

EMS Education Program Quality Predicts National Certification Examination Pass Rates

Remle P. Crowe, MS, NREMT¹, Rebecca E. Cash, MPH, NRP¹, Severo A. Rodriguez, PhD, NRP^{1,2}, Ashish R. Panchal, MD, PhD^{1,2}

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



National Registry of
Emergency Medical Technicians®
THE NATION'S EMS CERTIFICATION™

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

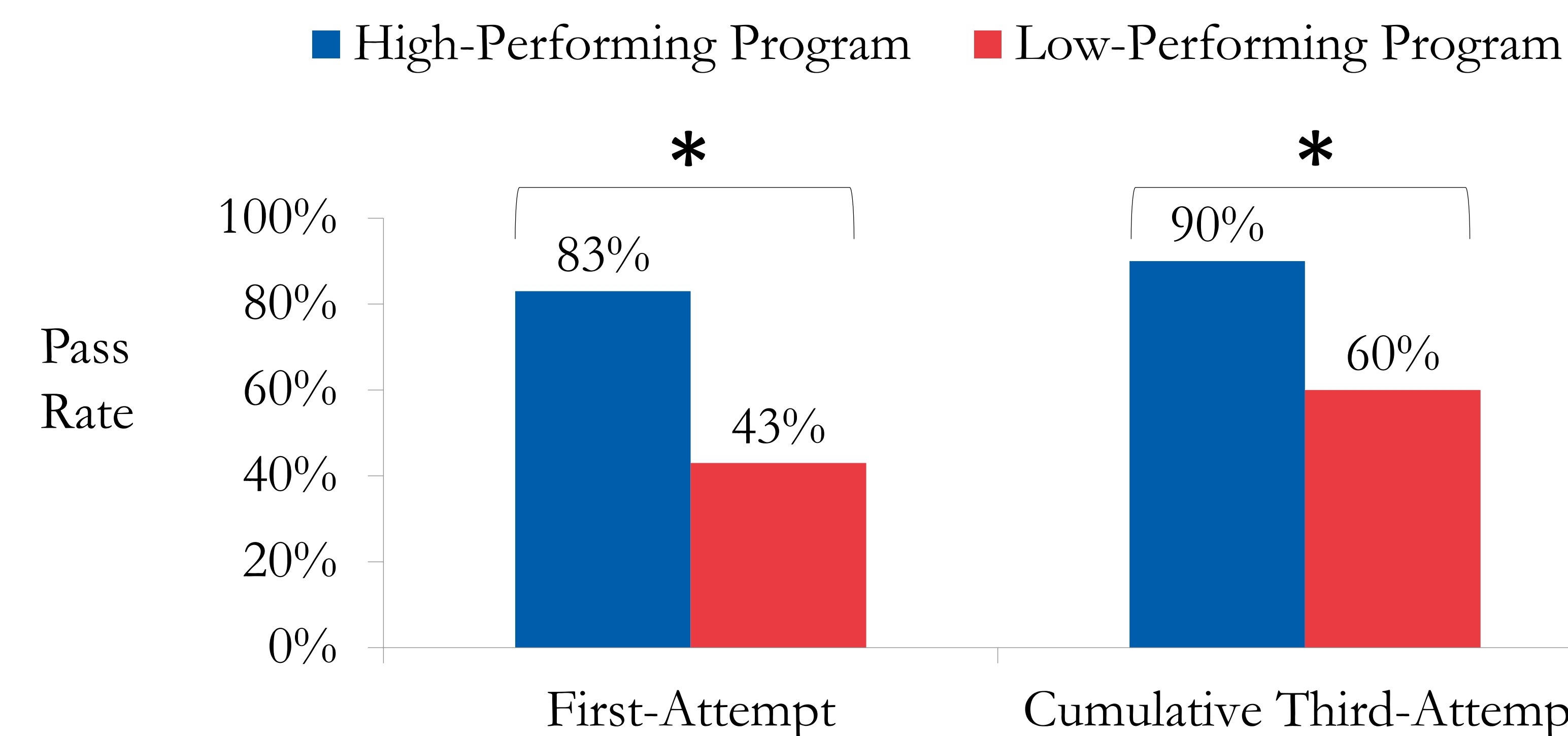


Figure 1: First-attempt and cumulative third-attempt pass rates for high-performing program EMT graduates. (*, p<0.001)

