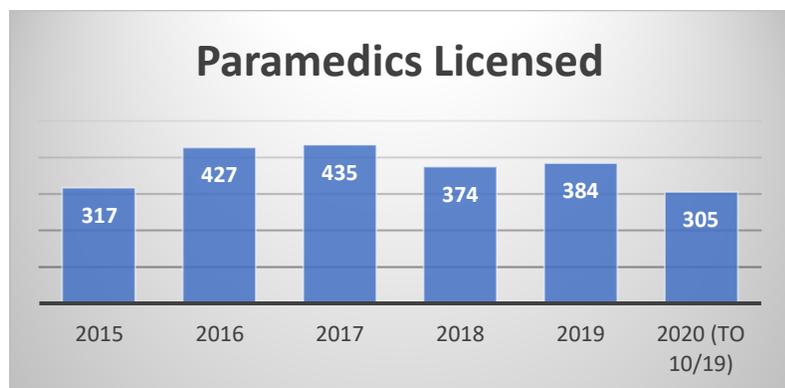
Table 1 – Number of licensed EMS Personnel in MO at 10/20/2020

Licensure Level	Licensed	Provisional License
EMT	14,537	25
AEMT	68	2
Paramedic	8,057	16
Community Paramedic	19	

(Personal communication Sam Vance, 10/20/2020)

The 8,073 paramedics in MO represent 35.5% of the workforce which is higher as compared to the 25% throughout the United States reported in the 2020 National EMS Assessment (USDOT, 2020). The total number of paramedics licensed in Missouri has not seen growth over the past five years (Fig. 1)

Figure 1 – Paramedics licensed in MO by year



(Personal communication Sam Vance, 10/20/2020)

Three surveys were developed to attempt to gain a multi-faceted view of the issues surrounding the perceived shortages. Each survey was targeted to a different group and asked slightly different questions, while there was significant over-lap in key areas. The surveys were targeted to Emergency Medical Services (EMS) personnel, EMS services and EMS educators.

### EMS Personnel Responses

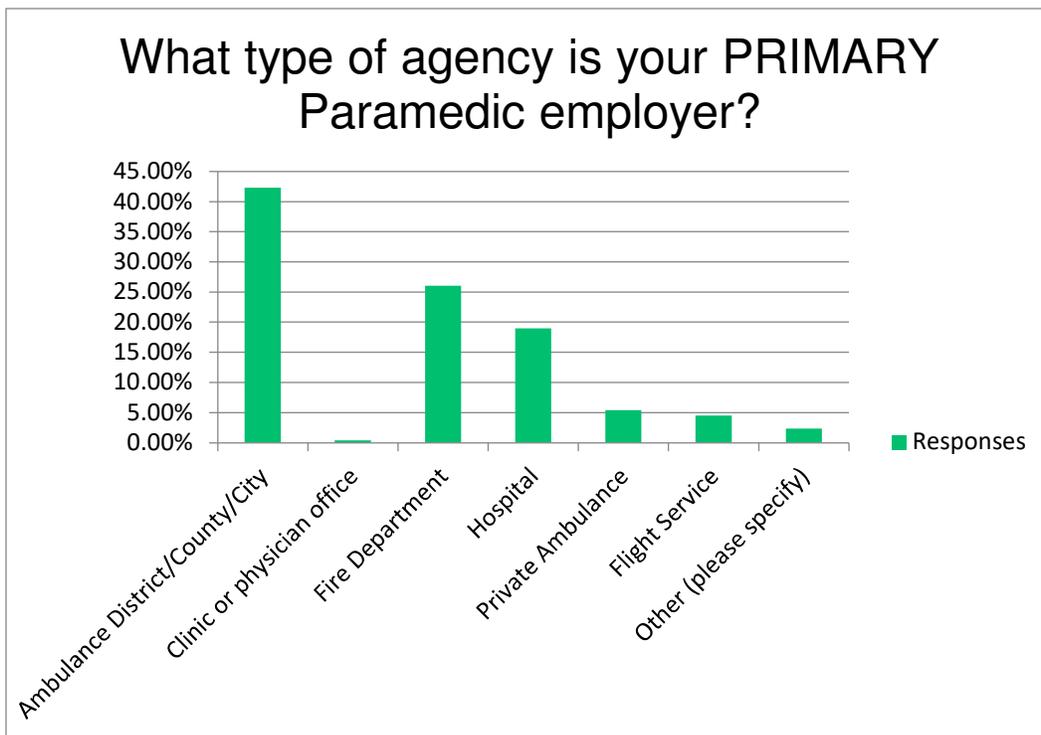
There were 554 responses from the 8,057 MO paramedics representing a 7% response rate. Responses were received from EMS personnel who lived in MO as well as those who lived in either Kansas or Illinois.

