

Do paramedics and emergency physicians communicate effectively in simulated Emergency Medical Service scenarios?

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Background: Emergency Medical Service (EMS) providers are often exposed to stressful situations. Among other aspects of team performance, closed-loop communication may improve the effectiveness between physician and paramedic in such situations.

Method: We analysed medical air rescue teams in 26 videotapes of 5 different training scenarios (1. paediatric near-drowning, 2. traumatic brain injury of a child, 3. postpartum haemorrhagic shock, 4. post-lightning resuscitation, and 5. preeclampsia during interhospital transfer). All communication units between paramedic (PM) and emergency physician (EP) were recorded. Communication loops were defined, including initiation (information, question, command and drug application) and closing (action, affirmation, answer, explicit response and interpretative response); the respective items were rated specifically. Chi-square tests were used to compare communication patterns between PM and EP.

Results: Examination of 1479 communication units showed that type of initiation and closing of the loops differed between paramedic and emergency physician ($p < 0.01$). 54.6% of the communication loops were initiated by the EP, 45.4% by the PM. They included information (EP 28.1%, PM 46.7%), question (EP 15.2%, PM 39.4%), command (EP 49.2%, PM 3.9%) and confirmation of drug application (EP 7.4%, PM 10.0%). Overall, 20.1% of the loops remained unclosed, showing no difference between PM and EP.

Conclusion: EP and PM initiated communication loops in critical emergency situation equally often. Overall, 20.1% of the communication loops remained unclosed. Open communications bear the risk of loss of information and/or withhold of treatment. Therefore, strategies for closing communications under stressful surroundings may have a potential for improved team performance.