

Real-Time Biomedical Telemetry System for Ambulances

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ABSTRACT

This chapter discusses the development and implementation methodology of a real-time biomedical telemetry system for ambulances. Comparable systems, together with their authors' claimed improvements, are evaluated and analysed in this article. We start by providing an overview of the most relevant systems, and then introduce the reader to the methodology used to develop and implement a real-time communications system that allows low-cost data transmission from a medical monitor and haematology analyser installed in an ambulance. This system was evaluated in terms of how well it can provide health assistance within a 50 km radius of the Torrecardenas Hospital (part of the public health-care system in southern Spain). Results have been technically and medically validated, and encourage further implementation of this technology, since it was proved to be reliable, while the transmitted data allow a correct and thorough patient evaluation throughout the patient's transportation to the hospital.

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INTRODUCTION

For many years, advances in medicine have been accompanied by similar developments in technology. Over recent decades, the development of electronic equipment-based biomedical systems has allowed remarkable improvements in research, diagnostic, and patient treatment techniques, as confirmed by Meystre (2005).

The use of information and telecommunication technologies, as well as electronics applied to medicine may go beyond the medical techniques and provide support for other processes associated with healthcare. The overall goal is to improve the process of providing healthcare, to improve information and

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