

# The impact of brief written leadership instructions on leadership behaviour and team performance in resuscitation teams: a prospective observational simulator-based study

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## ABSTRACT

**Objective:** Leadership is considered important during cardiopulmonary resuscitation (CPR). However, previous trials failed to show a benefit of designated leadership which may be explained by insufficient know-how on how to lead effectively. The aim of this trial was to test the hypothesis, that written leadership instructions lead to better leadership behaviour and better team performance during CPR.

**Methods:** In this prospective observational simulator-based trial, 20 teams of 6<sup>th</sup> year medical students each were confronted with a simulated cardiac arrest. In each team a designated team leader was randomly allocated. Prior to the simulation, all team members received brief written instructions on how to lead and how to follow in medical emergencies. These teams were compared to a historic control group of 16 teams undergoing the identical simulated scenario but having received no prior written leadership instruction. The primary outcome was hands-on time during the first 5 min of cardiopulmonary resuscitation (CPR). Secondary outcomes included number and quality of leadership statements. Data analysis was performed using video recordings from simulations.

**Results:** Written leadership instructions lead to higher hands-on times ( $65 \pm 9\%$  vs  $52 \pm 5\%$ ; 95% CI 8 to 18;  $P < 0.0001$ ), more leadership statements ( $26 \pm 9$  vs  $11 \pm 10$ ; 95% CI 9 to 22;  $P < 0.0001$ ), and more clear and directed leadership while the number of utterances and followers' behaviour remained unaffected.

**Conclusion:** In this prospective trial, leadership instructions improved the leadership behaviour of designated team leaders during CPR which resulted in improved team performance.