Abstract

Background: Being a developing country offering free public health service to all its residents, Sri Lanka has made remarkable strides in the health sector and is ahead of most of its peers, in the region. The state sector healthcare system has been using paper based medical records of patients and currently is in the process of using Electronic Medical Record Systems (EMRSs) to be on par with the digital health revolution happening across the world and also with the aim of enhancing efficiency in the healthcare service. With this evolution, certain concerns such as security, privacy and confidentiality of patient's information have become a challenge, due to vulnerabilities experienced in accessing these electronic systems and data bases, by various users.

Methods: Two (2) Sri Lankan government hospitals namely Castle Street Hospital for Women and Base Hospital Panadura which, are using the two (2) main EMRSs in Sri Lanka, i.e. the Health Information Management System (HIMS) and Hospital Health Information Management System (HHIMS) were selected for the study. The research was based on a mixed method using quantitative and qualitative analysis. An interviewer guided questionnaire was distributed and one to one discussions with the system users were held to determine their perception on EMRS and user level security vulnerabilities. Further, observations made by the author/ investigator were also considered.

Results: This study found that, currently both health institutions are heavily exposed to user level vulnerabilities which should be recognised as a "*critical and imperative concern*" by the relevant authorities especially, considering the recent "system breaches and cyber-attacks" that happened in other countries, which boast about stability and robust security of electronic systems.

Conclusion: Safeguarding the security, privacy and confidentiality aspects is a major concern in EMRSs and a common challenge for all health institutions across the world in a day and age when Information Technology (IT) advances are overpowering human intelligence. As Sri Lanka embraces these eHealth innovations, considering the present weaknesses identified, immediate attention should be focused on developing, appropriate guidelines to improve user level security of EMRSs in the state hospitals. If not, Sri Lanka's health sector will be exposed to greater vulnerability and loss of confidence by the public.