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Triage Time Trials: Enhancing Emergency Preparedness through a Mass Casualty Incident Simulation Race

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involving personal preferences and training program characteristics. It is unclear to what degree the training program shapes career choice or if residents select training programs that align with their plans. Objectives: We sought to evaluate emergency medicine (EM) resident career plans over time and assess differences between 3- and 4-year training formats. Methods: We conducted a prospective cohort study of EM residents at 4 ACGME accredited residencies from 2020-2024. Participants completed an online survey at the onset of training and just prior to graduation. The survey consisted of multiple choice and completion items and was piloted prior to use. We calculated descriptive statistics and used univariable regression to determine factors with an association of $p<0.1$. We then used those factors in a multivariable logistic regression to determine statistical significance ($p<0.05$).

Results: 173 residents (89 from 3-year and 84 from 4-year programs) completed both initial and graduation surveys. Career plans at the start of residency were similar in 3-year and 4-year programs (Table 1). However, at graduation a greater number of residents at 4-year programs planned on fellowship or academic careers compared to 3-year program ($p<0.001$). 62 participants (35.8%) had a change in career plans during residency. Regression of all factors (including resident age, program, graduation year, MD or DO degree, and chief status) showed an association only between program format and change in career choice ($p<0.005$) with 4-year programs having a higher likelihood of transition. Number of transitions by type are listed in Table 2.

Conclusion: A greater number of residents at 4-year programs in this study planned on fellowship or academic career compared to those in 3-year programs, despite initial plans being similar between the groups. Residents in 4-year programs were more likely to change their career plans during residency.

Table 1. Career plans at beginning and end of residency in PGY 1-3 and PGY 1-4 programs.

	PGY 1-3 Initial n (%) Total n = 89	PGY 1-3 Graduation n (%) Total n = 89	PGY 1-4 Initial n (%) Total n = 84	PGY 1-4 Graduation n (%) Total n = 84
Fellowship	23 (26)	30 (34)	27 (32)	35 (42)
Non-Academic	61 (69)	58 (65)	51 (61)	33 (39)
Academic	5 (6)	1 (1)	6 (7)	16 (19)

37 Triage Time Trials: Enhancing Emergency Preparedness through a Mass Casualty Incident Simulation Race

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Background: Simulating a mass casualty incident (MCI) triage race provides a dynamic environment to practice and apply triage principles in a high-pressure, timed format. This innovative approach encourages residents to refine their triage skills while promoting engagement, time efficiency, and accuracy. Given the infrequent exposure to MCIs in clinical practice, this educational intervention helps prepare residents to manage crises effectively, bridging the gap between theoretical knowledge and real-world application.

Educational Objectives: By the end of this session, residents will be able to: define a mass casualty incident (MCI) and discuss the unique challenges inherent to mass casualty incidents and disaster/event medicine; differentiate between day-to-day triage and triage during a mass casualty incident; and apply the components of START (Simple Triage and Rapid Transport) for mass casualty incidents.

Curricular Design: The session was structured as an interactive simulation race. The scenario was framed as a cruise ship tour interrupted by an explosion on deck, requiring immediate triage and management of multiple casualties. Each “patient” was represented by a card placed in the field detailing vital signs and injuries. Residents raced to each patient, assessed their condition, and assigned the appropriate triage tag before carrying them to the designated color-coded area. Winners were determined based on both time and triage accuracy. Any incorrectly triaged patients were reviewed and discussed in a structured debrief to highlight key learning points. This hands-on activity provided an immersive experience for participants to develop triage skills in a fast-paced, competitive setting, mirroring the urgency and complexity of real-world MCIs.

Impact/Effectiveness: Feedback was collected through post-session surveys. All learners (100%) indicated that the MCI Triage Race was more motivating, engaging, and challenging than traditional didactic methods. Additionally, 86.7% of participants “strongly agreed” that the activity improved their preparedness to handle real-life MCI scenarios. These results suggest that incorporating gamification and simulation into MCI training can enhance resident confidence and competence in managing disaster situations.