Paramedic

- Paramedic Programs (n=746): 57% HP and 43% LP
- 2013 Paramedic Graduates (n=11,177)
 - 65% from HP programs vs 35% from LP programs

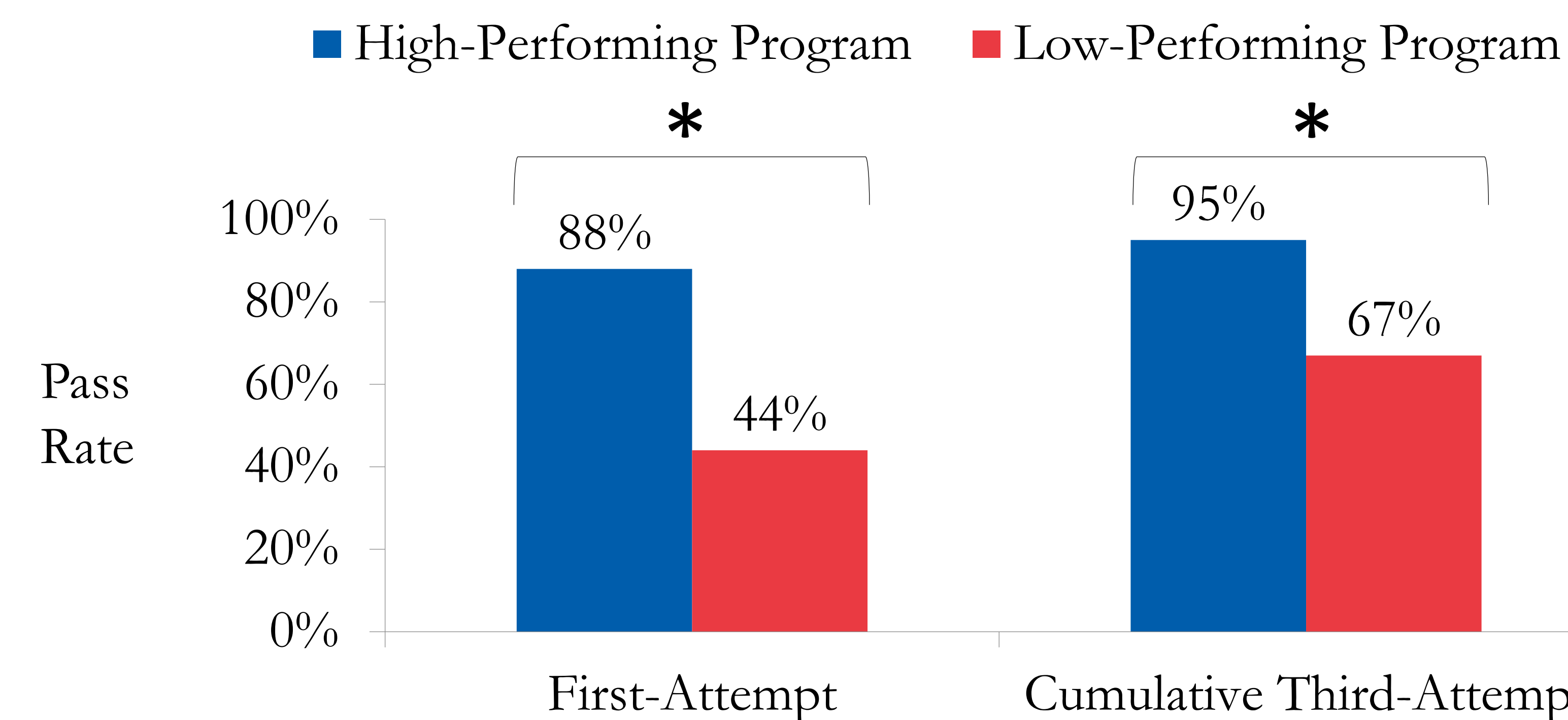


Figure 2: First-attempt and cumulative third-attempt pass rates for high-performing program Paramedic graduates. (*, p<0.001)

RESULTS

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).

	EMT OR (95% CI)	Paramedic OR (95% CI)
LP Program	Referent	Referent
HP Program	3.63 (3.51-3.76)	4.68 (4.29-5.12)

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.