

# Factors Associated with Receiving Feedback in the Prehospital Setting

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## BACKGROUND

- Continuous quality improvement (CQI) is critical for improving patient care and outcomes by informing EMS provider clinical decision-making. One element of CQI is performance feedback.
- Limited studies have suggested that EMS providers are not given feedback regularly,<sup>1</sup> but little is known about the extent of this gap, type of feedback that is provided, and factors associated with receiving feedback in the prehospital setting.

## OBJECTIVES

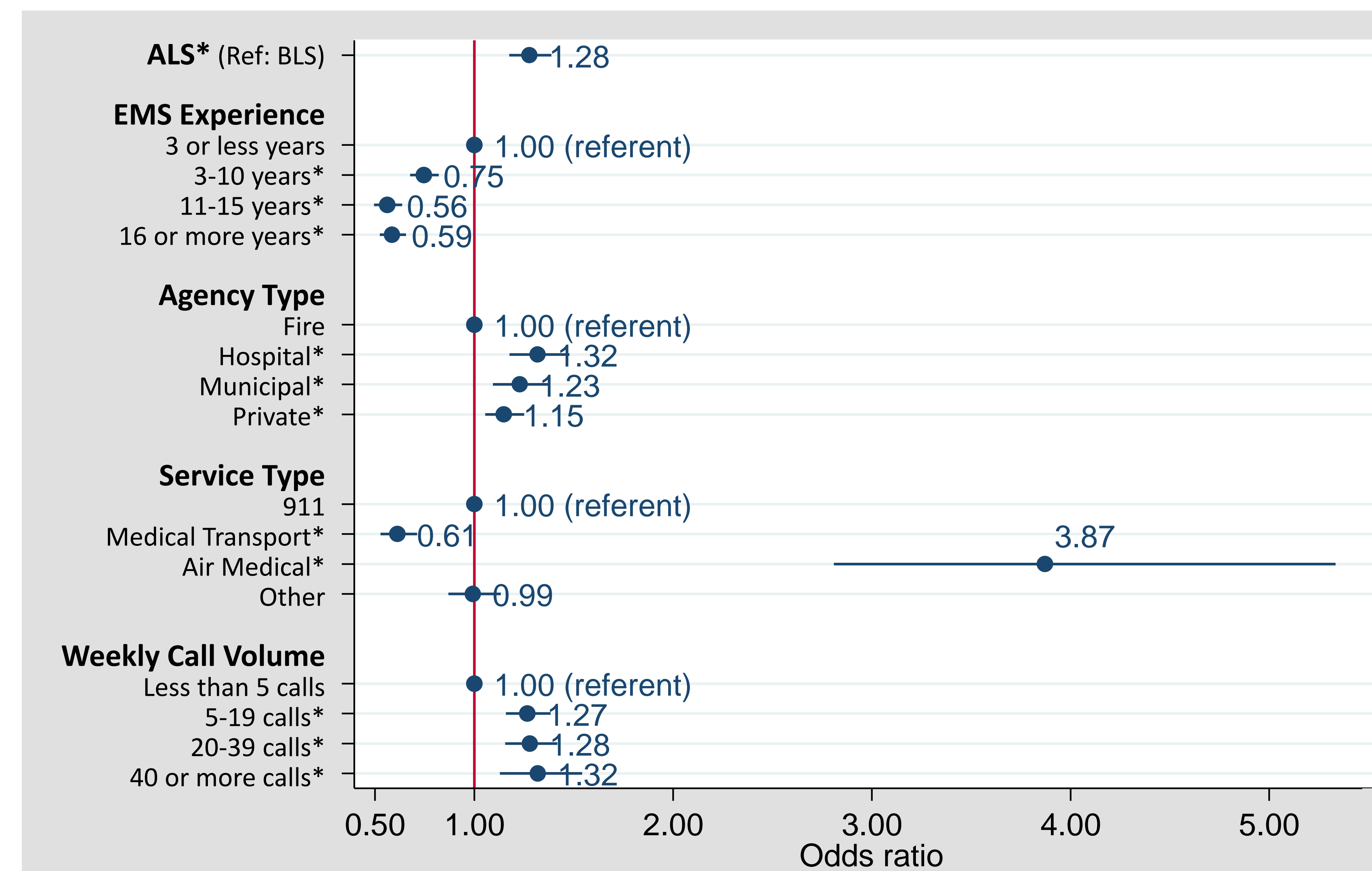
- Describe the prevalence of feedback in the prehospital setting.
- Identify characteristics associated with receiving feedback.

## METHODS

- **Study Design & Setting:** A cross-sectional census survey was administered in October 2014 to nationally-certified EMS providers concerning feedback received in the previous 30 days.
- **Inclusion Criteria:** Currently practicing patient care providers (Emergency Medical Technician [EMT] or higher) in non-military and non-tribal settings
- **Data Analysis:** Descriptive statistics were calculated and a multivariable logistic regression model was constructed to assess the association between receiving feedback and demographic/agency characteristics.

## RESULTS

- Responses from 32,114 EMS providers were received (response rate = 10.4%) with 15,766 meeting inclusion criteria.
- 31% of respondents reported receiving **no** feedback in the previous 30 days.
- The final multivariable logistic model included:
  - Certification level
  - Years of EMS experience
  - Agency type
  - Service type
  - Weekly call volume
- Model displayed good calibration (Hosmer-Lemeshow Goodness-of-Fit Test:  $\chi^2 = 7.41$ ,  $p = 0.4935$ ).



**Figure 1:** Forest plot of odds ratios for factors associated with receiving feedback among nationally-certified EMS professionals. Odds ratio (OR) estimates displayed with 95% confidence intervals. OR to the left of the red line favor the referent, while those that cross the red line are non-significant. Significant factors denoted with asterisk ( $p < 0.05$ ).

Abbreviations: ALS = advanced life support (Advanced EMT, paramedic); BLS = basic life support (EMT).

## LIMITATIONS

- Bias from self-reported data possible.
- The content of feedback and resulting practice changes were not assessed.
- Non-response bias: a non-responder survey showed no significant differences with regards to receiving feedback among respondents and non-respondents.

## CONCLUSIONS

- **Nearly one-third of EMS professionals did not receive any feedback in a 30 day period.**
- Variables associated with receiving feedback:
  - Respondents providing **air medical** services had an almost four-fold increase in odds of receiving feedback, whereas those providing **medical transport/convalescent** services had a 39% decrease in odds.
  - **ALS-level** respondents had increased odds of receiving feedback.
  - Increased odds of receiving feedback were observed for respondents working at **non-fire based agencies**.
  - Odds of receiving feedback decreased with **years of experience** in EMS.
  - **Higher call volumes** were associated with increased odds of receiving feedback.

## REFERENCES

1. Mock EF, Wrenn KD, Wright SW, Eustis TC, Slovis CM. Feedback to Emergency Medical Services Providers: The Good, the Bad, and the Ignored. *Prehosp Disaster Med.* 1997;12(02):74-77.