

Abstract

Background: Accident and Orthopaedic Service (AOS) of Sri Lanka is the premiere trauma care centre in Sri Lanka which caters nearly 100,000 trauma victims yearly. Also, it is one of the early adopters of emergency department health information system(EDIS). This provided unique opportunity, to study the intricate interplays between the clinical care process and the system as well as taking actions to strengthen them. The clinical information system was facing many challenges to cope up with increasing demands of the complex working environment and solutions had to be made to ensure the survival and sustainability.

Methods: The study considered the EDIS as a sociotechnical system by considering the not only the technology but also the interactions of the users as well as the organizational environment. The naturalistic approach was employed to observe the system for nearly one and half years which helped to develop a detailed understanding of the system. This was complemented by previous evaluation done on the same system as well as quantitative data gathered from the system generated reports. The project laid its foundation on action research methodology which allows the researcher to work with the system improving it by addressing problems while generating academic knowledge for a wider audience.

Results: There were 3 action research (AR) cycles which address the main six stakeholders of the system. In the AR cycle one, the clinical table database was tailormade according to the requirement of the AOS and enabled the system to handle all procedures, medications and Investigations. In AR cycle two, problems pertaining to DICOM (Digital Imaging and Communications in Medicine) system were identified and actions were taken to alleviate the situation. A standard X-ray protocol list was developed and integrated into the system. Finally, in the AR cycle 3, the queue management system was implemented.

Conclusion: Principles of sociotechnical theory can be used successfully to improve the EDIS. Furthermore, the system has a great potential to improve the service delivery in trauma care setup. However adequate training, prompt maintenance, adaptive changes to cater needs of AOS must be carried out with the collaboration between all stakeholders to ensure the survival and sustainability of the system.