### *Employment*

Personnel who responded were almost all currently employed as paramedics (94.6%). Those who reported they were not employed as paramedics included EMTs, students, on medical leave, working in

other areas, or those who had left the profession for a variety of reasons. About three-quarters of those working as paramedics (76.7%) indicate that their primary, daily assignment is working on the ambulance. Most of the respondents (42.3%) worked for an ambulance district, county or city (Table 2). The group reporting other included those who were retired or no longer working in EMS.

Table 2 – Primary employer of paramedic respondents



Eighty-five percent of paramedic respondents said they think there is a paramedic shortage in Missouri. Those who felt there is a shortage listed a variety of factors they think relate to this. Many of these were echoed in comments made earlier in the survey. They included:

- \*Pay/benefits especially compared to firefighters, nurses and other highly skilled trades

- \*Inadequate reimbursement mechanisms to solve pay/benefits' issues

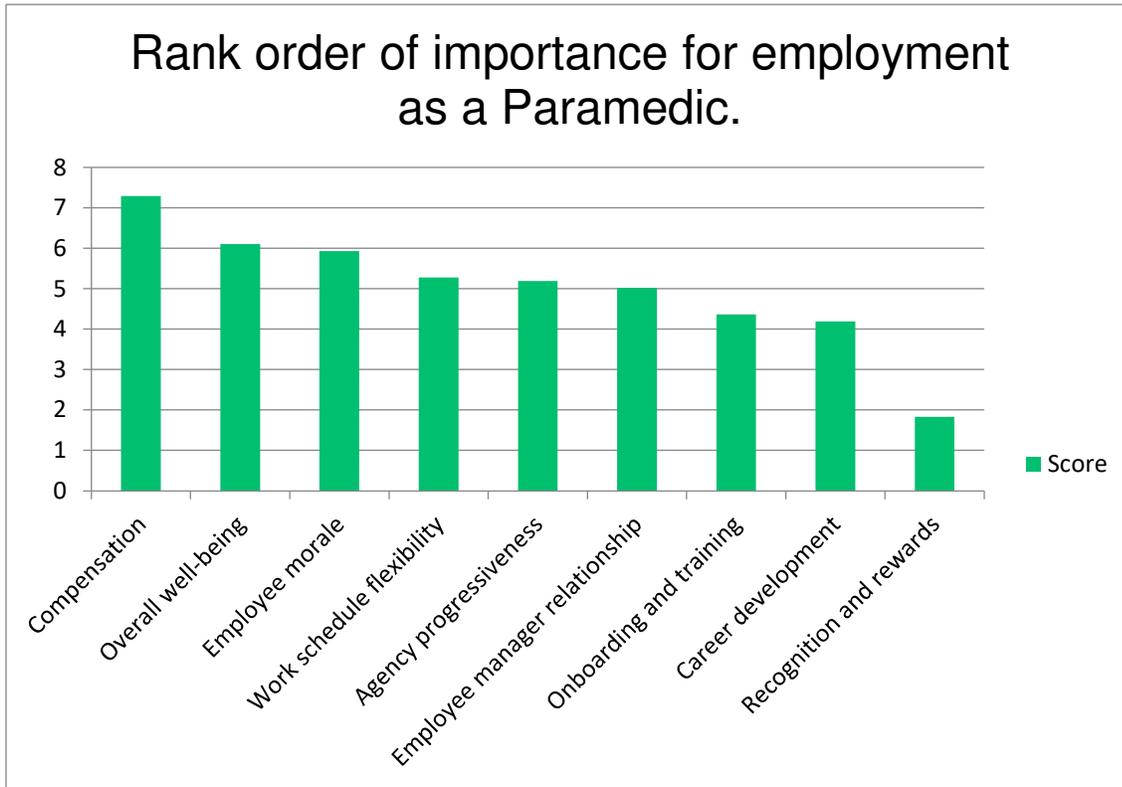
- \*Injuries
- \*Poor new graduates or lack of students entering the field
- \*Few applicants
- \*Safety
- \*Overworked
- \*Burnout
- \*Training opportunities limited/poor/expensive/inaccessible/CEU requirements
  - \*School is too expensive
- \*Generational differences – lack of pride; work attitude
- \*Losing paramedics to higher-paying urban employers
  - \*Too many agencies when consolidation might help
- \*Limited opportunities to advance
- \*Other employment options for graduates (hospitals, nursing)

