

Introduction

The COVID-19 pandemic required unprecedented changes to the EMS paramedic educational framework.

It is unclear whether these pandemic-related changes impacted paramedic educational characteristics.

Objective

In this study, we aimed to evaluate the curricular changes and performance impacts of the COVID-19 pandemic on paramedic educational programs.

Methods

Study Design, Setting, & Population

- This analysis is a retrospective cross-sectional evaluation of paramedic educational programs comparing 2020 and 2019 data using the Committee on Accreditation of Educational Programs for the EMS Professions (CoAEMSP) annual report.
- Included in the analysis are all paramedic programs that reported enrolled students.

Measures

- We evaluated key program performance metrics for 2020 and 2019 including percent attrition, 1st and 3rd certification examination pass rates, program length (months), and hours of instruction.
- For the 2020 cohort, specific responses regarding the impact of COVID-19 on shutdown and curricular changes were collected.

Analysis

- Descriptive statistics were calculated [proportions (%), median (IQR)] for program characteristics and 2020 curricular changes.
- Wilcoxon rank sum and Fisher's exact testing were done to determine if there were any significant changes in characteristics between 2020 and 2019.

Results

Table 1: Program characteristics for paramedic educational programs with graduating cohorts in 2019 and 2020. *, p<0.05.

Characteristic	2019 N (%)	2020 N (%)	p-value
Total paramedic education programs, n	690	709	
Total students enrolled across programs, n	17457	16347	
Programs with graduating cohorts	640 (93%)	612 (86.3%)	0.11
Students enrolled per program (median, IQR)	18 (12, 30)	18 (11, 29)	0.49
Total hours of instruction (median, IQR)	1174 (1070.5, 1298)	1189 (1080, 1320)	0.16
Total Clinical experience, hours	216 (172, 276)	201 (157, 261)	0.01*
Graduated cohorts per program			
1 cohort	384 (56%)	392 (64.2%)	0.11
2 cohorts	153 (22%)	137 (22.4%)	
3 cohorts	52 (8%)	42 (6.9%)	
≥ 4 cohorts	51 (8%)	40 (6.5%)	
NASEMSO Regions			
East	107 (17%)	102 (17%)	0.99
South	254 (40%)	243 (40%)	
Great Lakes	134 (21%)	122 (20%)	
Western Plains	72 (11%)	72 (12%)	
West	72 (11%)	72 (12%)	

