

# Timings of Pre-hospital Life-saving Interventions During Mass Casualty Incidents: An Observational Simulation Pilot Study

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## Abstract

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## Abstract

**Objective:** This pilot study assessed the feasibility of measuring time to perform pre-identified lifesaving interventions (LSIs) used during mass-casualty incidents (MCIs).

**Methods:** An observational simulation study involving pre-hospital providers (PHPs) was conducted at London's Air Ambulance training center. PHPs performed 16 basic-to-advanced LSIs and were video-recorded to capture the LSIs' time intervals (TTs) (time from picking up equipment to completing the LSIs). TTs are reported in seconds (median and interquartile range [IQR]). Ethical approval was obtained from Queen Mary University.

**Results:** Seven PHCPs (five paramedics and two physicians) performed 92 LSIs, with paramedics limited to 11 LSIs due to their scope of practice. Physician-only performed LSIs had the longest TT compared to other LSIs, Rapid-sequence intubation 175.00 IQR(162.50–187.50). The longest TT in all LSIs was related to circulation support, with fluid resuscitation taking 99 IQR (88–101) for paramedics and 80 IQR(74.5–85.5) for physicians. LSIs with a median time exceeding 30 seconds were generally characterized by substantial variability, as indicated by a wide IQR.

**Conclusion:** This pilot study demonstrated the feasibility of recording timings for LSIs. Physician-only performed LSIs had the longest TT but were more complex interventions. Further investigation within a simulated environment is planned.

**Supplementary material.** The supplementary material for this article can be found at <http://doi.org/10.1017/dmp.2024.201>.