On respondent commented, “Pizza delivery drivers are making \$15+ which is more than many paramedics are making”.

#### *Factors Important for Employment*

When asked to rank the importance of nine specified factors when looking for employment as a paramedic, the top three factors were compensation, over-all well-being, and employee morale. Respondents rated on-boarding and training, career development, and recognition and rewards as the lowest priorities (Table 3).

Table 3 – Ranking of importance of factors when seeking paramedic employment



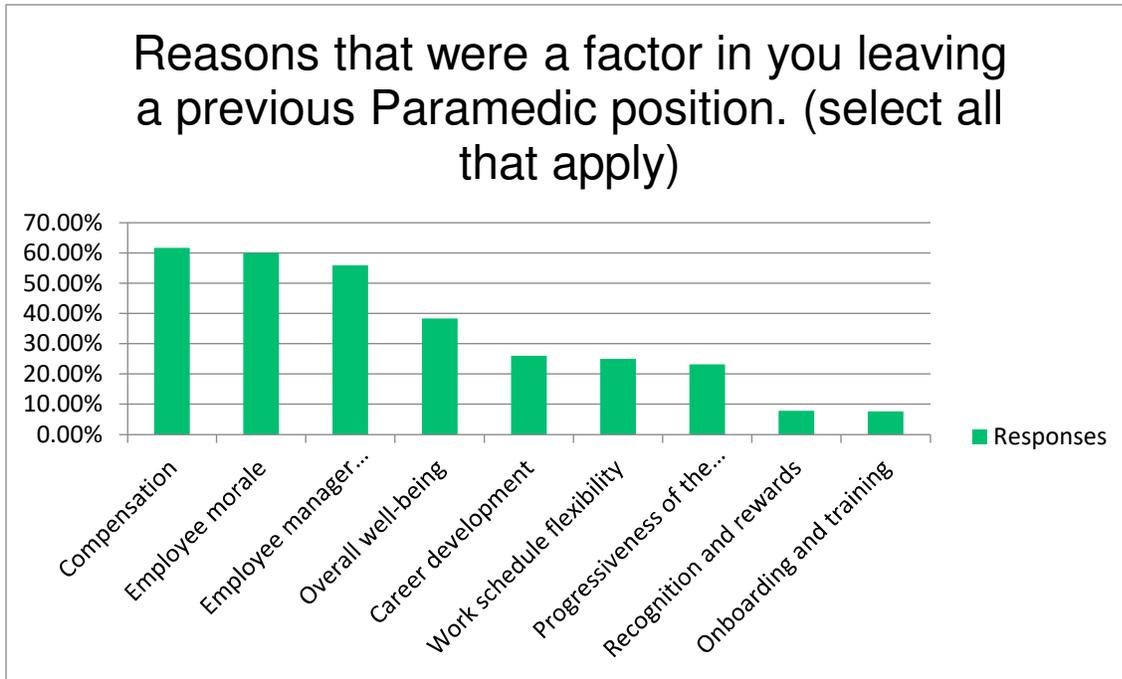
When other factors were solicited in a comments section compensation and benefits (including retirement) were the most frequent responses followed by equipment (Figure 2).