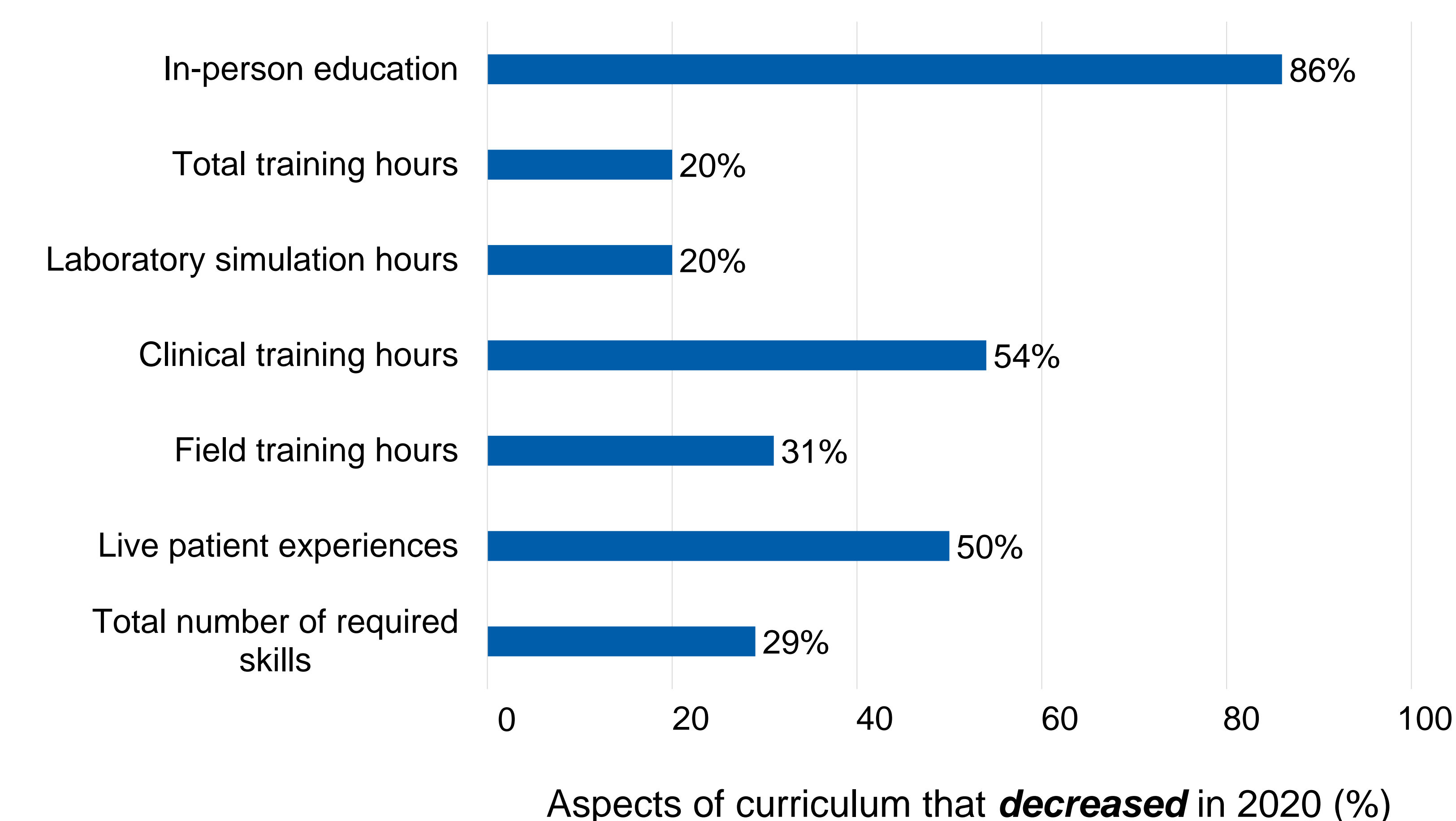


Figure 1: Impact of COVID-19 pandemic on paramedic educational curriculum for graduating cohort in 2020. With decreasing in-person education, there were subsequent decreases in all aspects of curricular experience involving in-person interactions.

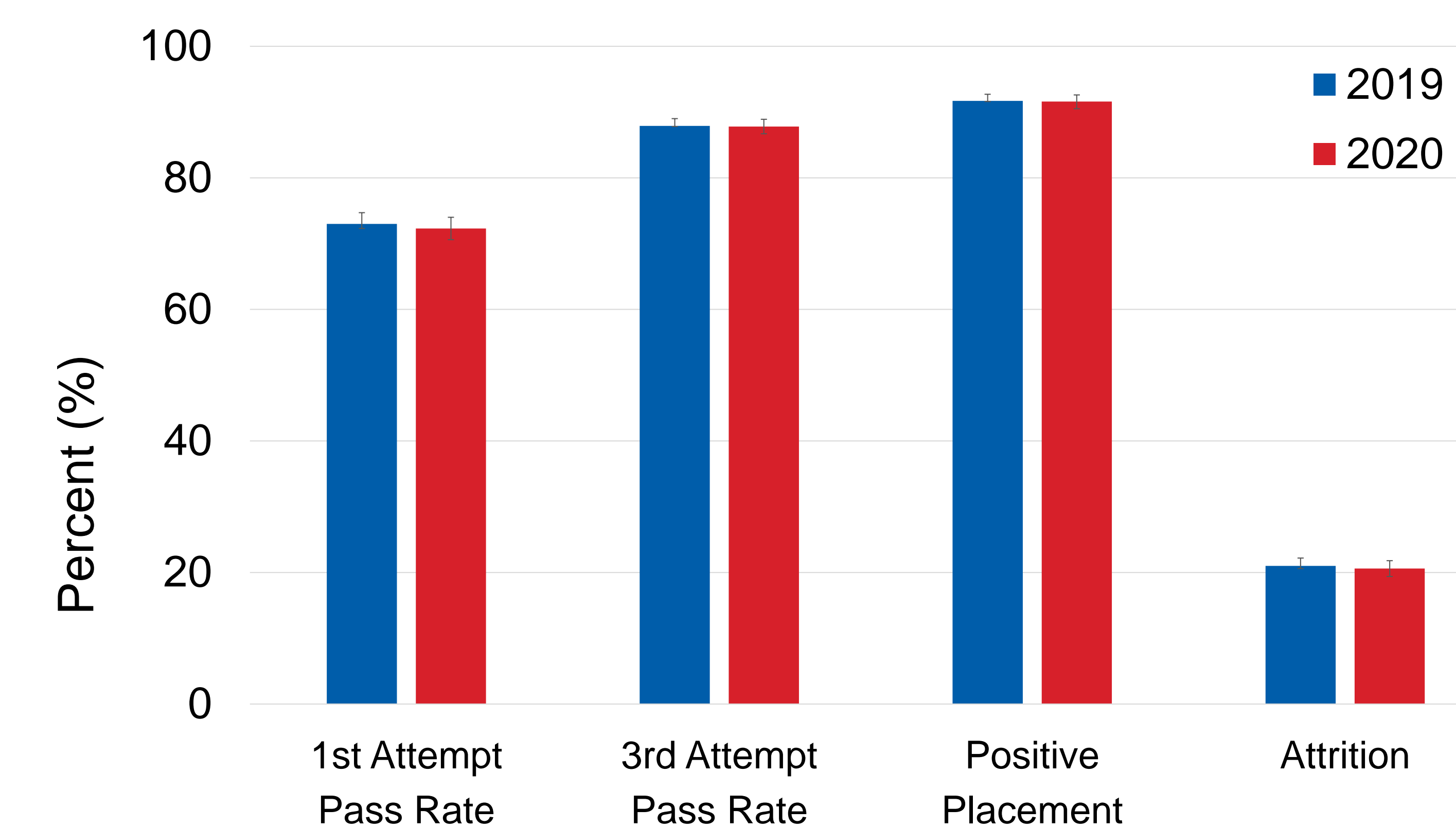


Figure 2: Paramedic education program outcomes for graduating cohorts in 2019 and 2020. There were no differences in program outcomes between 2019 and 2020.

Limitations

This study only compared 2020 changes to 2019 programs and is unable to compare to later program years due to possible residual changes.

Data were self-reported by each program and collected two years after the graduating cohort, which could result in recall or misclassification bias.

Conclusion

The only significant change in program characteristics was a decrease in clinical experience hours in 2020 (p<0.01).

Paramedic educational programs were resilient throughout the pandemic, with no significant change in performance outcomes.

Future work should evaluate the possibility of optimizing hybrid or remote paramedic education.

Acknowledgements:

We would also like to thank the hard-working EMS clinicians providing patient care and protecting the public of the United States.