Author's response to reviews

Title: Performance during cardiopulmonary resuscitation: a prospective randomised simulator-based comparison between general practitioners and hospital physicians

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Author's response to reviews: see over
To the Editor  
BMC Emergency Medicine  

Stephan Marsch  
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Basel, August 7th 2008  

Dear Editor  

Please find enclose our manuscript, “Performance during cardiopulmonary resuscitation: a prospective randomised simulator-based comparison between general practitioners and hospital physicians”, that we hereby submit as an original research article for publication in BMC Emergency Medicine.

Our manuscript was originally submitted to BMC Medicin. The editor of BMC Medicine felt “that our manuscript would be ideally suited to the scope and readership of another of our journals, BMC Emergency Medicine” and copied over the details of our manuscript to BMC Emergency Medicine.

The main topics of our study are 1) cardiac arrest and cardiopulmonary resuscitation, 2) head-to-head comparison of the performance of general practitioners and hospital physicians, 3) teamwork, and 4) simulation.

Cardiac arrests are frequent emergencies both within and outside hospitals. Strict adherence to existing guidelines of cardiopulmonary resuscitation leads to remarkable outcomes. However, “in the real world” the outcome of victims of cardiac arrest remains disappointingly poor. Thus, there is a gap between potentially achievable outcome and outcome achieved. Our findings are relevant for all settings and specialities, where cardiac arrests and cardiopulmonary resuscitation may occur – i.e. virtually everywhere. Moreover, in a wider sense our findings are interesting and relevant for all settings and specialities where medical emergencies can arise that are better handled by a team rather than by a single health-care worker.
To the best of our knowledge, this is the first head-to-head comparison of general practitioners and hospital physicians with regard to their performance in a highly relevant medical emergency. Our results demonstrate that general practitioners provide the same amount of basic life support than hospital physicians. This finding is of medical, social and political relevance: as the profession of general practitioners is under scrutiny and pressure in many parts of the world it is reassuring to realise that general practitioners can perform as least as proficient as hospital physicians. A further important finding of our study is that general practitioner delay defibrillation. This finding is relevant for all general practitioners involved in medical emergencies. It is hoped, that general practitioners (and others) reading our article become encouraged to use a defibrillator as soon as one is available.

Communities, hospitals and many other organisations have to develop plans on how to deal with cardiac arrests. Even if dedicated emergency teams exist within a community or institution, such teams are usually not immediately available at the onset of a cardiac arrest. Thus, as a clinical reality most if not all medical emergencies have to be handled, at least initially, by ad-hoc forming teams. Thus, our findings on ad-hoc forming teams are both interesting and relevant for communities and all medical institutions.

Modern healthcare is a team endeavour. Our study demonstrates that the quality of teamwork can have a profound effect on patients’ care. Moreover, our results demonstrate that imposed conditions of team building may have a significant effect on team performance and hence patients’ care. Again, this may be relevant for medicine in general and all medical specialities. Further research is necessary to identify measures that promote optimal team work within the constraints of modern health-care.

Simulation is a comparatively novel tool in the medical field. Simulation has so far been mainly used to teach and assess technical competence. Our study goes one step further and demonstrates that a patient simulator is a powerful research tool for conditions that for practical, medical and/or ethical reasons can not be investigated in real patients. In addition, our study demonstrates that both technical and behavioural skills (e.g. leadership and communication) can be reliably investigated in a simulator. The use of a simulator as a research tool and its potential for the assessment of technical and behavioural skills is both interesting and relevant for all medical specialities.

In conclusion, we believe that our study is of interest for medicine in general and all medical specialities. We hope therefore, that our manuscript is suitable to be published in *BMC Medicine*.

Yours sincerely

Stephan Marsch, MD, DPhil