Figure 2 - Important factors when looking for paramedic employment – free text comments



Asked then to select any of these nine factors that caused them to leave a former paramedic position, compensation and morale topped the list. On-boarding and training, recognition and rewards, and progressiveness were chosen least often (Fig. 3).

Figure 3 – Factors related to leaving a former paramedic position



When examining the free-form comments related to this question, it is easy to see that they differed substantially from reasons a paramedic would choose an employer. While pay and benefits were mentioned often, poor leadership (management, administration, supervisors) was listed most frequently (Fig. 4).

Figure 4 - Other Factors for Leaving a Previous Paramedic Position



When ranking their general satisfaction on a five point Likert-type scale ranging from Very Very Satisfied (5) to Dissatisfied (score of 1), candidates rated their overall satisfaction with the job at the top (3.89); work hours came in second at 3.42; the work environment third (3.31); and benefits (3.06) and Rate/Pay at the bottom (2.68).

#### Ambulance Service Reponses

There were 164 responses to the ambulance services survey of the 214 ambulance agencies listed in the MO directory (77%). The respondents were split down the middle when asked if they are short paramedics to fill their normal full-time positions with exactly 50% indicating yes. Eighty-three agencies had current full-time paramedic openings ranging from 1-22 (Mean 3.12, Median 2, Mode 2). (Some agencies listed a range in this response – in these cases the highest number was used).

Regarding part-time positions, 96 of responding agencies (58.5%) indicate they are short paramedics. Ninety-three agencies noted that they currently have part-time vacancies. Part-time openings ranged from 1-10 (mean 3.32, median 3, mode 2).

One-hundred and thirty-eight agencies (84%) indicated that this issue has existed for a period of time (range 1-30 years [mean 5.6, median 4, mode 5]).

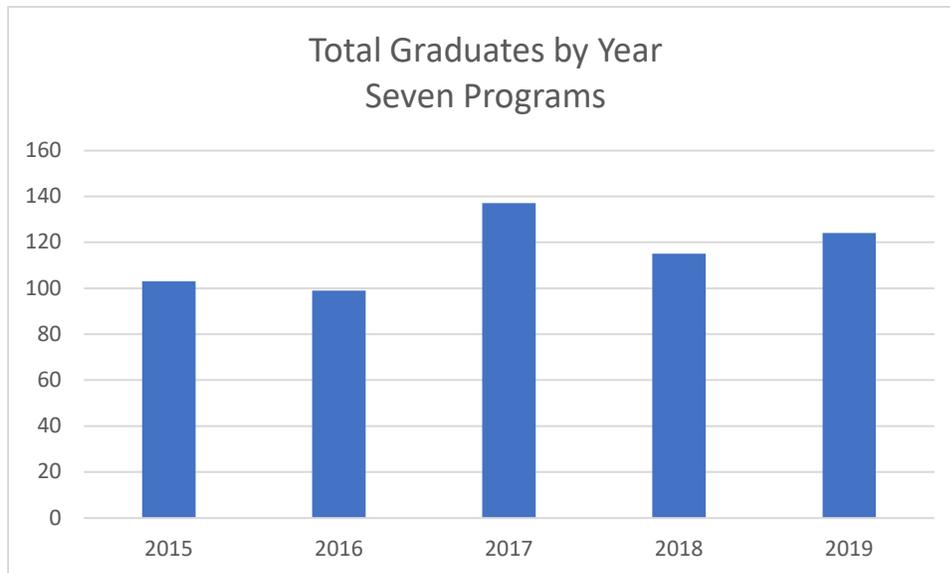
When asked to rate the reasons they felt there is a paramedic shortage on a scale of 1 to 4, agencies rated pay as the top factor (3.53), with work hours (2.36) and low benefits (2.34) next, and difficult work as last (1.83).

