

# Modifiable Programmatic Factors as Predictors of Success on the NREMT Paramedic Cognitive Examination

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## Introduction

- While there are known predictors of success for certain pre-testing products, it is unknown if other educational decisions made by programs influences outcomes on this licensure examination.
- Modifiable factors may influence outcomes, yet a study of these factors had not been completed.

## Objectives

- The average first-attempt national pass rate on the NREMT paramedic computer adaptive test (CAT) was 74% (median=75%) for the year ending December 31, 2017.
- The reasons for this low rate are largely unknown. This study examined modifiable programmatic factors to determine which, if any, predict students' first-attempt success on the NREMT examination.

## Methods

- Cross-sectional electronic survey.
- Inclusion Criteria: CAAHEP Accredited paramedic programs in the United States in states that required the NREMT for initial licensure in 2017. 585 programs meet the inclusion criteria.
- Three rounds of recruitment emails were sent to program directors with a link to the survey.
- The survey consisted of both modifiable and non-modifiable factors, and the participants were asked to identify their most current pass rates on the NREMT examination.

**The use of *Flipped Classrooms* and increasing *Field Hours* are positively correlated to 1<sup>st</sup> attempt success on the NREMT-Paramedic Cognitive Examination.**

## Results

- 47.52% response rate (278/585) surveys sent, 240 returned).
- 22 modifiable programmatic factors included in the survey.
- Individual modifiable programmatic factors were analyzed utilizing univariate logistic regression, and significant factors found were then placed into a multivariate logistic regression model.
- The final model retained three factors that could predict 1<sup>st</sup>-attempt success including:
  1. Use of a flipped classroom (p=0.026)
  2. Increased field hours (p=0.041).
  3. Decrease use of computer-based testing (p=0.026).

## Limitations

Apparent Response Bias: respondents were skewed toward higher performing programs

- Survey mean=83.9%, median=85.6%
- NREMT: mean=74%, median=75%

## Conclusion

This study was the first to examine this number of modifiable factors as predictors of 1<sup>st</sup> attempt success on the NREMT. The use of Flipped Classrooms, increasing the number of field hours, and decreasing computer-based testing use were found to be correlated with improved 1<sup>st</sup> attempt outcomes in this research.



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