EMS Education Program Quality Predicts National Certification Examination Pass Rates
Remle P. Crowe, MS, NREMT, Rebecca E. Cash, MPH, NRP, Severo A. Rodriguez, PhD, NRP, Ashish R. Panchal, MD, PhD

1The National Registry of EMTs, 2Center for EMS, Wexner Medical Center, The Ohio State University

RESULTS

EDUCATIONAL PRACTICES AMONG EMS TRAINING PROGRAMS VARY WIDELY.
THE DEFINITION OF A HIGH-PERFORMING PROGRAM IS SUBJECTIVE AND VARIES WIDELY.
IT IS UNKNOWN HOW PROGRAM QUALITY AFFECTS STUDENT PERFORMANCE.

BACKGROUND

• Educational practices among EMS training programs vary widely.
• The definition of a high-performing program is subjective and varies widely.
• It is unknown how program quality affects student performance.

OBJECTIVE

To assess how program quality (high/low performing) impacts pass rates on the National EMS Certification cognitive exam.

METHODS

• Study Population: EMTs and paramedics who graduated in 2013 and attempted the National EMS Certification cognitive examination.
• Independent Variable: Programs were classified as high-performing (HP) or low-performing (LP) if the program first-time pass rate was greater than or equal to the 2012 national average:
  EMT: 65%, Paramedic: 68%
• Outcome: Success on the National EMS Certification Exam
• Data Analysis: Descriptive statistics and univariable logistic regression modeling

RESULTS

Emergency Medical Technician
• EMT Programs (n=2,242): 52% HP and 48% LP
• 2013 EMT Graduates (n=67,716)
  • 59% from HP programs vs 41% from LP programs

Table 1. Odds ratios (OR) for first-attempt success on National EMS Certification cognitive exam by program performance status. Abbreviations: High-performing (HP); Low-performing (LP); Emergency Medical Technician (EMT).

<table>
<thead>
<tr>
<th></th>
<th>EMT OR (95% CI)</th>
<th>Paramedic OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LP Program</td>
<td>Referent</td>
<td>Referent</td>
</tr>
<tr>
<td>HP Program</td>
<td>3.63 (3.51-3.76)</td>
<td>4.68 (4.29-5.12)</td>
</tr>
</tbody>
</table>

LIMITATIONS

• Some small program sizes (<5 graduates) increased variability in pass rate estimates
• Does not include those who did not graduate or did not attempt the National EMS Certification exam.
• Does not include programs that were established in 2013

CONCLUSIONS

• Graduates of high-performing programs had greater odds of success on the National EMS Certification examination.
• After 3 attempts, graduates of low-performing programs did not achieve first attempt pass rates of high-performing graduates.

Figure 1: First-attempt and cumulative third-attempt pass rates for high-performing program EMT graduates. (*, p<0.001)
Figure 2: First-attempt and cumulative third-attempt pass rates for high-performing program Paramedic graduates. (*, p<0.001)