TRANSASSIST- A CROSS-HOSPITAL WEB SOLUTION CAPABLE OF MINIMIZING DELAYS IN INTENSIVE CARE UNIT (ICU) TRANSFERS OF SRI LANKA

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Abstract

"The greatest wealth is health" - Ralph Waldo Emerson (1860). Today these words bear a paramount weight, with the COVID19 pandemic leaving all of humanity shaken and vulnerable, it is undeniable that the greatest wealth indeed is health.

Intensive care units (ICUs) are vital resources in critical care medicine, as it is the sector that attends to critical patients who are severely unwell. However, despite being a fundamental need, intensive care units are very limited in number. Due to this shortage there is a continual demand for ICU facilities as many patients seek the same resources. Therefore, it is often time-consuming for hospital ward staff to locate a vacant ICU bed. Delay to locate a vacant ICU bed leads to a delayed ICU transfer which subsequently leads to an increase in patient mortality. At present, ICU transfer delays occur nearly on a daily basis in Sri Lanka.

The following dissertation aims to identify the causes of ICU transfer delays in Sri Lanka and provide an IT solution capable of minimizing delays and optimizing the transfer procedure. The project focuses on bridging the gap between a hospital ward and a hospital ICU to ensure that the transfers which take place between the two are optimized. When conceptualizing the solution, several factors such as visibility of bed availability, hospital proximity, patient criticality and automation of manual processes were considered. Ample amounts of literature were reviewed to validate the need for the solution and to identify appropriate methods of intervention. Furthermore, interviews were conducted with the stakeholders to identify and accommodate their requirements.

Through this, ***"TransAssist"*** was designed and developed, the name itself is derived from the phrase "Transfer Assistant", as the solution interjects to assist ICU transfers. The solution is a holistic web-based system which provides cross hospital ICU bed visibility and locates the most optimum transfer based on bed availability, hospital proximity and patient requirement. Additionally, the solution has automated a few manual processes which take place in the course of a transfer. Once developed, the solution was evaluated by problem domain experts and IT experts to ensure the system