

# Evaluation of First-Time Pass Rates on the National Registry EMT Cognitive Exam Between Students of Traditional and Hybrid EMT Courses in South Carolina 2016-2017

Ryan Nix, BS, NRP, NCI<sup>1</sup>; Arnold Alier, EdD, NRP<sup>1</sup>; Rob Wronski, MBA, NRP<sup>1</sup>; Victor Grimes, MPH<sup>1</sup>; Courtney Harrison, MS<sup>2</sup>; Jennifer Kagarise Wilson, BA, EMT-B<sup>2</sup>; Sean Kaye, BA, EMT-P<sup>2</sup>; Brian Barrier, BA<sup>2</sup>; Antonio R. Fernandez, PhD, NRP, FAHA<sup>2</sup>

## INTRODUCTION

To keep up with constant changes in technology and education, as well as increased number of courses offered, Emergency Medical Technician (EMT) Programs in South Carolina (SC) have begun to use a hybrid delivery style to instruct initial EMT students. In the traditional classroom format, students sit in a classroom with an instructor lecturing to the class. The hybrid format uses a combination of traditional classroom time and online lectures, with classroom time normally dedicated to practicing skills and taking exams. In SC, all EMT students must obtain their National Registry EMT (NREMT) certification prior to obtaining their SC EMT certification. It is my belief that without the face-to-face interaction between instructor and student, that the first-time pass rates on the NREMT cognitive exam will decrease.

## OBJECTIVE

To evaluate first-time successful pass rates of EMT students that received their initial EMT training using a hybrid format versus the traditional classroom format.

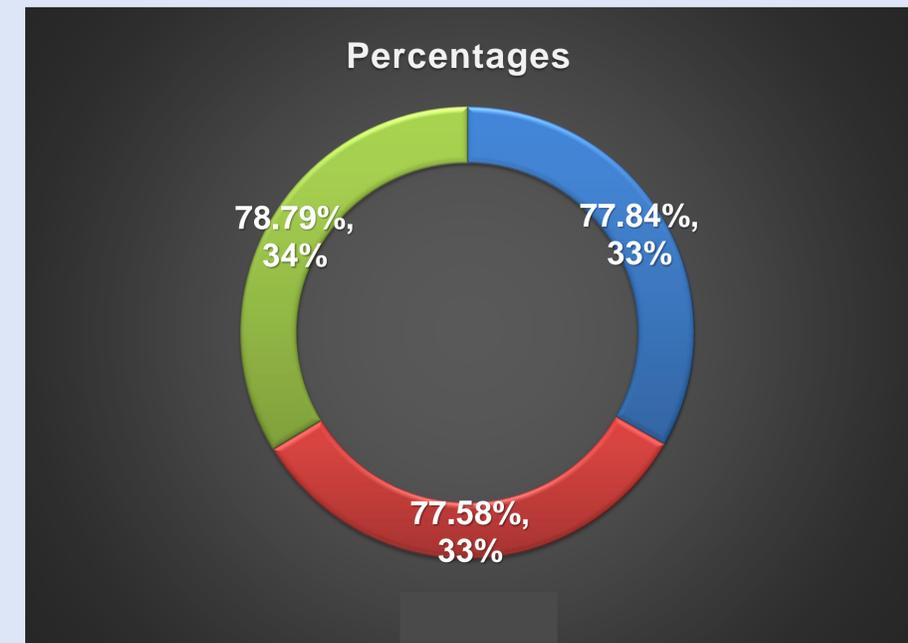
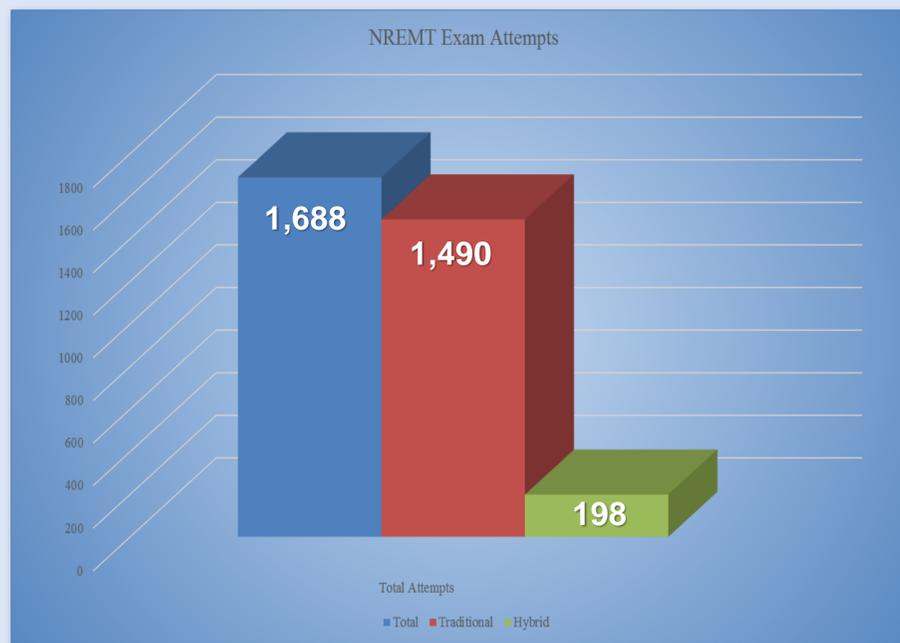
	Traditional	Hybrid
Pass	1,156 (77.6%)	156 (78.8%)
Fail	334	42
Total	1,490 (88.3%)	198 (11.7%)

## METHODS

Data was obtained from the South Carolina EMS Data System. NREMT first attempts from 2016-2017 were included and the outcome of interest was pass/fail. Courses were categorized as hybrid or traditional. Descriptive statistics, univariate Odds Ratios (OR), and 95% Confidence Intervals (95% CI) were calculated. Multivariable logistic regression was performed to adjust for student age and gender.

## RESULTS

During the study period, 1,690 individuals completed their first attempt on the National Registry Emergency Medical Technician (NREMT) cognitive exam in South Carolina. There were 1,314 (77.8%) individuals that passed their NREMT exam. Course format information was available for 1,688 (99.9%) of which 1,490 (88.3%) were traditional. There were 198 (11.7%) whose classes were listed as hybrid courses. There was no statistically significant difference noted when comparing course format and success on the first attempt of the NREMT exam with 1,156 (77.6%) that attended traditional courses passing versus 156 (78.8%) that attended hybrid courses passing (OR=1.07, 95% Confidence Interval 0.75-1.54, p=0.702). This relationship remained statistically insignificant after adjustment for student age and gender (OR=1.08, 95%CI 0.75-1.55, p=0.677).



## CONCLUSIONS

This study suggests that students who attend hybrid EMT courses have similar first time pass rates on the NREMT exam when compared to those students that attend traditional EMT courses. As this study has found no statistically significant difference between which type of class the initial EMT student completes, students should be encouraged to choose a course format that fits their preferred learning style.



<sup>1</sup> Emergency Medical Services and Trauma, South Carolina Department of Health and Environmental Control, Columbia, South Carolina, USA

<sup>2</sup> EMS Performance Improvement Center, Department of Emergency Medicine, School of Medicine, University of North Carolina – Chapel Hill, Chapel Hill, North Carolina, USA