Biomed Tech 2012; 57 (Suppl. 1) © 2012 by Walter de Gruyter · Berlin · Boston. DOI 10.1515/bmt-2012-4538

Patient-oriented Emergency Care – a Telemedical Rescue Assistance System

Marie-Thérèse Schneiders, Institute of Information Management in Mechanical Engineering (IMA) Aachen University, Germany, Marie.Schneiders@ima.rwth-aachen.de
Frederik Hirsch, Department of Anaesthesiology, University Hospital Aachen, Germany, fhirsch@ukaachen.de
Christian Büscher, Institute of Information Management in Mechanical Engineering (IMA) Aachen University, Germany, Christian.Buescher@ima.rwth-aachen.de
Daniel Schilberg, Institute of Information Management in Mechanical Engineering (IMA) Aachen University, Germany, Daniel.Schilberg@ima.rwth-aachen.de
Sabina Jeschke, Institute of Information Management in Mechanical Engineering (IMA) Aachen University, Germany, Sabina.Jeschke@ima.rwth-aachen.de

Introduction

To improve the treatment of patients with cardiovascular diseases the immediate support by an EMS physician is crucial. In times of increasing numbers of EMS missions and decreasing numbers of available physicians the use of Information Technology constitutes one important step towards better and efficient healthcare. The research project ”TemRas “implements an innovative concept for quality improvement in emergency care. The project’s objective is the usage of telemedical assistance in emergency services in Germany.

Methods

By the means of information technology, the Telemedical Rescue Assistance System offers the opportunity for the EMS personnel to be supported via mobile communication by a high qualified EMS physician during emergency missions. Audio data, the patient’s vital parameters and video streaming out of the ambulance are instantly transferred via mobile communication technology from the emergency site to a tele-EMS physician in a teleconsultation center. The transmitted data allow the tele-EMS physician to diagnose the patient and support the EMS team on. Software will support the tele-EMS physician implementing a guideline-oriented patient care. Working with such guidelines results in a consistent and high quality treatment by the EMS personnel on site.

Results

Starting in August 2012, six ambulances of the five selected EMS districts in North Rhine-Westphalia equipped with telemedical devices will be connected to the teleconsultation center. This center is staffed with two experienced tele-EMS physicians. About 300 paramedics are trained in the adequate technical usage and the application of developed standard operating procedures (SOP) to enhance the quality of treatment processes and to foster a guideline-oriented patient care.

Conclusion

The presented research activity offers the opportunity to create innovative healthcare processes for EMS, enabling the virtual presence of a physician in every possible situation to improve the quality of patient-oriented emergency care. Especially patients in rural areas will benefit from TemRas.