

Abstract

Background: Paediatric Early Warning Score (PEWS) systems are in paediatric clinical practice, for early recognition of clinical deterioration and effective management of the possible morbidity and mortality by assessing the respiratory, circulatory and neurological parameters. Paper based PEWS systems in the Sri Lankan setting have failed due to multiple underlying causes. Under these circumstances this study was carried out in a Sri Lanka's leading children's state hospital to design, pilot and evaluate an electronic data capture tool to facilitate calculation of PEWS and documentation process at a busy preliminary care setting.

Method: This study adopted an action research strategy to design and develop a web based PEWS system. Interviews and focus group discussions with identified stakeholders and personal observations made by the author/investigator facilitated the identification of user requirements for the proposed electronic system. System usability scale coupled with interviews were used for system usability evaluation. Recommendations were made to mitigate and anticipate the identified threats for the successful implementation of the system.

Results: Challenges for initiation of PEWS at the study setting were identified regards to patterns of Afferent Limb Failure. In addition, required system features to address those challenges were also identified. Acceptability of the electronic tool have been depicted by the score of 77.8 in the System Usability Scale. Improved efficiency, data capturing and automated PEWS calculation with recommendations have been highlighted as the key demarcated for the positive feedback.

Conclusion: PEWS can be embraced as a part of a large multifaceted safety framework. Frequent user training and updates to the system can strengthen the sustainability and success of this eHealth solution. Coupling the PEWS systems with an appropriately designed electronic data capturing tool can address the Afferent Limb Failure successfully. Furthermore, it can facilitate advance patient care which suits the working environment of a busy Preliminary Care Unit.