

SPACE LIFE SCIENCES SYMPOSIUM (A1)
Medical Care for Humans in Space (3)

Author: Mr. Matthew Turnock
University of Toronto, Canada, matthew.turnock@utoronto.ca

Dr. Dave Musson
Canada, musson@mcmaster.ca

A REVIEW OF TELEMEDICINE SOLUTIONS TO ACUTE CARE IN THE PRE-HOSPITAL
SETTING.**Abstract**

Pre-hospital acute healthcare is the provision of emergent healthcare outside of a hospital or clinical environment where resources or access to tertiary care may be forthcoming, delayed or non-existent. Telemedicine has been shown to be effective in improving the management of emergencies in pre-hospital care. The potential to: 1) facilitate the avoidance of unnecessary emergency transport, 2) improve patient care in the hospital, and 3) enhance the capabilities of first responder and medical personnel capabilities, is magnified dramatically when using telemedical technologies.

A structured review of PubMed, the Cochrane database, ISI Web of Knowledge, EMBASE, and Inspec was conducted using combinations of the following search terms: telemedicine, telehealth, teleradiology, telepathology, teleconsultation, telestroke, remote, mass casualty, disaster, disaster response, pre-hospital, ambulance, ems, 911, acute care, emergency care. In addition, hand searches of the identified articles' references were conducted to improve comprehensiveness. Papers were excluded if they involved homecare, if they dealt exclusively with the technological aspects of telemedicine, or if they were in a language other than English.

This paper summarizes telemedicine research in the pre-hospital setting, highlights specific examples of the clinical use of these technologies, and outlines historical and emerging technologies of specific value to pre-hospital healthcare providers. Furthermore, special attention will be paid to the transferability of this research into developing solutions for human spaceflight, a unique pre-hospital environment.