The free text responses indicating other factors contributing to the paramedic shortage yielded a variety of responses, however barriers to entry-level paramedic training (location, cost, requirements, difficulty) was listed by 45 respondents as the top cause. Other factors mentioned often included competition from others (nursing, fire); lack of advancement within the profession; generational differences; stress, fatigue, and burnout; lack of respect; and others.

#### EMS Education Agencies

The third group surveyed were the paramedic programs. The Committee on Accreditation of Allied Health Education Programs indicates, as of 2/28/21 that there are presently 26 paramedic programs in this state (23 Accredited and three with a Letter of Review [have applied to become accredited])(CAAHEP, 2021). Ten schools (38%) responded to the survey. Schools were asked how many students they had graduated from 2015 to 2019. This ranged from zero in some years, to 28. The highest number of graduates was reported in 2017 (Fig. 5).

Figure 5 – Paramedic graduates by year for seven responding programs



Eight of the ten respondents felt there was a shortage of paramedics. The top reason they cited for the shortage was low pay followed by work hours, low benefits, difficult work, expense of paramedic school and finally too few schools to accommodate the number of applicants.

This group felt that other factors that have created the shortage of paramedics included balancing paramedic program requirements with work, out of state recruitment, recruitment from other non-EMS agencies that do not render advanced life support care, choosing to go to other professions with similar education requirements.

#### Limitations

This survey had several limitations. Skip logic was not embedded in the design therefore the comments may not be fully representative. For example, if a participant indicated no, they did not feel there was a shortage, they were still asked, and many responded to why they felt there was a shortage. The free text comments were not analyzed using accept qualitative research standards – only one

reviewer interpreted the data, or a word cloud was developed to attempt to identify themes. Additionally, the response rates of the surveys were low and may not be representative of the entire state. The results were gathered in October and responses may have changed since that time.

### Discussion

A significant number of all types of respondents in all three groups felt there is a paramedic shortage in Missouri. In all three groups, pay and benefits emerged as the top factor perceived as being at the root of the problem. Other themes that arose were:

- Management and work climate (cited as reasons to leave a paramedic job)
- Distribution of paramedics at other employers, other states or leaving to other professions
- Well-being including fatigue and burn-out
- Access to education

It is not surprising that poor pay and benefits topped the list of reasons for the shortage. Missouri is not the lone state in this country seeking measures to increase reimbursement for prehospital care. There were however other findings that may be contributing to the perceived shortage.

The shift of paramedics from the ambulance-based workforce to other areas such as fire apparatus, out-patient health care settings such as urgent care centers, and emergency departments appears to be growing. With no concurrent growth in the number of graduates, the paramedic workforce available to staff ambulances may be declining.

Poor management, leadership or work climate was also mentioned by many paramedic respondents as a top reason for leaving a former job. This informs the MO EMS community of a potential need to provide support and education for EMS leadership in this state. This finding is

congruent with the results of a study by Cash et al., 2017 that listed this as a primary reason that personnel leave EMS.

Access to education, another reported area appears to be more acute in the rural areas. In 2020, Cash, Clay, Leggio, and Camargo mapped the distribution of paramedic programs by county throughout the country and demonstrated that Missouri's 27 programs were clustered primarily in urban areas. While their study found that 73% of the US adult population resided within 30 miles of a paramedic program, this was only true for 22% of rural adults.

### Conclusion

The threats to the paramedic workforce appear to be growing, especially in settings that do not have funding sources to permit adequate pay or benefits. Strategies to address the lack of adequate compensation, the redistribution of the workforce, well-being of paramedics, access to education and a perceived lack of leadership will need to be investigated to assure an appropriate level of advanced life support care is available in a regions of Missouri.

## References

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