POSTER 119

The Efficacy of Broadband Video-Conferencing in Teaching Cardiac Arrest Skills: A Comprehensive Study

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Purpose: The maintenance of competence of paramedics becomes more complex as demands on their time increase, and technological advances constantly change the nature of their work. The problem is complex, particularly when clinical psychomotor skills must be taught, and expert modelling is necessary. Broadband (45Mbits/units) telecommunications can alleviate these problems. Fiber-optic telephone lines can transmit data, audio, and high-quality video simultaneously between multicenters. Video-conferencing can reduce the transactional distance. The purpose of this study was to determine if broadband video-teleconferencing (BVT) is as effective as in-class instruction (ICI) for the teaching of selected clinical skills.

Method: Forty-three mid-level paramedics from the British Columbia Ambulance service were assigned randomly to two treatment groups: ICI and BVT. Participants received two-hour blocks of instruction in defibrillation, intubation, and cardiac arrest management, and were tested using a criterion referenced evaluation. The BVT group was assessed through both BVT and ICI. Consequently, a latin squares ANOVA was used to control for the main effects of order and method of assessment. Independent sample *t*-tests were used to compare achievement scores between the BVT and ICI groups.

Results: There was no statistical difference in achievement between the two delivery methods.

Conclusions: Broadband video–conferencing is an effective delivery method for teaching clinical skills. With the increasing availability of fibre-optic telecommunications, fully interactive, skill-based training can be delivered through telephone lines.

POSTER 218

Paramedic Efficiency and Interpretation of Prehospital 12-Lead Electrocardiography

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Hypothesis: Paramedic application and interpretation of field 12-lead electrocardiograms (ECGs) is efficient and accurate after a four-hour training session.

Methods: A four-hour course was established and trained 19 paramedics how to apply a 12-lead ECG using an adapter to the Physio Control Life. Pak 10 and to interpret the tracings obtained. Their interpretation skills included how to recognize acute myocardial infarction (AMI) by ST elevation of 1 mm or more in at least two contiguous leads and differentiate non-infarctional causes of ST elevation (LBBB, pericarditis, LV aneurysm, or artifact). Over a nine-month period, field 12-leads were applied to patients 18 years or older with complaints suggesting a cardiac origin. Paramedics interpreted the results. Agreement between the paramedics and the final hospital diagnosis were compared by confidence interval analysis. Prehospital scene times were compared to 144 patients of similar complaints encountered by the same units prior to implementation of field 12-lead ECG.

Results: A total of 186 patients received a field 12-lead ECG. Of these patients, 22 received a final hospital diagnosis of MI. The average increase in scene time was 3.1 minutes. Paramedics correctly diagnosed AMI in 20 of 22 patients (91%). They over-read AMI in 52 patients. 37/52 cases (71%) of the over-reads were due to misinterpretation of repolarization variants as an anterior AMI.

Conclusion: Paramedics trained in four hours can apply and interpret accurately and efficiently field, 12-lead ECGs to aid in the rapid diagnosis of AMI.